



D1900V2, Serial No. 5d182 Extended Dipole Calibrations

Referring to KDB 865664 D01 v01r02, 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.

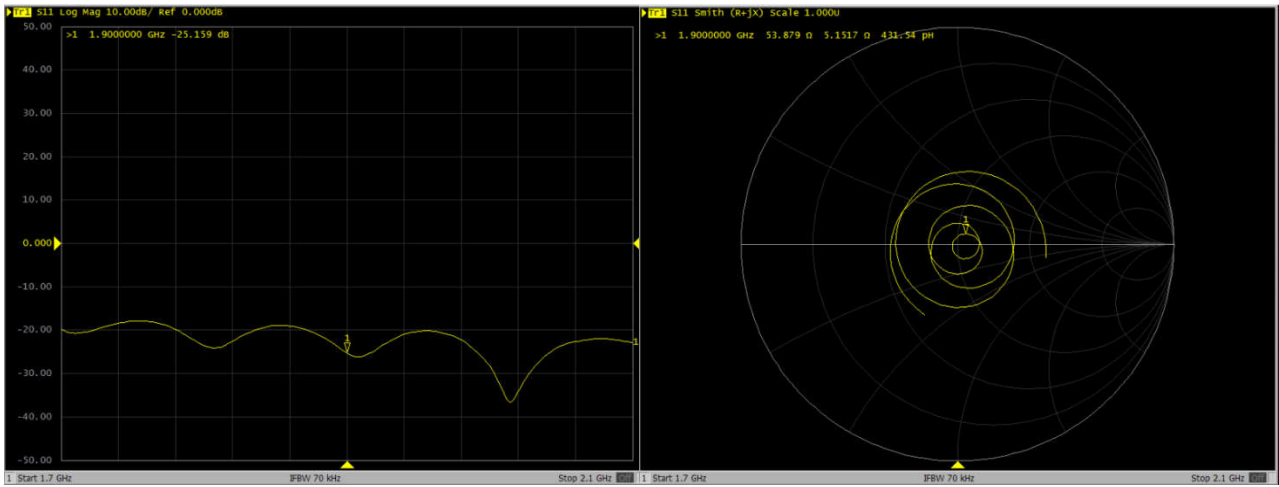
D1900V2 – serial no. 5d182												
	1900 Head						1900 Body					
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2018.12.7	-25		52.1		5.35		-24		48.9		6.19	
2019.11.25	-25.2	-0.8	53.9	1.8	5.15	-0.2	-24.2	-0.8	48.7	-0.2	5.93	-0.26
2020.11.25	-25.8	3.2	52.6	0.5	4.56	-0.79	-24.2	-0.8	49.6	0.7	6.11	-0.08

<Justification of the extended calibration>

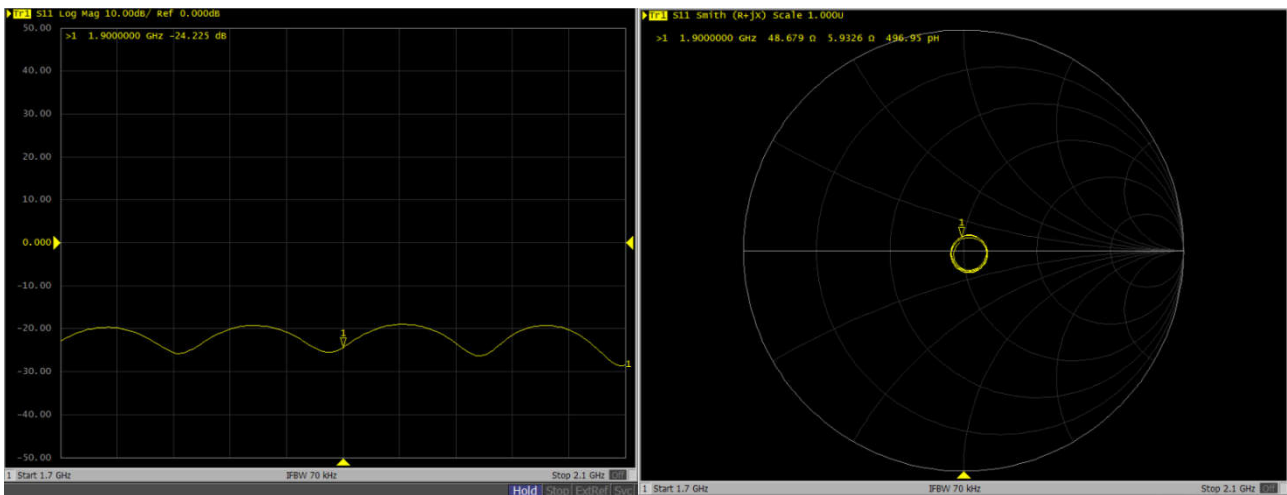
The return loss is $< -20\text{dB}$, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

Dipole Verification Data> D1900V2, serial no. 5d182

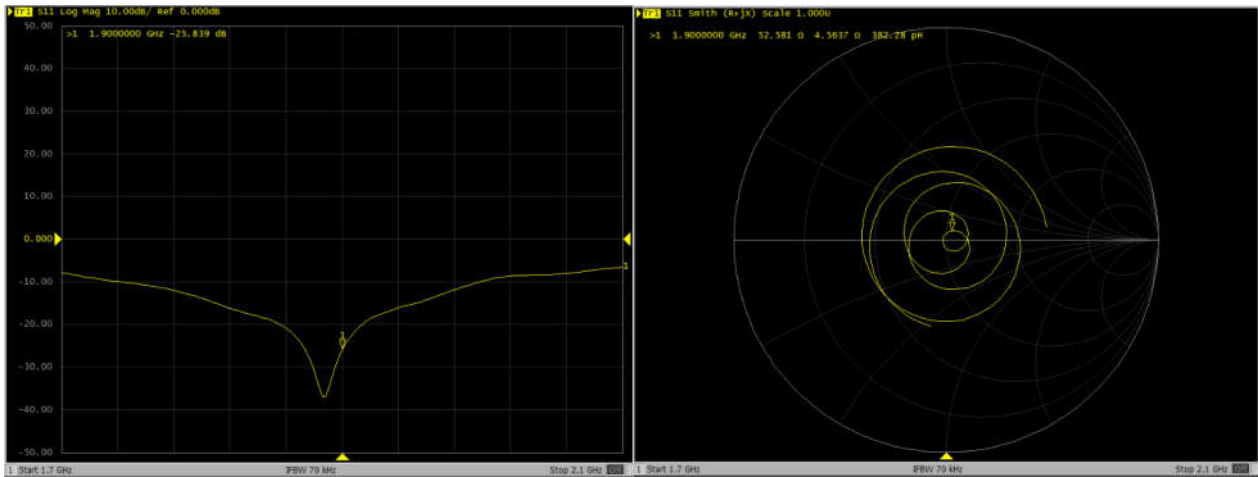
1900MHz – Head---2019.11.25



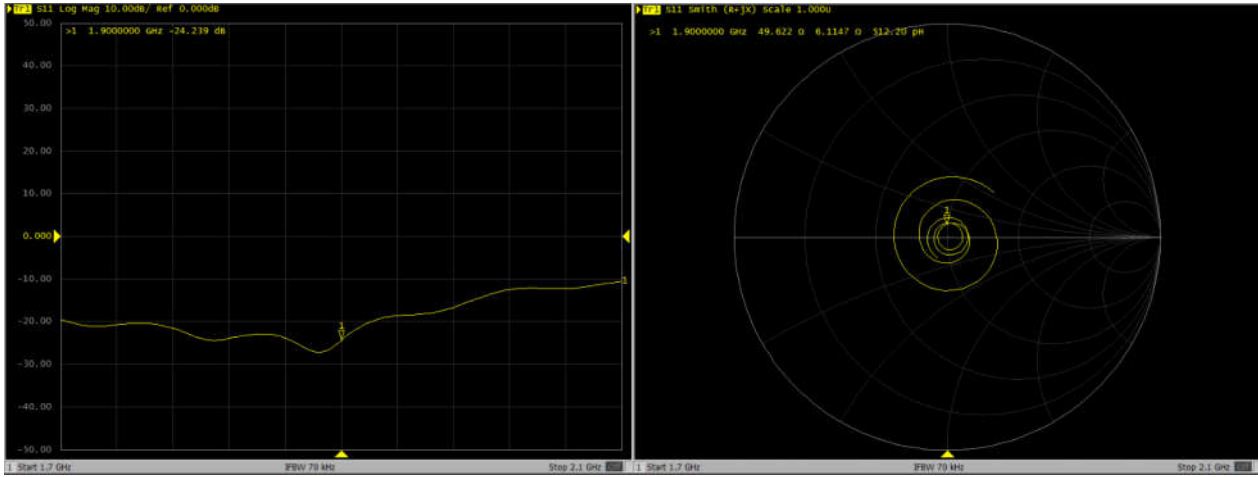
1900MHz – Body---2019.11.25



1900MHz – Head---2020.11.25



1900MHz – Body----2020.11.25





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

Accreditation No.: SCS 0108

Client **Sporton**

Certificate No: D2450V2-924_Sep20

CALIBRATION CERTIFICATE

Object: **D2450V2 - SN:924**

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

Calibration date: **September 02, 2020**

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

All calibrations have been conducted in the closed laboratory facility: environment temperature $(22 \pm 3)^\circ\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	01-Apr-20 (No. 217-03100/03101)	Apr-21
Power sensor NRP-Z91	SN: 103244	01-Apr-20 (No. 217-03100)	Apr-21
Power sensor NRP-Z91	SN: 103245	01-Apr-20 (No. 217-03101)	Apr-21
Reference 20 dB Attenuator	SN: BH9394 (20k)	31-Mar-20 (No. 217-03106)	Apr-21
Type-N mismatch combination	SN: 310982 / 06327	31-Mar-20 (No. 217-03104)	Apr-21
Reference Probe EX3DV4	SN: 7349	29-Jun-20 (No. EX3-7349_Jun20)	Jun-21
DAE4	SN: 601	27-Dec-19 (No. DAE4-601_Dec19)	Dec-20

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Feb-19)	In house check: Oct-20
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-18)	In house check: Oct-20
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-19)	In house check: Oct-20

Calibrated by: **Jeffrey Katzman** Name: Jeffrey Katzman Function: Laboratory Technician

Approved by: **Katja Pokovic** Name: Katja Pokovic Function: Technical Manager

Signature

Issued: September 2, 2020

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



Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 0108**

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

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 the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- KDB 865664, "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%.

Measurement Conditions

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

DASY Version	DASY5	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	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	38.9 \pm 6 %	1.84 mho/m \pm 6 %
Head TSL temperature change during test	< 0.5 °C	---	---

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.0 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	51.4 W/kg \pm 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.04 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	24.0 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	53.9 Ω + 7.2 j Ω
Return Loss	-22.1 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.155 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
-----------------	-------

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:924

Communication System: UID 0 - CW; Frequency: 2450 MHz

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.84$ S/m; $\epsilon_r = 38.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.74, 7.74, 7.74) @ 2450 MHz; Calibrated: 29.06.2020
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.12.2019
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

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 = 115.2 V/m; Power Drift = -0.05 dB

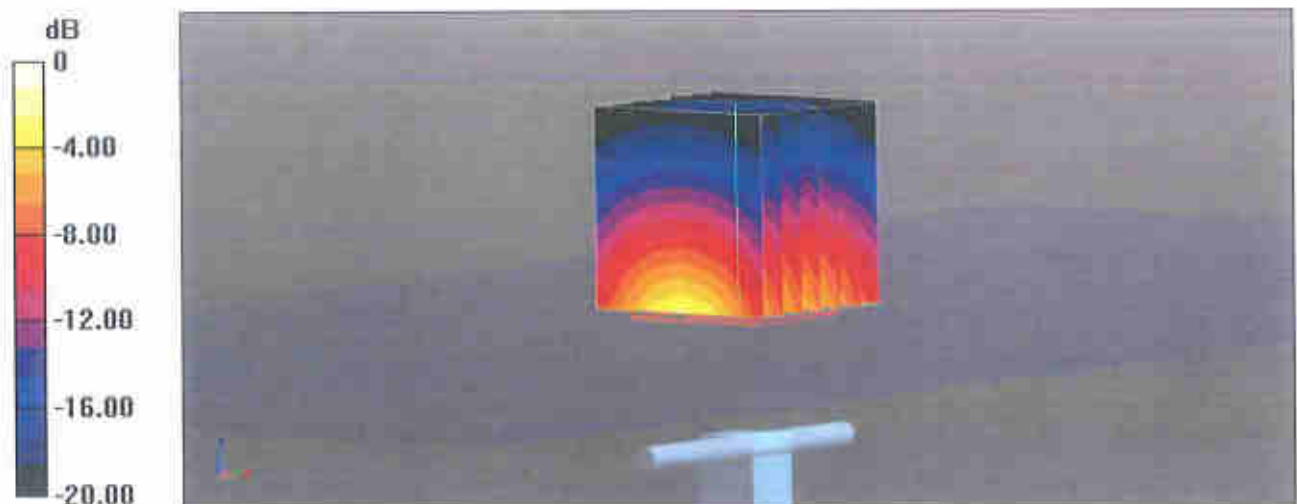
Peak SAR (extrapolated) = 25.4 W/kg

SAR(1 g) = 13.0 W/kg; SAR(10 g) = 6.04 W/kg

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

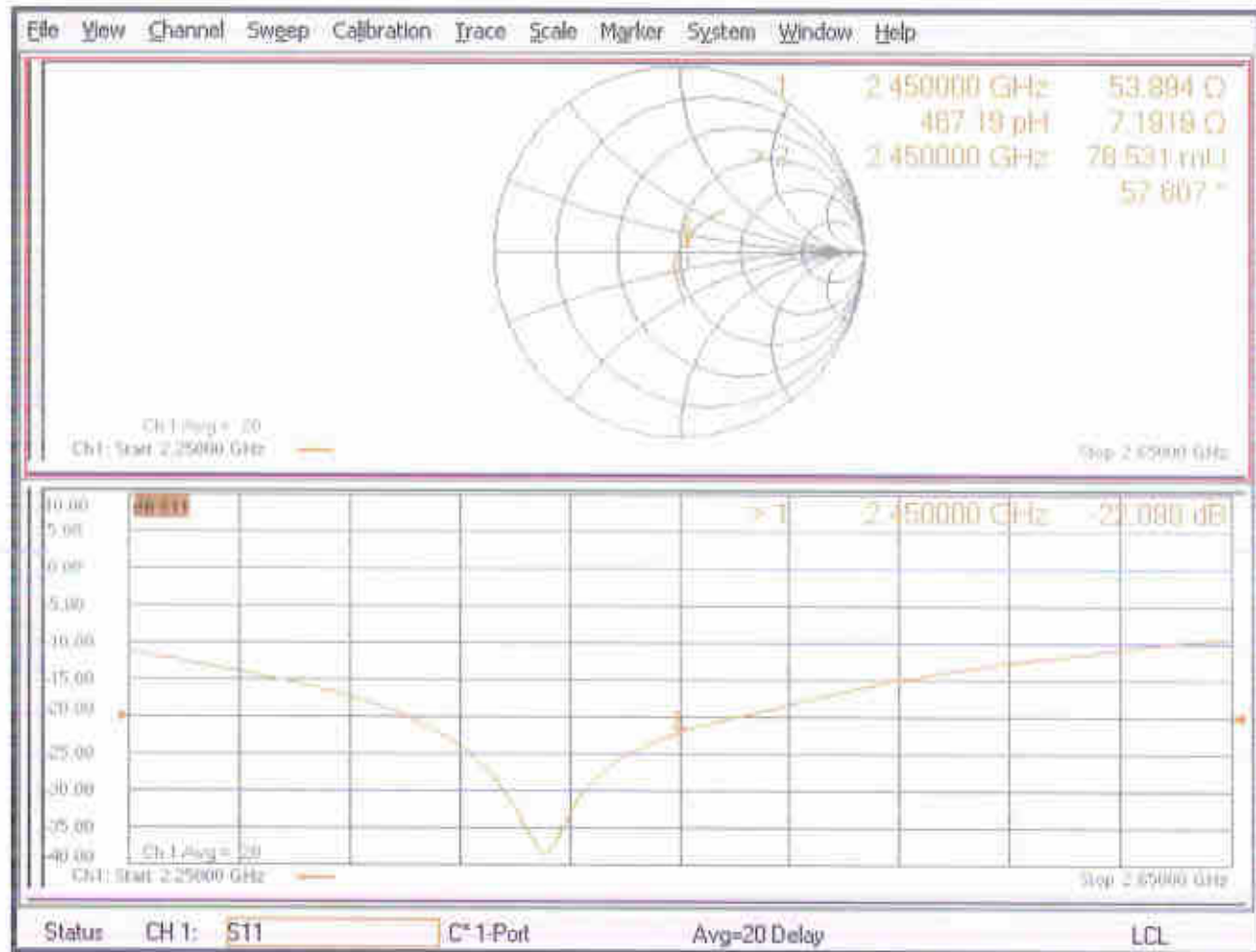
Ratio of SAR at M2 to SAR at M1 = 51%

Maximum value of SAR (measured) = 21.2 W/kg



0 dB = 21.2 W/kg = 13.26 dBW/kg

Impedance Measurement Plot for Head TSL





Add: No.51 Xueyuan 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

Client **Sporton**

Certificate No: **Z18-60537**

CALIBRATION CERTIFICATE

Object **D2600V2 - SN: 1070**

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

Calibration date: **December 7, 2018**

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 NRVD	102196	07-Mar-18 (CTTL, No.J18X01510)	Mar-19
Power sensor NRV-Z5	100596	07-Mar-18 (CTTL, No.J18X01510)	Mar-19
Reference Probe EX3DV4	SN 7514	27-Aug-18(SPEAG,No.EX3-7514_Aug18)	Aug-19
DAE4	SN 1555	20-Aug-18(SPEAG,No.DAE4-1555_Aug18)	Aug-19
Secondary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Signal Generator E4438C	MY49071430	23-Jan-18 (CTTL, No.J18X00560)	Jan-19
Network Analyzer E5071C	MY46110673	24-Jan-18 (CTTL, No.J18X00561)	Jan-19

	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: December 10, 2018

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



In Collaboration with

s p e a g

CALIBRATION LABORATORY

Add: No.51 Xueyuan 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:

- 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%.



Add: No.51 Xueyuan 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

Measurement Conditions

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

DASY Version	DASY52	52.10.2.1495
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	2600 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.0	1.96 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	39.1 ± 6 %	1.93 mho/m ± 6 %
Head TSL temperature change during test	<1.0 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	14.4 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	58.1 mW / g ± 18.8 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	Condition	
SAR measured	250 mW input power	6.50 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	26.1 mW / g ± 18.7 % (k=2)

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.5	2.16 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	51.0 ± 6 %	2.18 mho/m ± 6 %
Body TSL temperature change during test	<1.0 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	13.8 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	54.6 mW / g ± 18.8 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Body TSL	Condition	
SAR measured	250 mW input power	6.18 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	24.6 mW / g ± 18.7 % (k=2)



Add: No.51 Xueyuan 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

Appendix(Additional assessments outside the scope of CNAS L0570)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	48.6Ω- 6.33jΩ
Return Loss	- 23.7dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	44.8Ω- 5.36jΩ
Return Loss	- 22.1dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.015 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
-----------------	-------



Add: No.51 Xueyuan 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

DASY5 Validation Report for Head TSL

Date: 12.06.2018

Test Laboratory: CTTL, Beijing, China

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN: 1070

Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2600$ MHz; $\sigma = 1.926$ S/m; $\epsilon_r = 39.1$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7514; ConvF(6.92, 6.92, 6.92) @ 2600 MHz; Calibrated: 8/27/2018
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1555; Calibrated: 8/20/2018
- Phantom: MFP_V5.1C ; Type: QD 000 P51CA; Serial: 1062
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

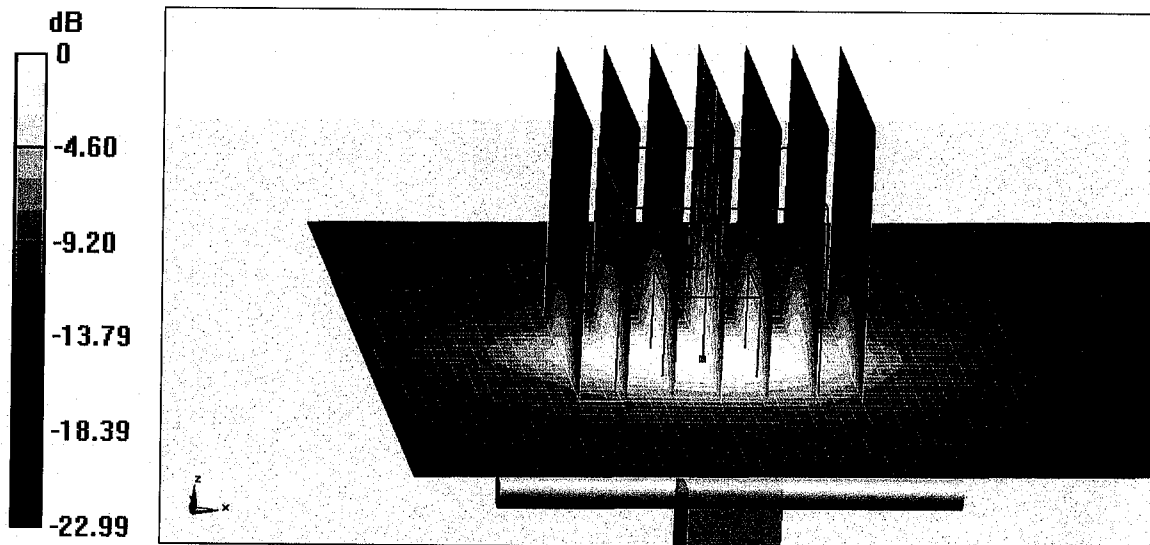
Dipole Calibration/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 99.07 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 31.1 W/kg

SAR(1 g) = 14.4 W/kg; SAR(10 g) = 6.5 W/kg

Maximum value of SAR (measured) = 24.7 W/kg

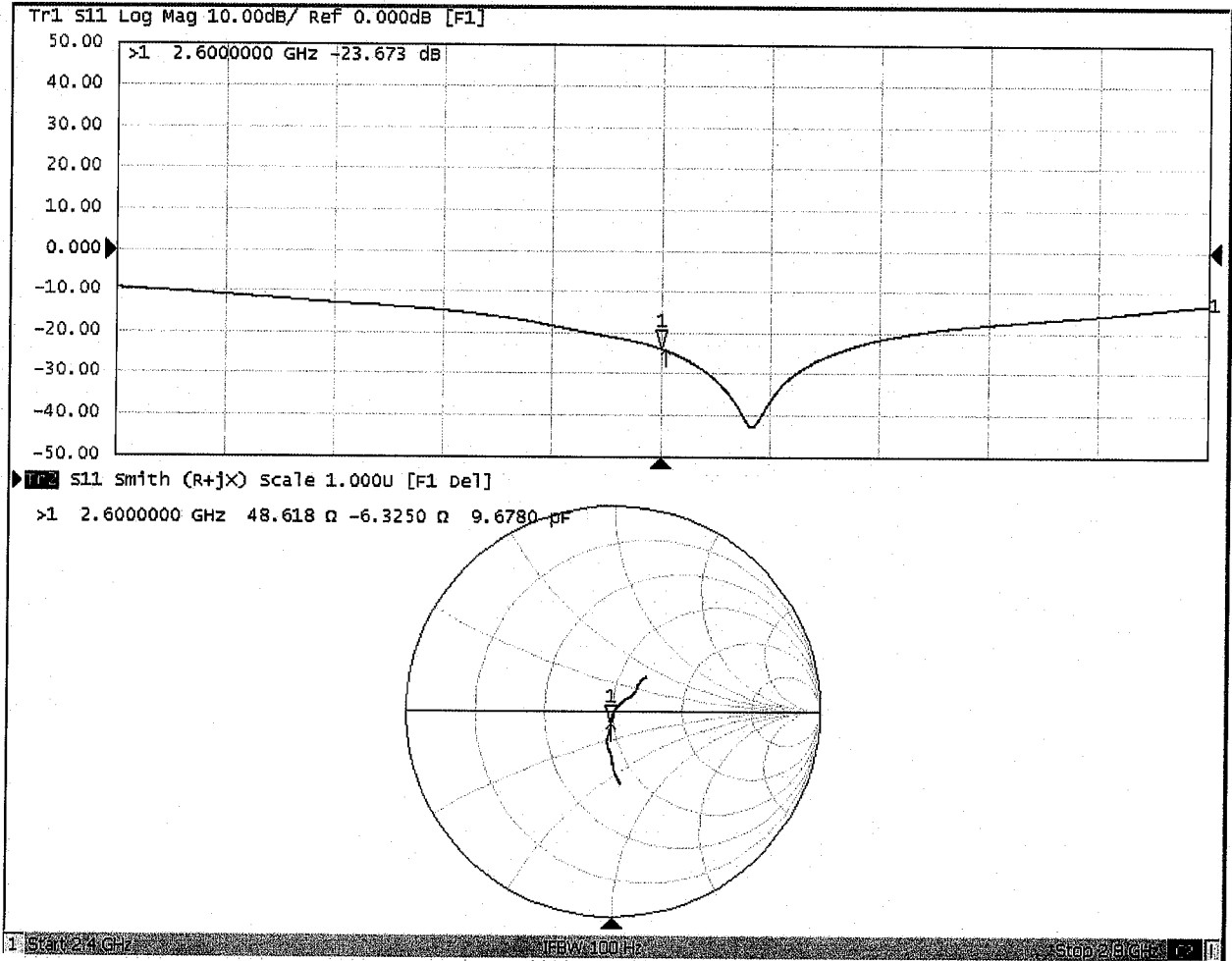


0 dB = 24.7 W/kg = 13.93 dBW/kg



Add: No.51 Xueyuan 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

Impedance Measurement Plot for Head TSL





Add: No.51 Xueyuan 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

DASY5 Validation Report for Body TSL

Date: 12.06.2018

Test Laboratory: CTTL, Beijing, China

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN: 1070

Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2600$ MHz; $\sigma = 2.181$ S/m; $\epsilon_r = 51.03$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7514; ConvF(7.06, 7.06, 7.06) @ 2600 MHz; Calibrated: 8/27/2018
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1555; Calibrated: 8/20/2018
- Phantom: MFP_V5.1C ; Type: QD 000 P51CA; Serial: 1062
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

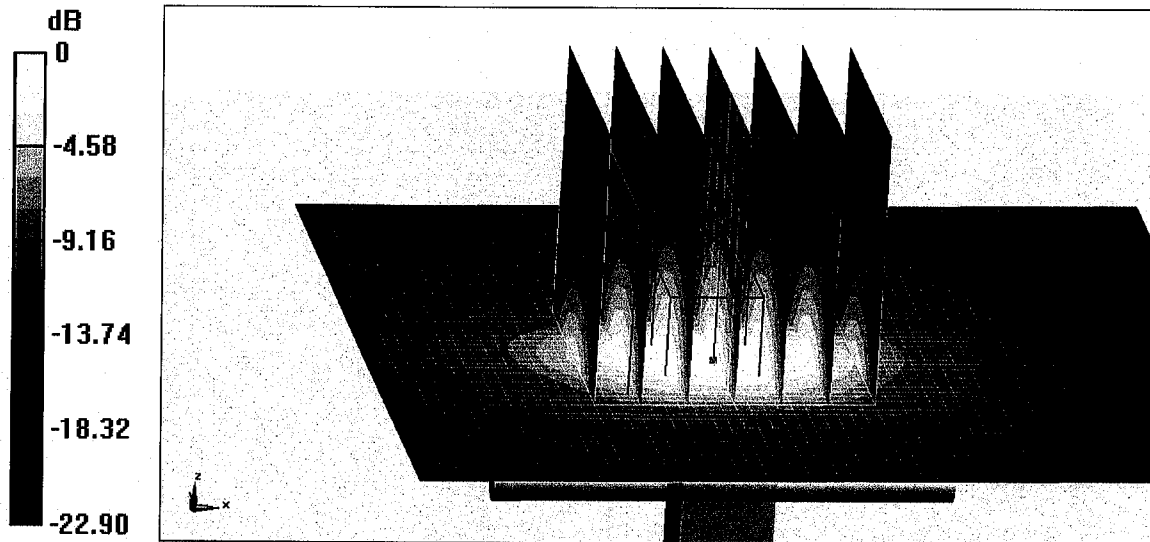
Dipole Calibration/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 87.90 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 29.5 W/kg

SAR(1 g) = 13.8 W/kg; SAR(10 g) = 6.18 W/kg

Maximum value of SAR (measured) = 23.6 W/kg

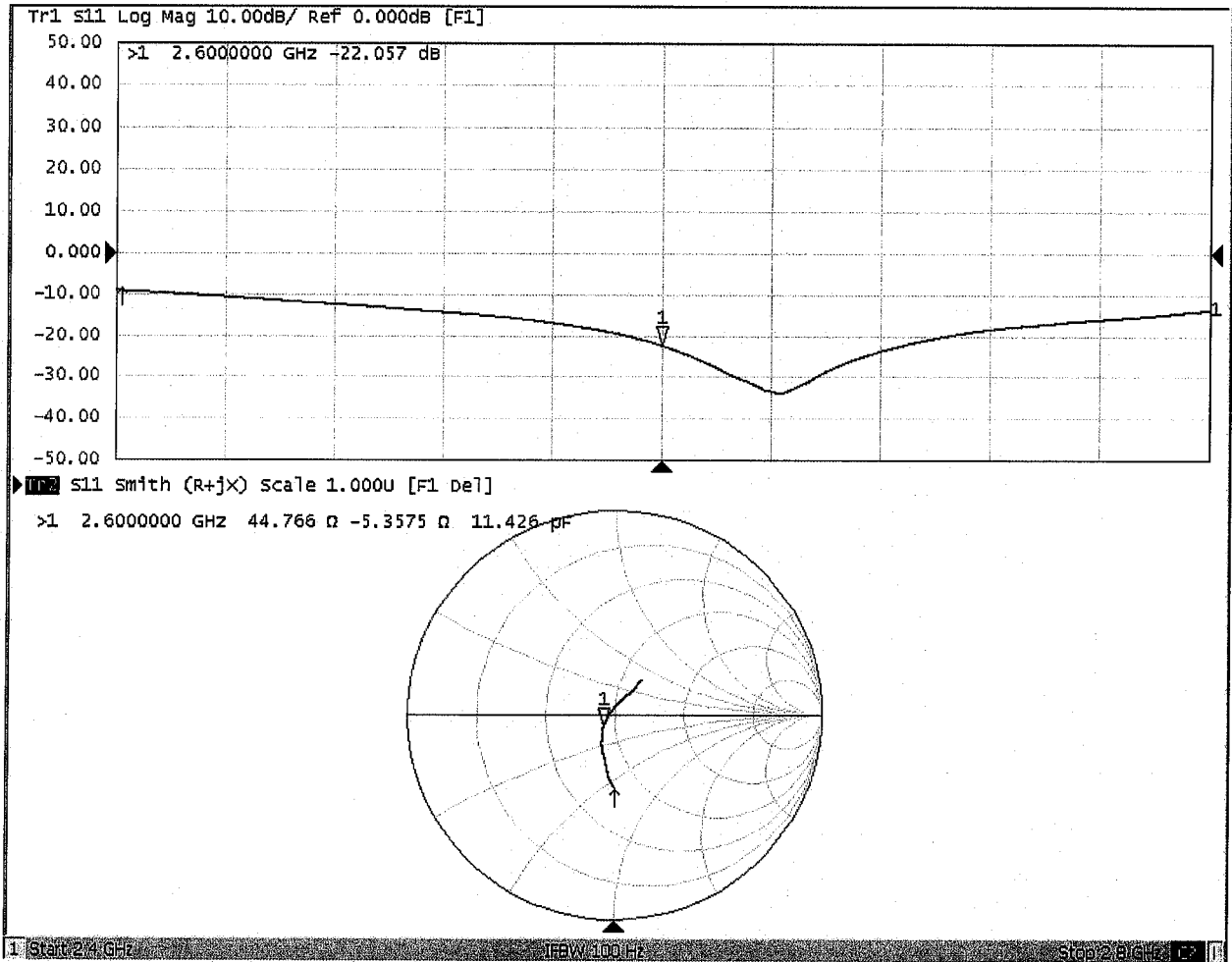


0 dB = 23.6 W/kg = 13.73 dBW/kg



Add: No.51 Xueyuan 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

Impedance Measurement Plot for Body TSL





D2600V2, Serial No. 1070 Extended Dipole Calibrations

Referring to KDB 865664 D01 v01r02, 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.

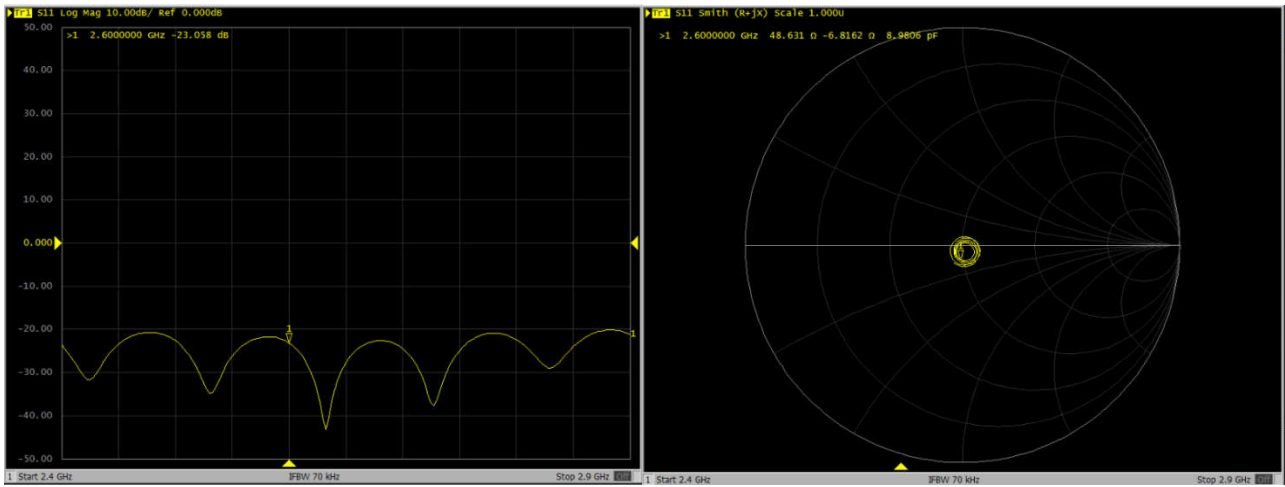
D2600V2 – serial no. 1070												
	2600 Head						2600 Body					
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2018.12.7	-23.7		48.6		-6.33		-22.1		44.8		-5.36	
2019.11.25	-23.1	2.5	48.6	0	-6.82	-0.49	-22.0	0.5	45.3	0.5	-4.65	0.71
2020.11.25	-23.5	0.8	48.8	0.2	-5.93	0.4	-22.0	0.5	44.5	-0.3	-5.04	0.32

<Justification of the extended calibration>

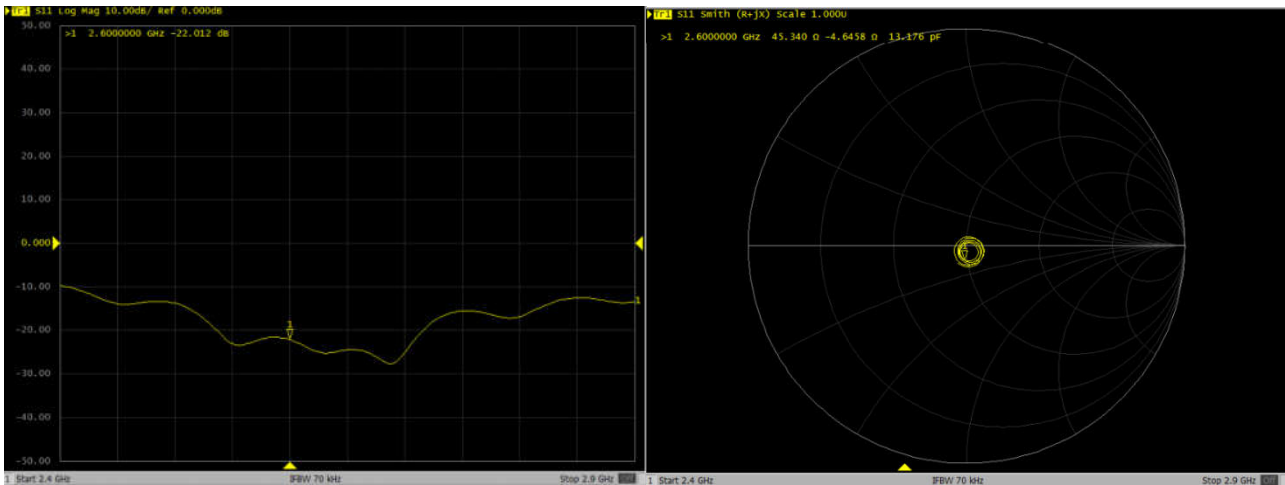
The return loss is $< -20\text{dB}$, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

Dipole Verification Data> D2600V2, serial no. 1070

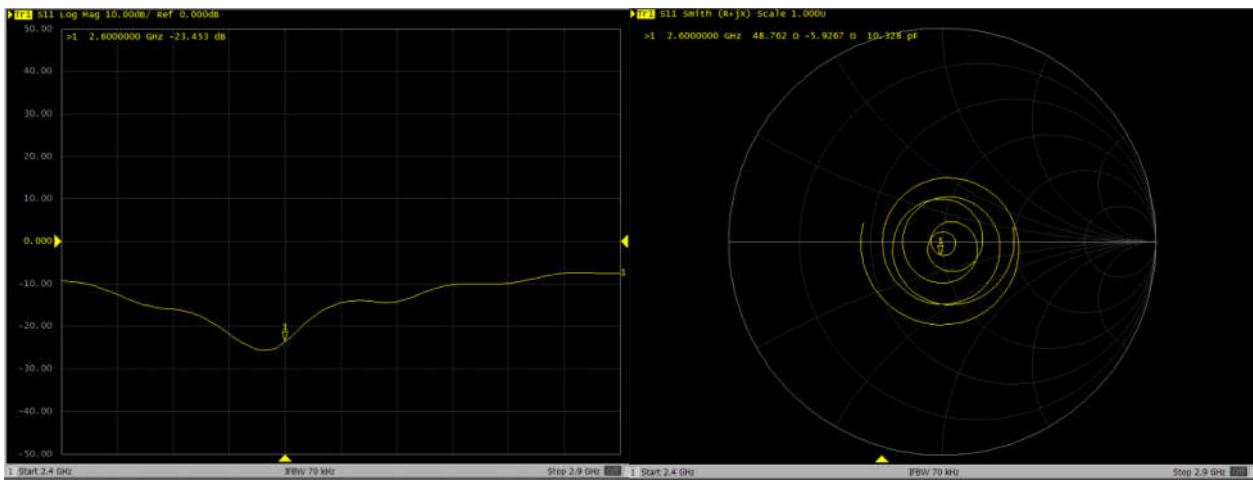
2600MHz – Head---2019.11.25



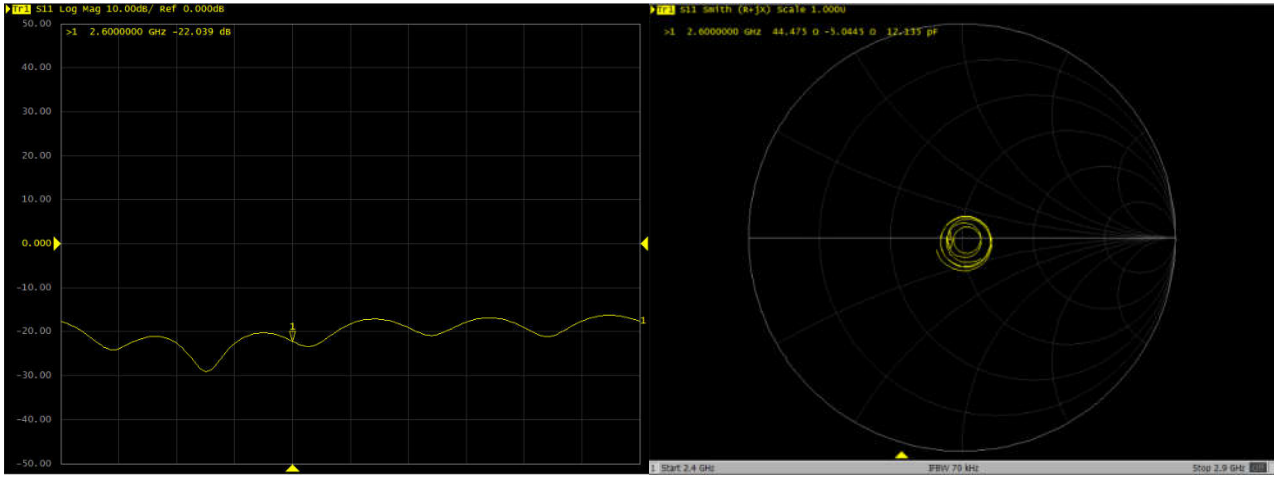
2600MHz – Body---2019.11.25



2600MHz – Head---2020.11.25



2600MHz – Body----2020.11.25





In Collaboration with
s p e a g
 CALIBRATION LABORATORY



中国认可
 国际互认
 校准
 CALIBRATION
 CNAS L0570

Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
 Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504
 E-mail: cttl@chinattl.com http://www.chinattl.cn

Client **Sporton**

Certificate No: **Z18-60259**

CALIBRATION CERTIFICATE

Object **D5GHzV2 - SN: 1167**

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

Calibration date: **August 03, 2018**

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	102083	01-Nov-17 (CTTL, No.J17X08756)	Oct-18
Power sensor NRP-Z91	100542	01-Nov-17 (CTTL, No.J17X08756)	Oct-18
ReferenceProbe EX3DV4	SN 7464	12-Sep-17(SPEAG,No.EX3-7464_Sep17)	Sep-18
DAE4	SN 1524	13-Sep-17(SPEAG,No.DAE4-1524_Sep17)	Sep-18
Secondary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Signal Generator E4438C	MY49071430	23-Jan-18 (CTTL, No.J18X00560)	Jan-19
NetworkAnalyzerE5071C	MY46110673	24-Jan-18 (CTTL, No.J18X00561)	Jan-19

	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: August 6, 2018

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



Glossary:

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

Calibration is Performed According to the Following Standards:

- 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%.



Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com http://www.chinattl.cn

Measurement Conditions

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

DASY Version	DASY52	52.10.1.1476
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	35.9 ± 6 %	4.82 mho/m ± 6 %
Head TSL temperature change during test	<1.0 °C	----	----

SAR result with Head TSL at 5250 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.69 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	77.0 mW / g ± 24.4 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	Condition	
SAR measured	100 mW input power	2.20 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	22.0 mW / g ± 24.2 % (k=2)



Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
 Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504
 E-mail: cttl@chinattl.com http://www.chinattl.cn

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	35.1 ± 6 %	5.18 mho/m ± 6 %
Head TSL temperature change during test	<1.0 °C	----	----

SAR result with Head TSL at 5600 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.09 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	80.8 mW / g ± 24.4 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	Condition	
SAR measured	100 mW input power	2.32 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	23.2 mW / g ± 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	34.9 ± 6 %	5.37 mho/m ± 6 %
Head TSL temperature change during test	<1.0 °C	----	----

SAR result with Head TSL at 5750 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.70 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	76.9 mW / g ± 24.4 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	Condition	
SAR measured	100 mW input power	2.17 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	21.6 mW / g ± 24.2 % (k=2)



Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com http://www.chinattl.cn

Body TSL parameters at 5250 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.9	5.36 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	48.4 ± 6 %	5.32 mho/m ± 6 %
Body TSL temperature change during test	<1.0 °C	----	----

SAR result with Body TSL at 5250 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.46 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	74.4 mW / g ± 24.4 % (k=2)
SAR averaged over 10 cm³ (10 g) of Body TSL	Condition	
SAR measured	100 mW input power	2.10 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	20.9 mW / g ± 24.2 % (k=2)

Body TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.5	5.77 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	47.7 ± 6 %	5.79 mho/m ± 6 %
Body TSL temperature change during test	<1.0 °C	----	----

SAR result with Body TSL at 5600 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.73 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	77.1 mW / g ± 24.4 % (k=2)
SAR averaged over 10 cm³ (10 g) of Body TSL	Condition	
SAR measured	100 mW input power	2.16 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	21.5 mW / g ± 24.2 % (k=2)



Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
 Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504
 E-mail: cttl@chinattl.com http://www.chinattl.cn

Body TSL parameters at 5750 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.3	5.94 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	48.5 ± 6 %	5.93 mho/m ± 6 %
Body TSL temperature change during test	<1.0 °C	----	----

SAR result with Body TSL at 5750 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.43 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	74.3 mW /g ± 24.4 % (k=2)
SAR averaged over 10 cm³ (10 g) of Body TSL	Condition	
SAR measured	100 mW input power	2.08 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	20.8 mW /g ± 24.2 % (k=2)



Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com http://www.chinattl.cn

Appendix (Additional assessments outside the scope of CNAS L0570)

Antenna Parameters with Head TSL at 5250 MHz

Impedance, transformed to feed point	50.3 Ω - 9.42j Ω
Return Loss	- 20.6dB

Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	58.1 Ω - 7.15j Ω
Return Loss	- 20.0dB

Antenna Parameters with Head TSL at 5750 MHz

Impedance, transformed to feed point	53.5 Ω - 7.66j Ω
Return Loss	- 21.8dB

Antenna Parameters with Body TSL at 5250 MHz

Impedance, transformed to feed point	49.5 Ω - 7.40j Ω
Return Loss	- 22.6dB

Antenna Parameters with Body TSL at 5600 MHz

Impedance, transformed to feed point	58.0 Ω - 6.37j Ω
Return Loss	- 20.5dB

Antenna Parameters with Body TSL at 5750 MHz

Impedance, transformed to feed point	54.5 Ω - 7.07j Ω
Return Loss	- 21.9dB



Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
 Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504
 E-mail: cttl@chinattl.com http://www.chinattl.cn

General Antenna Parameters and Design

Electrical Delay (one direction)	1.065 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
-----------------	-------



In Collaboration with

s p e a g
CALIBRATION LABORATORY

Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com http://www.chinattl.cn

DASY5 Validation Report for Head TSL

Date: 07.27.2018

Test Laboratory: CTTL, Beijing, China

DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1167

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

Medium parameters used: $f = 5250$ MHz; $\sigma = 4.822$ S/m; $\epsilon_r = 35.92$; $\rho = 1000$ kg/m³,
Medium parameters used: $f = 5600$ MHz; $\sigma = 5.184$ S/m; $\epsilon_r = 35.14$; $\rho = 1000$ kg/m³,
Medium parameters used: $f = 5750$ MHz; $\sigma = 5.365$ S/m; $\epsilon_r = 34.88$; $\rho = 1000$ kg/m³,

Phantom section: Center Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7464; ConvF(5.68, 5.68, 5.68) @ 5250 MHz; Calibrated: 9/12/2017, ConvF(4.98, 4.98, 4.98) @ 5600 MHz; Calibrated: 9/12/2017, ConvF(5.04, 5.04, 5.04) @ 5750 MHz; Calibrated: 9/12/2017,
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1524; Calibrated: 9/13/2017
- Phantom: MFP_V5.1C ; Type: QD 000 P51CA; Serial: 1062
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

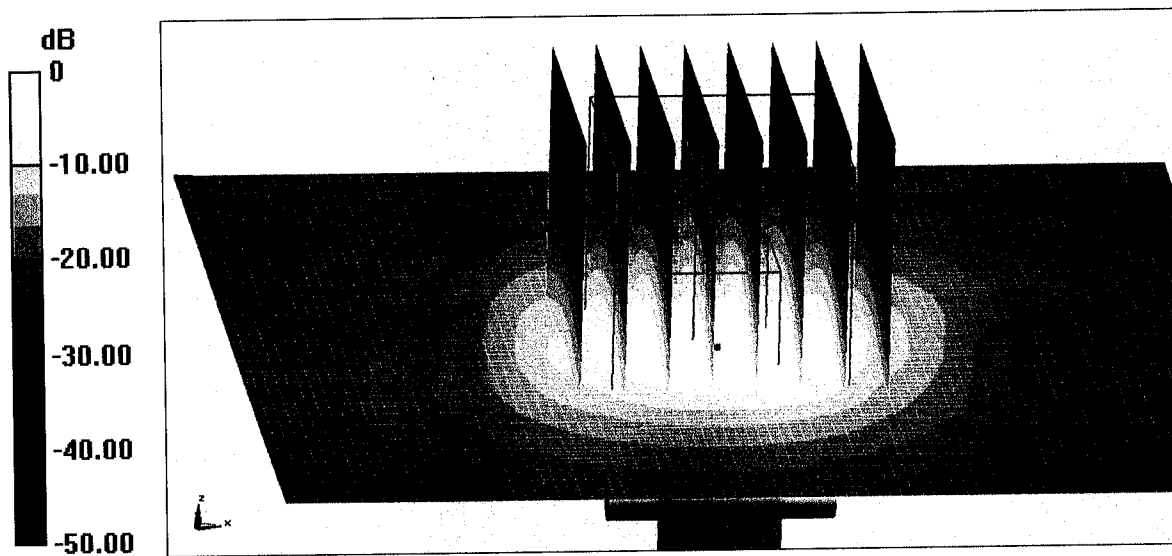
Dipole Calibration /Pin=100mW, d=10mm, f=5250 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 65.09 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 32.4 W/kg
SAR(1 g) = 7.69 W/kg; SAR(10 g) = 2.2 W/kg
Maximum value of SAR (measured) = 18.0 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 = 63.53 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 36.2 W/kg
SAR(1 g) = 8.09 W/kg; SAR(10 g) = 2.32 W/kg
Maximum value of SAR (measured) = 19.7 W/kg

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 = 63.79 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 36.2 W/kg
SAR(1 g) = 7.7 W/kg; SAR(10 g) = 2.17 W/kg
Maximum value of SAR (measured) = 19.0 W/kg



Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com http://www.chinattl.cn



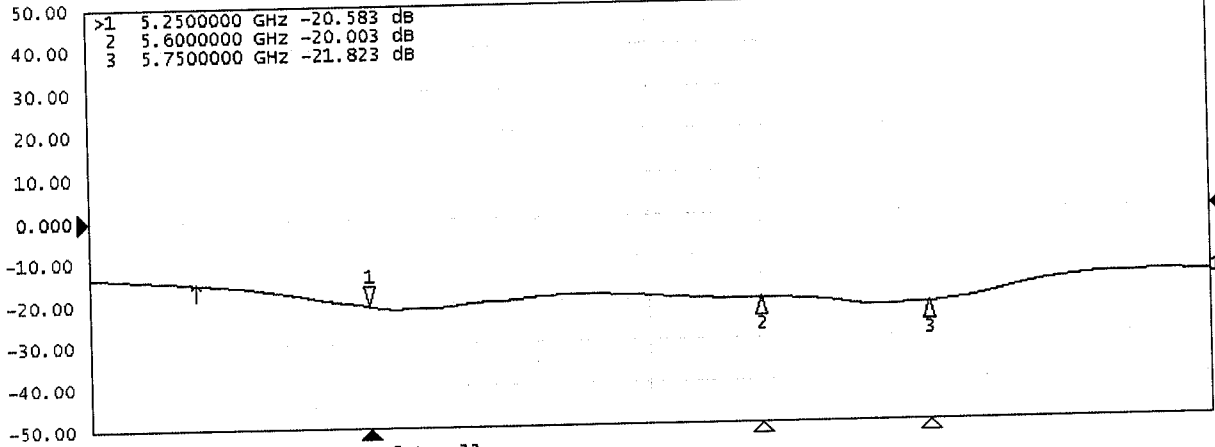
0 dB = 19.0 W/kg = 12.79 dBW/kg



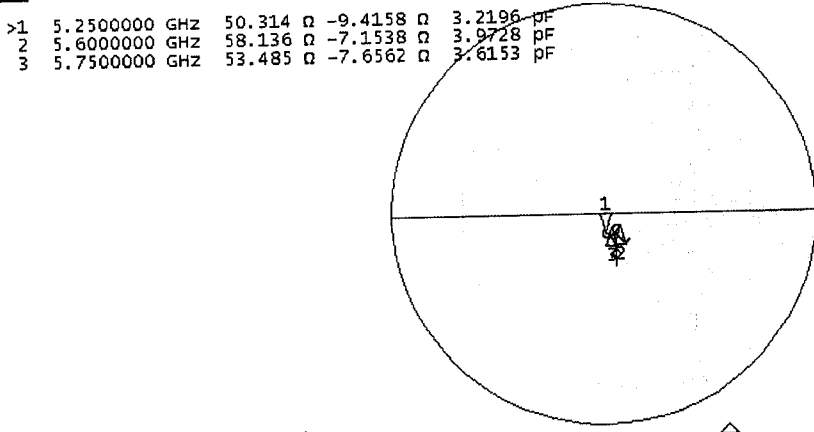
Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com http://www.chinattl.cn

Impedance Measurement Plot for Head TSL

Tr1 S11 Log Mag 10.00dB/ Ref 0.000dB [F1]



Tr2 S11 Smith (R+jX) scale 1.000U [F1 Del]





Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com http://www.chinattl.cn

DASY5 Validation Report for Body TSL

Date: 08.02.2018

Test Laboratory: CTTL, Beijing, China

DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1167

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

Medium parameters used: $f = 5250$ MHz; $\sigma = 5.316$ S/m; $\epsilon_r = 48.42$; $\rho = 1000$ kg/m³,
Medium parameters used: $f = 5600$ MHz; $\sigma = 5.789$ S/m; $\epsilon_r = 47.7$; $\rho = 1000$ kg/m³,
Medium parameters used: $f = 5750$ MHz; $\sigma = 5.926$ S/m; $\epsilon_r = 48.45$; $\rho = 1000$ kg/m³,

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7464; ConvF(5.29, 5.29, 5.29) @ 5250 MHz; Calibrated: 9/12/2017, ConvF(4.5, 4.5, 4.5) @ 5600 MHz; Calibrated: 9/12/2017, ConvF(4.59, 4.59, 4.59) @ 5750 MHz; Calibrated: 9/12/2017,
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1524; Calibrated: 9/13/2017
- Phantom: MFP_V5.1C ; Type: QD 000 P51CA; Serial: 1062
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7439)

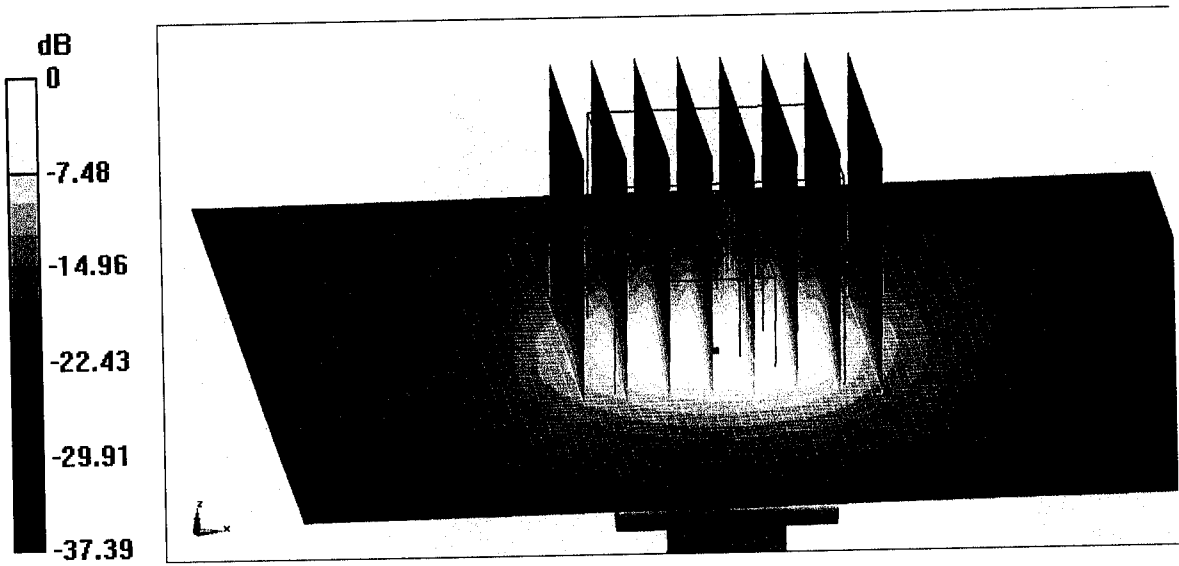
Dipole Calibration /Pin=100mW, d=10mm, f=5250 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 64.14 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 31.9 W/kg
SAR(1 g) = 7.46 W/kg; SAR(10 g) = 2.1 W/kg
Maximum value of SAR (measured) = 17.6 W/kg

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 = 62.32 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 36.3 W/kg
SAR(1 g) = 7.73 W/kg; SAR(10 g) = 2.16 W/kg
Maximum value of SAR (measured) = 19.1 W/kg

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 = 63.99 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 35.2 W/kg
SAR(1 g) = 7.43 W/kg; SAR(10 g) = 2.08 W/kg
Maximum value of SAR (measured) = 18.0 W/kg



Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com http://www.chinattl.cn



0 dB = 18.0 W/kg = 12.55 dBW/kg

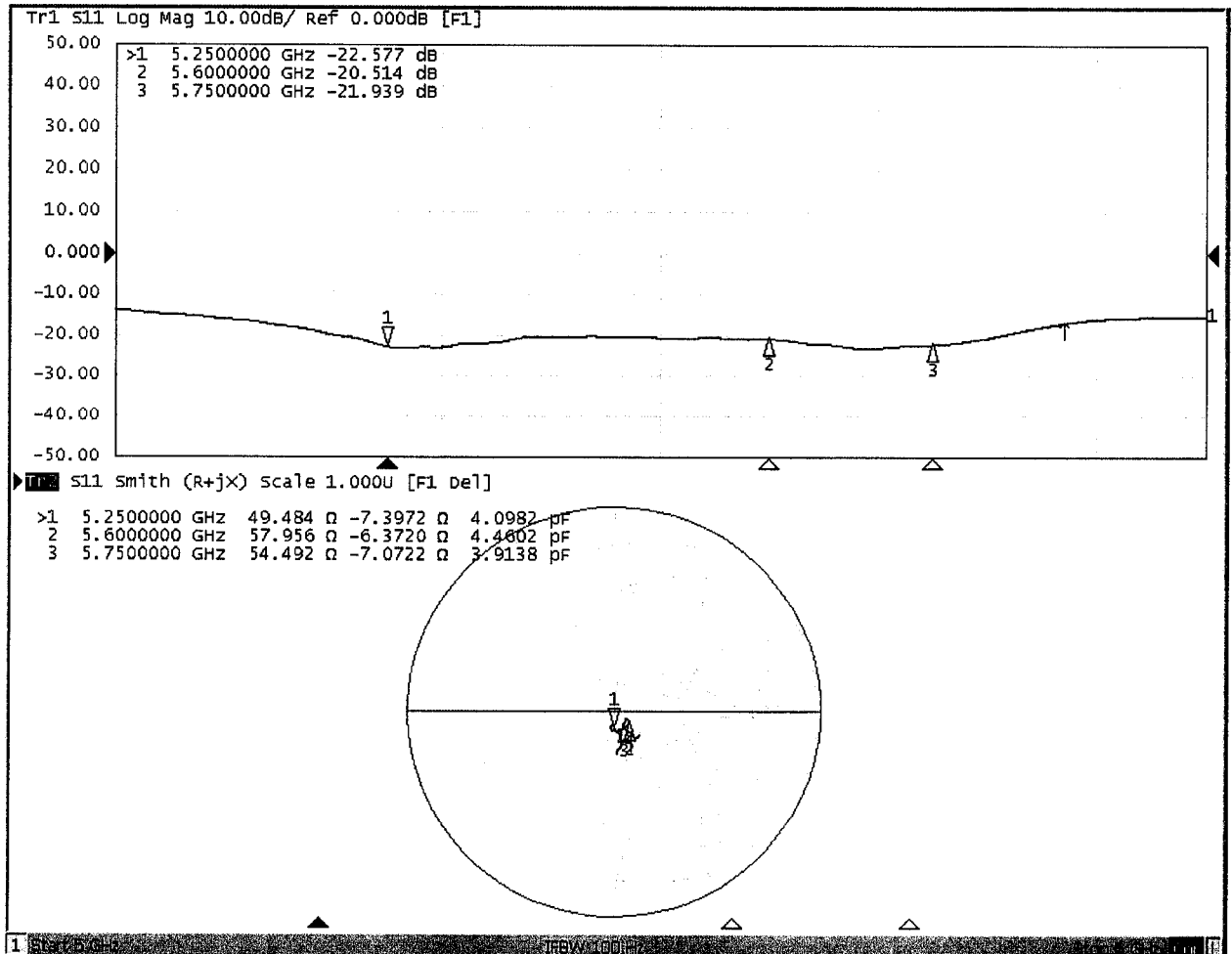


In Collaboration with

s p e a g
CALIBRATION LABORATORY

Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com http://www.chinattl.cn

Impedance Measurement Plot for Body TSL





D5GHzV3, Serial No. 1167 Extended Dipole Calibrations

Referring to KDB 865664 D01 v01r02, 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.

5250MHz

D5GHzV3 – serial no. 1167												
	5250 Head						5250 Body					
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2018.08.03	-20.6		50.3		-9.42		-22.6		49.5		-7.40	
2019.10.30	-20.3	1.5	50.9	0.6	-9.72	-0.3	-22.4	0.9	48.2	-1.3	-7.25	0.15
2020.10.30	-20.7	-0.05	50.19	-0.11	-9.09	0.33	-23.1	-2.2	50.2	0.7	-7.03	0.37

5600MHz

D5GHzV3 – serial no. 1167												
	5600 Head						5600 Body					
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2018.08.03	-20.0		58.1		-7.15		-20.5		58.0		-6.37	
2019.10.30	-20.1	-0.5	57.4	-0.7	-7.63	-0.48	-20.4	0.5	57.7	-0.3	-6.87	-0.5
2020.10.30	-19.99	0.05	58.2	0.1	-7.13	0.02	-20.1	1.95	58.9	0.9	-5.96	0.41

5750MHz

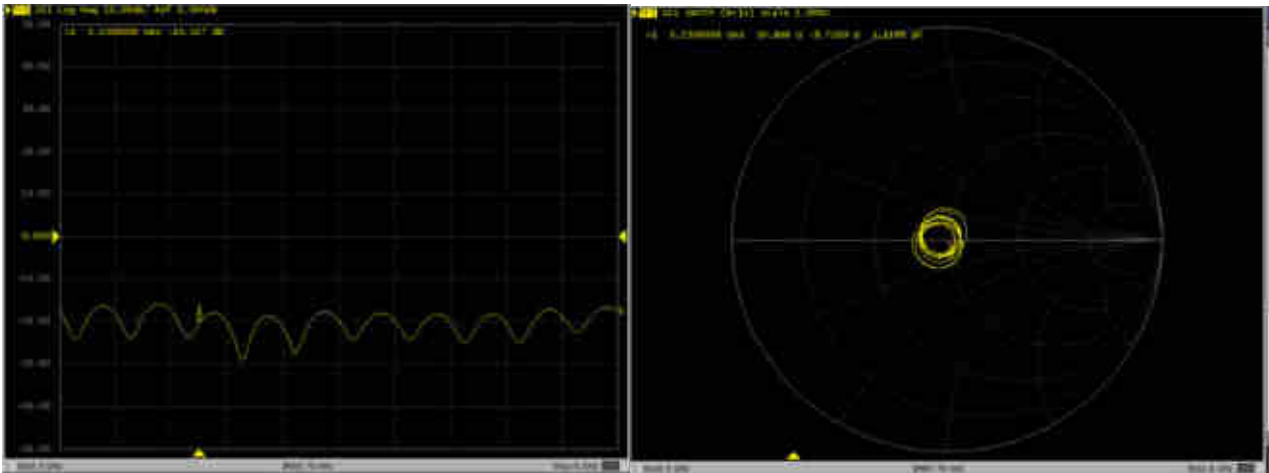
D5GHzV3 – serial no. 1167												
	5750 Head						5750 Body					
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2018.08.03	-21.8		53.5		-7.66		-21.9		54.5		-7.07	
2019.10.30	-21.1	3.2	53.0	-0.5	-8.58	-0.92	-21.6	1.4	55.2	0.7	-7.04	0.03
2020.10.30	-21.9	0.05	53.2	-0.3	-7.35	0.31	-21.6	1.4	54.2	-0.3	-7.60	-0.53

<Justification of the extended calibration>

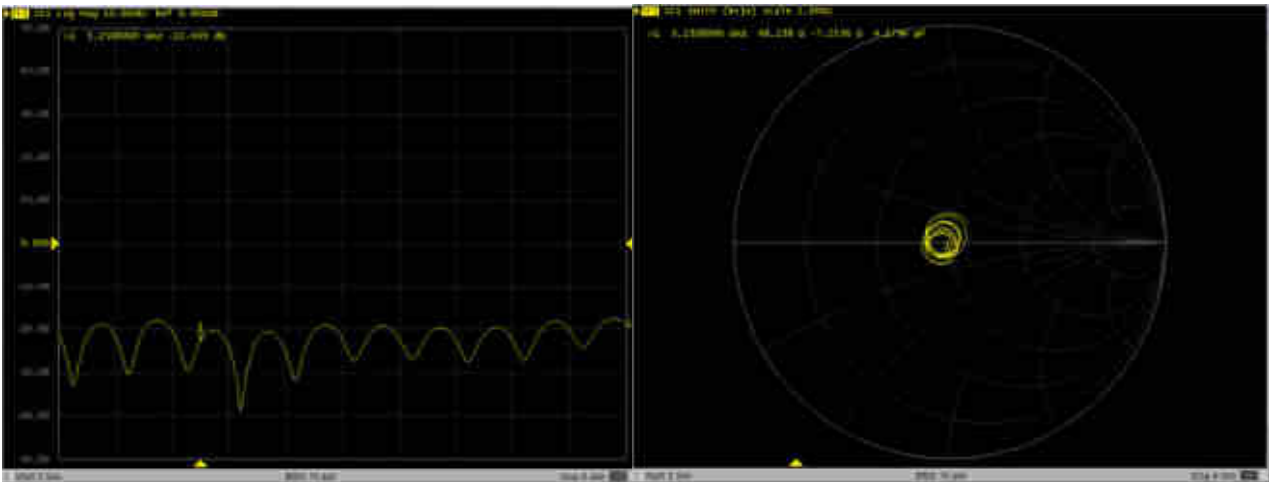
The return loss is $< -20\text{dB}$, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

Dipole Verification Data> D5GHzV3, serial no. 1167

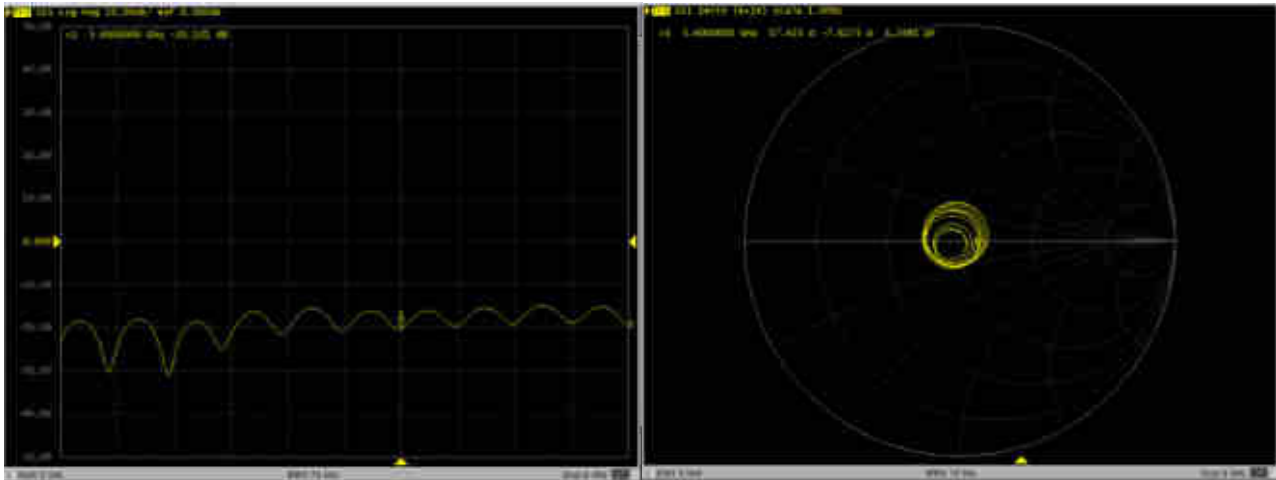
5250MHz – Head----2019.10.30



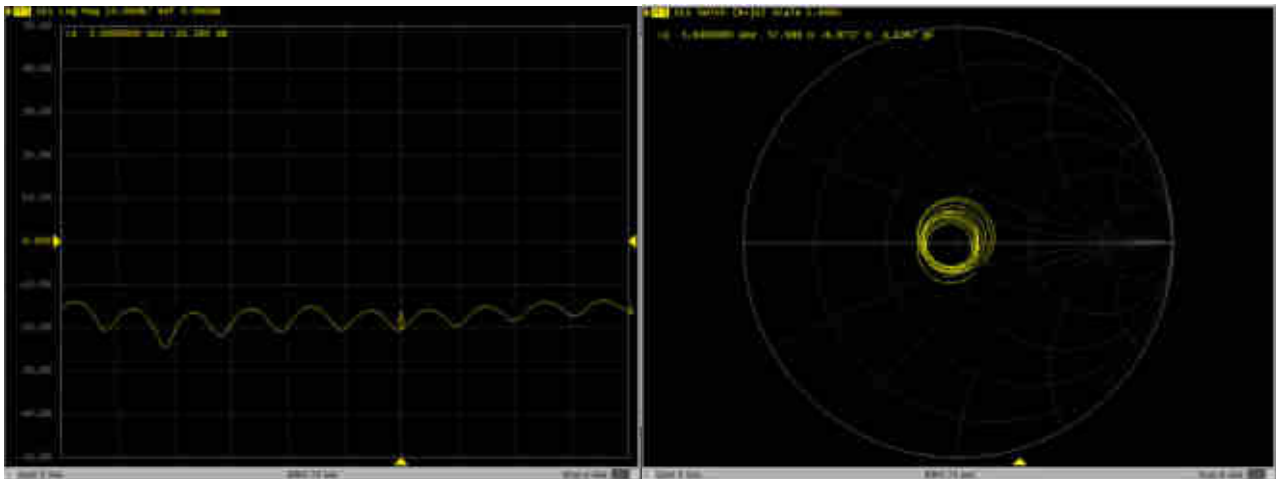
5250MHz – Body----2019.10.30



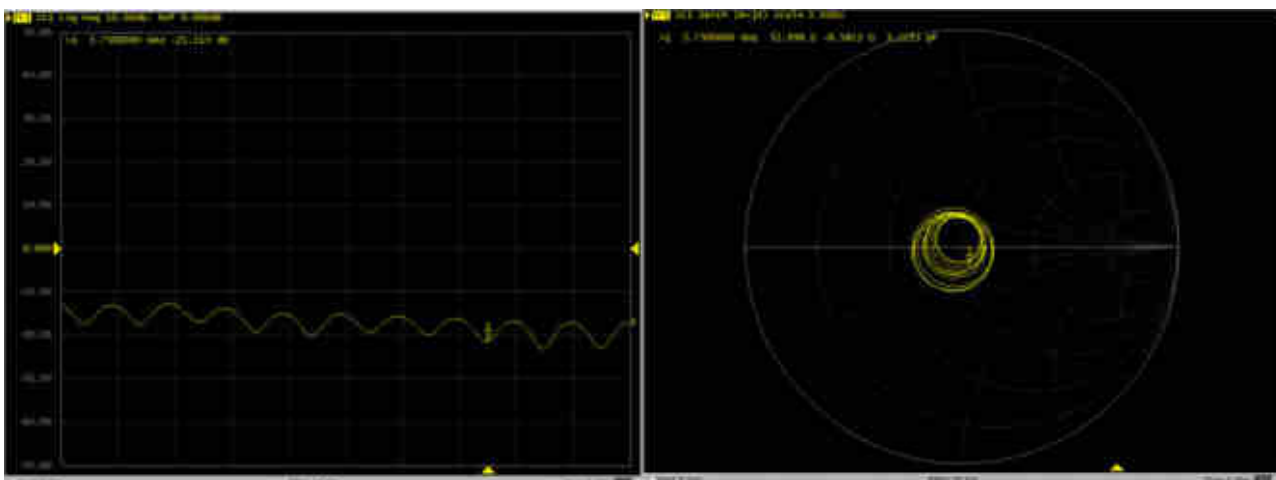
5600MHz – Head----2019.10.30



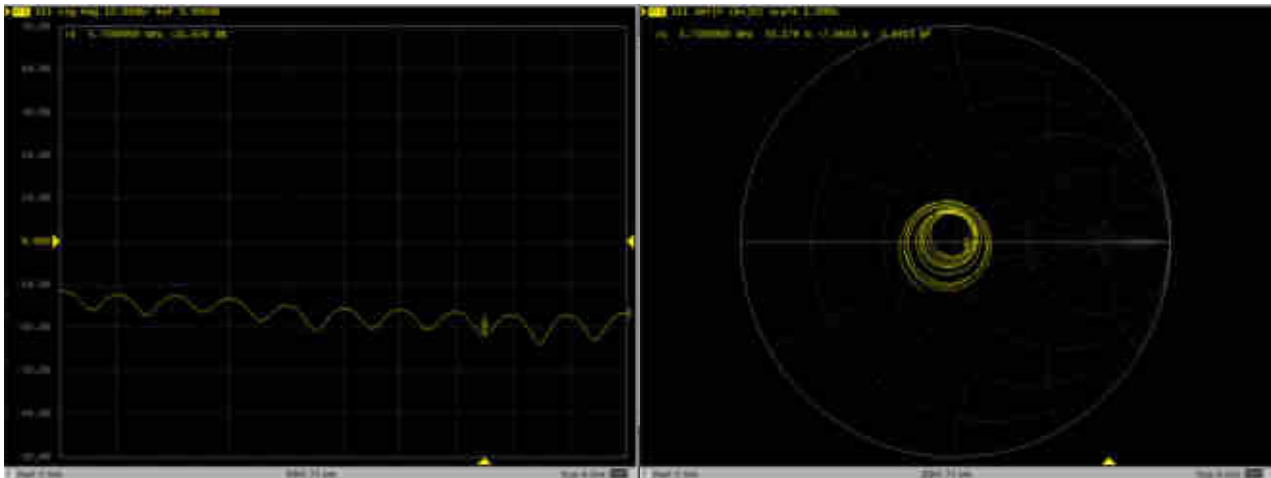
5600MHz – Body----2019.10.30



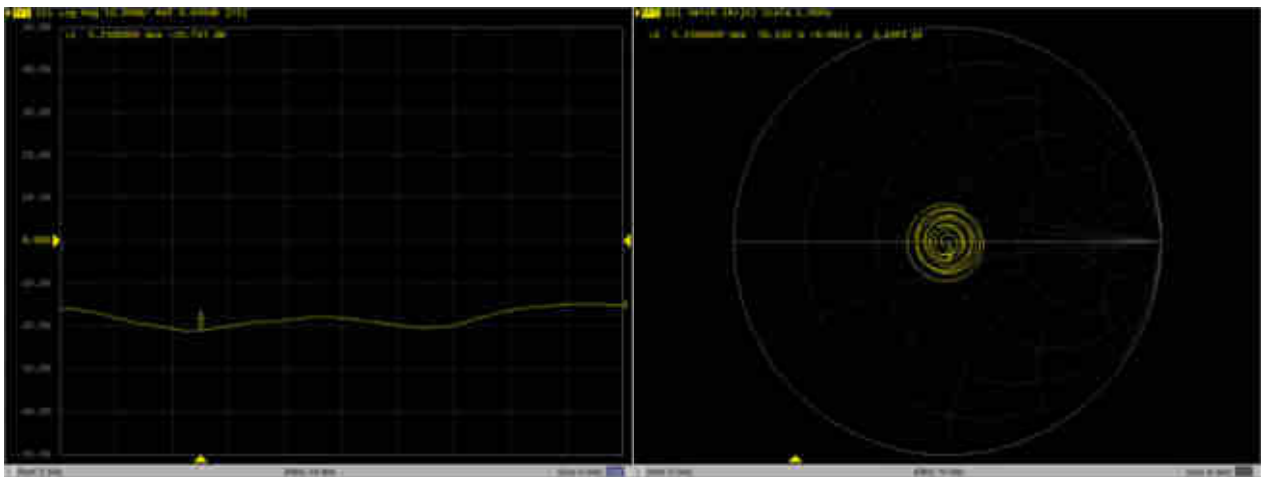
5750MHz – Head----2019.10.30



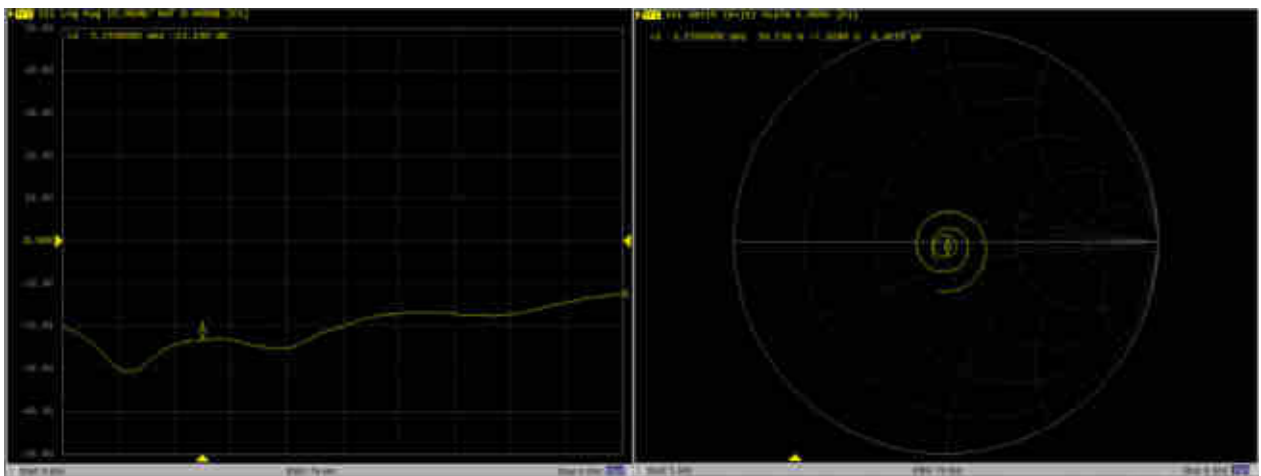
5750MHz – Body----2019.10.30



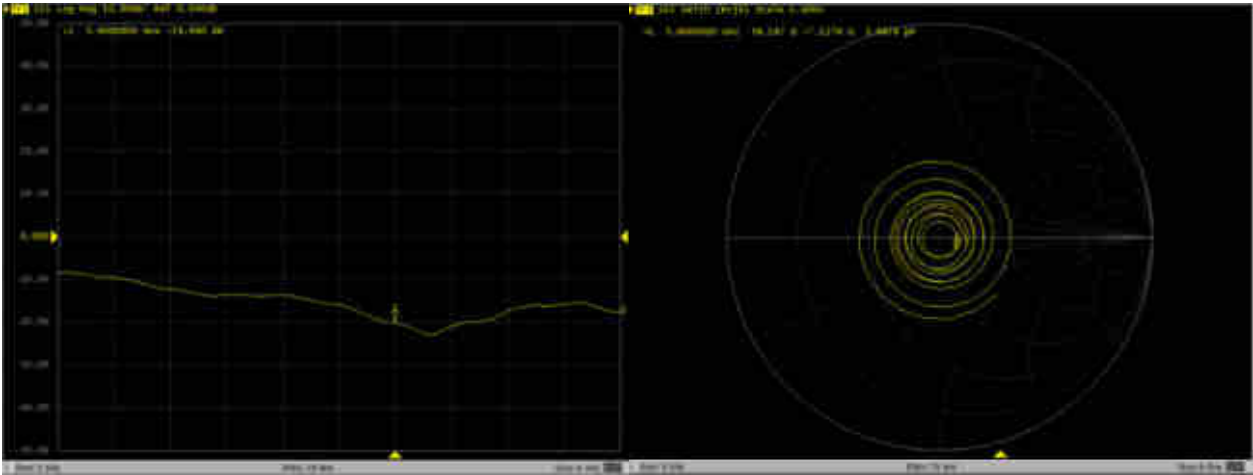
5250MHz – Head----2020.10.30



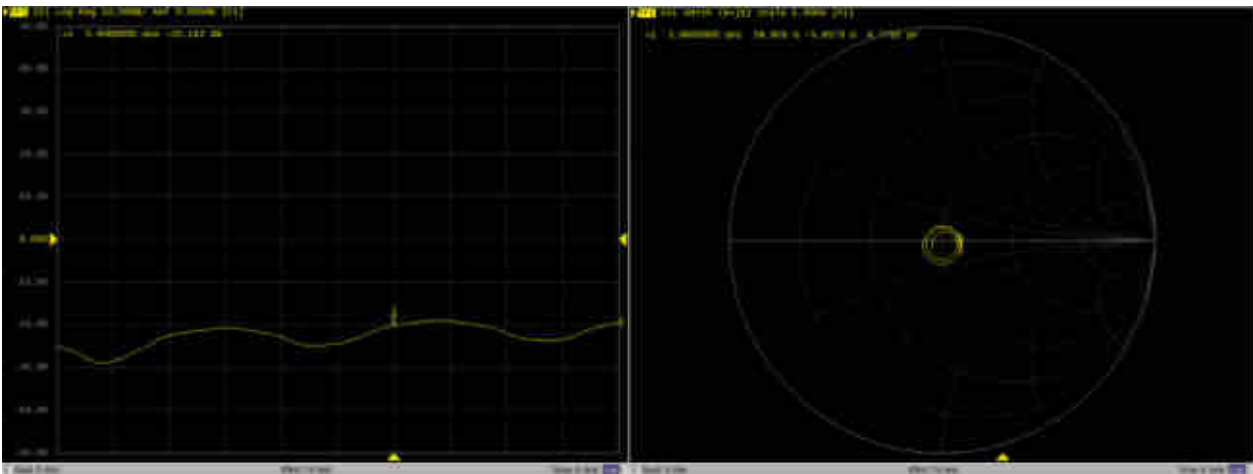
5250MHz – Body----2020.10.30



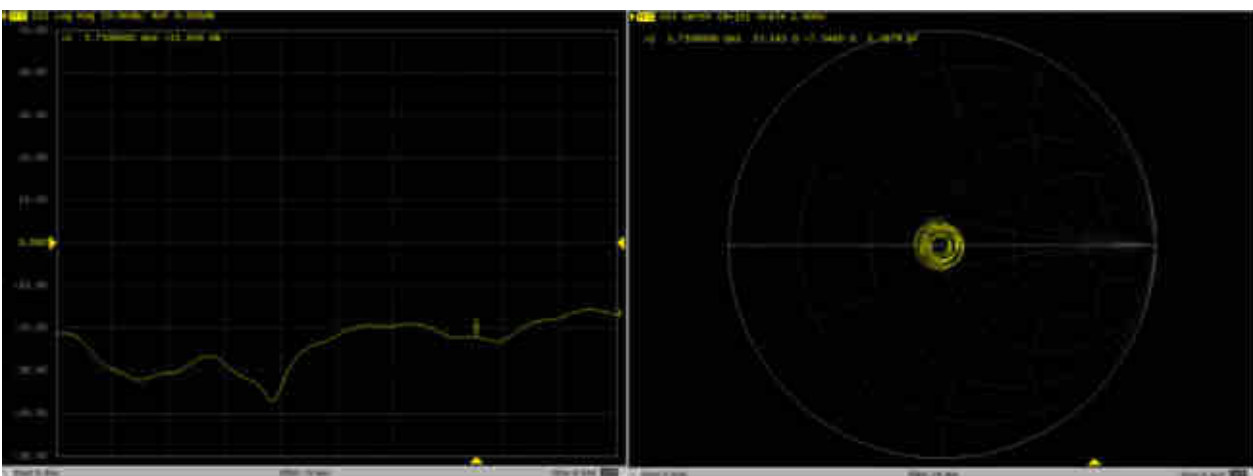
5600MHz – Head----2020.10.30



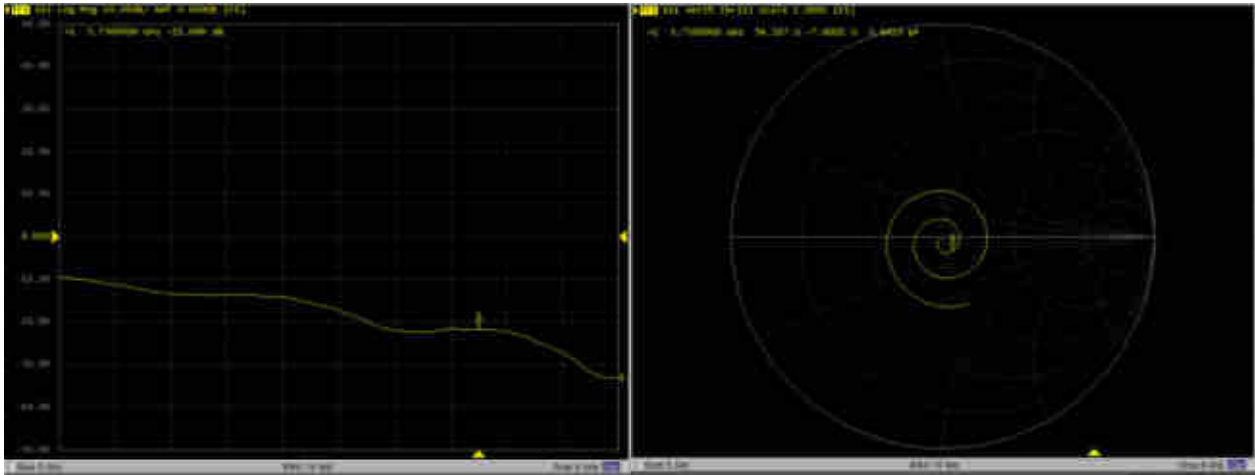
5600MHz – Body----2020.10.30



5750MHz – Head----2020.10.30



5750MHz – Body----2020.10.30





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

Accreditation No.: **SCS 0108**

Client **Auden**

Certificate No: **DAE3-528_Mar20**

CALIBRATION CERTIFICATE

Object **DAE3 - SD 000 D03 AA - SN: 528**

Calibration procedure(s) **QA CAL-06.v30
Calibration procedure for the data acquisition electronics (DAE)**

Calibration date: **March 16, 2020**

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

All calibrations have been conducted in the closed laboratory facility: environment temperature $(22 \pm 3)^{\circ}\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Keithley Multimeter Type 2001	SN: 0810278	03-Sep-19 (No:25949)	Sep-20
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Auto DAE Calibration Unit	SE UWS 053 AA 1001	09-Jan-20 (in house check)	In house check: Jan-21
Calibrator Box V2.1	SE UMS 006 AA 1002	09-Jan-20 (in house check)	In house check: Jan-21

	Name	Function	Signature
Calibrated by:	Eric Hainfeld	Laboratory Technician	
Approved by:	Sven Kühn	Deputy Manager	

Issued: March 16, 2020

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



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

Accreditation No.: **SCS 0108**

Glossary

DAE data acquisition electronics
Connector angle information used in DASY system to align probe sensor X to the robot coordinate system.

Methods Applied and Interpretation of Parameters

- **DC Voltage Measurement:** Calibration Factor assessed for use in DASY system by comparison with a calibrated instrument traceable to national standards. The figure given corresponds to the full scale range of the voltmeter in the respective range.
- **Connector angle:** The angle of the connector is assessed measuring the angle mechanically by a tool inserted. Uncertainty is not required.
- The following parameters as documented in the Appendix contain technical information as a result from the performance test and require no uncertainty.
 - **DC Voltage Measurement Linearity:** Verification of the Linearity at +10% and -10% of the nominal calibration voltage. Influence of offset voltage is included in this measurement.
 - **Common mode sensitivity:** Influence of a positive or negative common mode voltage on the differential measurement.
 - **Channel separation:** Influence of a voltage on the neighbor channels not subject to an input voltage.
 - **AD Converter Values with inputs shorted:** Values on the internal AD converter corresponding to zero input voltage
 - **Input Offset Measurement:** Output voltage and statistical results over a large number of zero voltage measurements.
 - **Input Offset Current:** Typical value for information; Maximum channel input offset current, not considering the input resistance.
 - **Input resistance:** Typical value for information: DAE input resistance at the connector, during internal auto-zeroing and during measurement.
 - **Low Battery Alarm Voltage:** Typical value for information. Below this voltage, a battery alarm signal is generated.
 - **Power consumption:** Typical value for information. Supply currents in various operating modes.

DC Voltage Measurement

A/D - Converter Resolution nominal

High Range: 1LSB = 6.1 μ V, full range = -100...+300 mV

Low Range: 1LSB = 61nV, full range = -1.....+3mV

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

Calibration Factors	X	Y	Z
High Range	404.513 \pm 0.02% (k=2)	404.615 \pm 0.02% (k=2)	404.537 \pm 0.02% (k=2)
Low Range	3.97109 \pm 1.50% (k=2)	3.95930 \pm 1.50% (k=2)	3.96568 \pm 1.50% (k=2)

Connector Angle

Connector Angle to be used in DASY system	50.0 $^{\circ}$ \pm 1 $^{\circ}$
-------------------------------------------	------------------------------------

Appendix (Additional assessments outside the scope of SCS0108)

1. DC Voltage Linearity

High Range	Reading (μV)	Difference (μV)	Error (%)
Channel X + Input	200037.58	3.28	0.00
Channel X + Input	20009.65	3.92	0.02
Channel X - Input	-20001.89	3.62	-0.02
Channel Y + Input	200037.90	3.50	0.00
Channel Y + Input	20005.83	0.31	0.00
Channel Y - Input	-20005.73	-0.03	0.00
Channel Z + Input	200033.51	-0.62	-0.00
Channel Z + Input	20006.48	0.89	0.00
Channel Z - Input	-20006.01	-0.27	0.00

Low Range	Reading (μV)	Difference (μV)	Error (%)
Channel X + Input	2001.68	0.24	0.01
Channel X + Input	201.09	-0.22	-0.11
Channel X - Input	-198.93	-0.12	0.06
Channel Y + Input	2001.70	0.49	0.02
Channel Y + Input	200.70	-0.24	-0.12
Channel Y - Input	-199.76	-0.76	0.38
Channel Z + Input	2001.03	-0.04	-0.00
Channel Z + Input	201.25	0.40	0.20
Channel Z - Input	-199.29	-0.32	0.16

2. Common mode sensitivity

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

	Common mode Input Voltage (mV)	High Range Average Reading (μV)	Low Range Average Reading (μV)
Channel X	200	9.59	7.82
	- 200	-7.34	-8.76
Channel Y	200	14.74	14.93
	- 200	-16.81	-17.15
Channel Z	200	-3.39	-3.82
	- 200	3.03	3.16

3. Channel separation

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

	Input Voltage (mV)	Channel X (μV)	Channel Y (μV)	Channel Z (μV)
Channel X	200	-	3.19	-1.66
Channel Y	200	6.79	-	4.73
Channel Z	200	7.16	5.28	-

4. AD-Converter Values with inputs shorted

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

	High Range (LSB)	Low Range (LSB)
Channel X	15972	16183
Channel Y	15900	16376
Channel Z	16167	15841

5. Input Offset Measurement

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

Input 10M Ω

	Average (μ V)	min. Offset (μ V)	max. Offset (μ V)	Std. Deviation (μ V)
Channel X	1.19	0.18	2.38	0.46
Channel Y	0.15	-1.39	1.24	0.47
Channel Z	0.36	-1.22	1.42	0.42

6. Input Offset Current

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

7. Input Resistance (Typical values for information)

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

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

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

9. Power Consumption (Typical values for information)

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



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

Accreditation No.: SCS 0108

Client **Sporton**

Certificate No: **EX3-3819_Apr20**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3819**

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

Calibration date: **April 30, 2020**

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

All calibrations have been conducted in the closed laboratory facility: environment temperature $(22 \pm 3)^\circ\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104775	01-Apr-20 (No. 217-03100/03101)	Apr-21
Power sensor NRP-Z91	SN: 103244	01-Apr-20 (No. 217-03100)	Apr-21
Power sensor NRP-Z91	SN: 103245	01-Apr-20 (No. 217-03101)	Apr-21
Reference 20 dB Attenuator	SN: CC2552 (20x)	31-Mar-20 (No. 217-03106)	Apr-21
DAE4	SN: 660	27-Dec-19 (No. DAE4-660_Dec19)	Dec-20
Reference Probe ES3DV2	SN: 3013	31-Dec-19 (No. ES3-3013_Dec19)	Dec-20
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: MY41495087	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-18)	In house check: Jun-20
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-19)	In house check: Oct-20

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

Issued: April 30, 2020

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



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

Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

- 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 the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

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

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3819

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	0.46	0.41	0.46	± 10.1 %
DCP (mV) ^B	104.6	101.5	102.0	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dB/ $\sqrt{\mu\text{V}}$	C	D dB	VR mV	Max dev.	Unc ^C (k=2)
0	CW	X	0.0	0.0	1.0	0.00	156.7	± 3.5 %	± 4.7 %
		Y	0.0	0.0	1.0		148.5		
		Z	0.0	0.0	1.0		139.2		

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

^A The uncertainties of Norm X,Y,Z do not affect the E²-field uncertainty inside TSI, (see Page 5).

^B Numerical linearization parameter; uncertainty not required.

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

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3819

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	113.9
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3819

Calibration Parameter Determined in Head Tissue Simulating Media

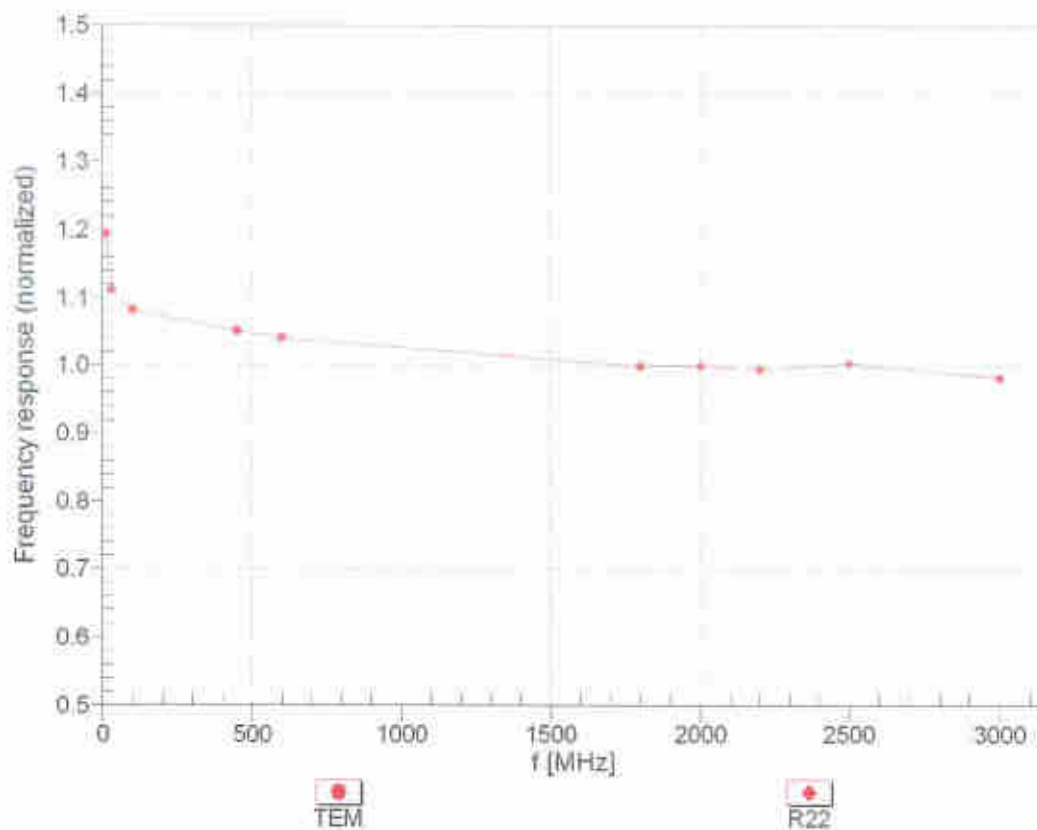
f (MHz) ^c	Relative Permittivity ^f	Conductivity (S/m) ^f	ConvF X	ConvF Y	ConvF Z	Alpha ^g	Depth (mm) ^g	Unc (k=2)
750	41.9	0.89	9.64	9.64	9.64	0.52	0.80	± 12.0 %
835	41.5	0.90	9.39	9.39	9.39	0.50	0.80	± 12.0 %
900	41.5	0.97	9.26	9.26	9.26	0.39	0.96	± 12.0 %
1750	40.1	1.37	8.43	8.43	8.43	0.34	0.80	± 12.0 %
1900	40.0	1.40	8.10	8.10	8.10	0.37	0.80	± 12.0 %
2000	40.0	1.40	7.95	7.95	7.95	0.30	0.88	± 12.0 %
2300	39.5	1.67	7.66	7.66	7.66	0.32	0.90	± 12.0 %
2450	39.2	1.80	7.42	7.42	7.42	0.38	0.90	± 12.0 %
2600	39.0	1.96	7.22	7.22	7.22	0.38	0.90	± 12.0 %
3300	38.2	2.71	6.91	6.91	6.91	0.20	1.20	± 14.0 %
3500	37.9	2.91	6.84	6.84	6.84	0.25	1.20	± 14.0 %
3700	37.7	3.12	6.75	6.75	6.75	0.25	1.25	± 14.0 %
3900	37.5	3.32	6.40	6.40	6.40	0.30	1.60	± 14.0 %
4100	37.2	3.53	6.39	6.39	6.39	0.30	1.60	± 14.0 %
4400	36.9	3.84	6.07	6.07	6.07	0.30	1.60	± 14.0 %
4600	36.7	4.04	5.98	5.98	5.98	0.30	1.70	± 14.0 %
4800	36.4	4.25	5.88	5.88	5.88	0.45	1.80	± 14.0 %
4950	36.3	4.40	5.72	5.72	5.72	0.45	1.80	± 14.0 %
5250	35.9	4.71	5.02	5.02	5.02	0.40	1.80	± 14.0 %
5600	35.5	5.07	4.56	4.56	4.56	0.40	1.80	± 14.0 %
5750	35.4	5.22	4.63	4.63	4.63	0.40	1.80	± 14.0 %

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

^f At frequencies up to 6 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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

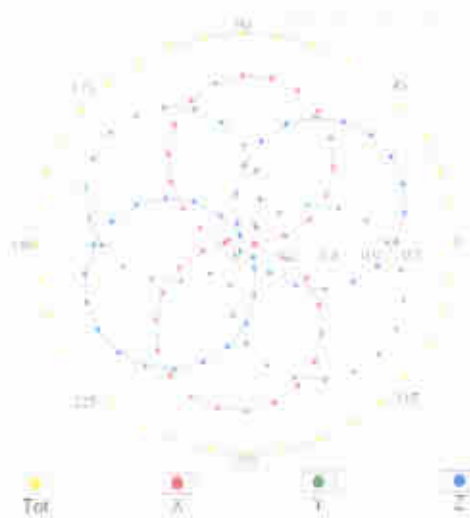
Frequency Response of E-Field (TEM-Cell: ifi110 EXX, Waveguide: R22)



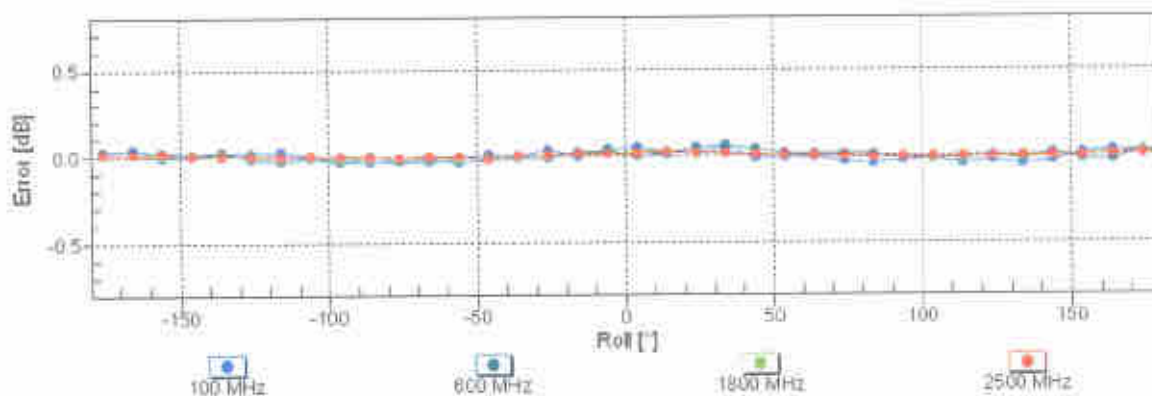
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ (k=2)

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

f=600 MHz,TEM

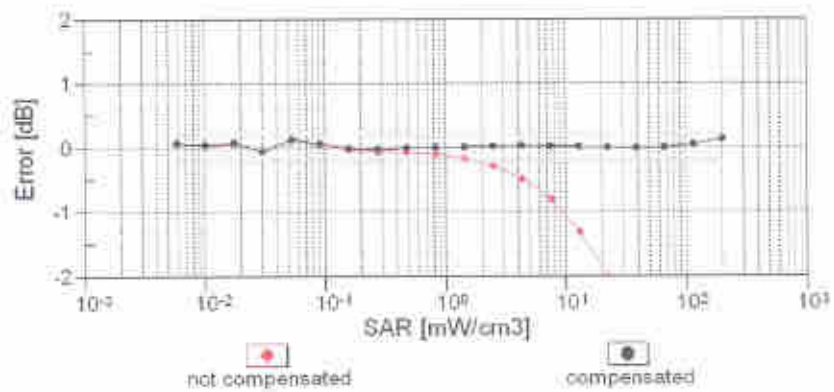
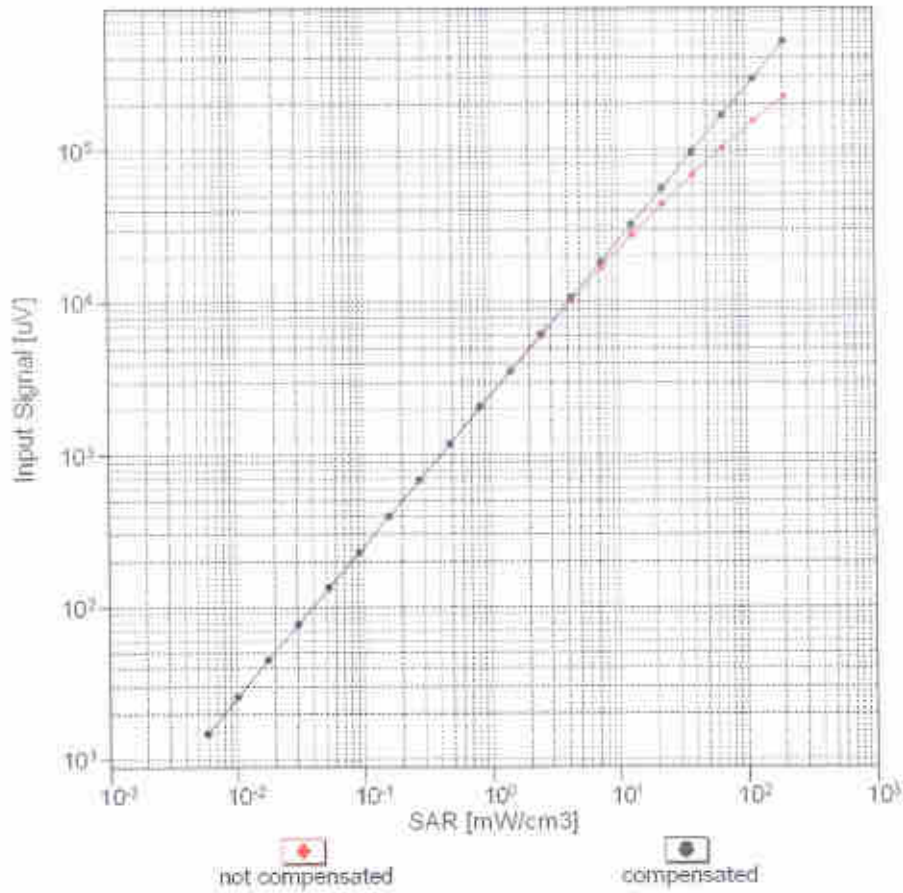


f=1800 MHz,R22



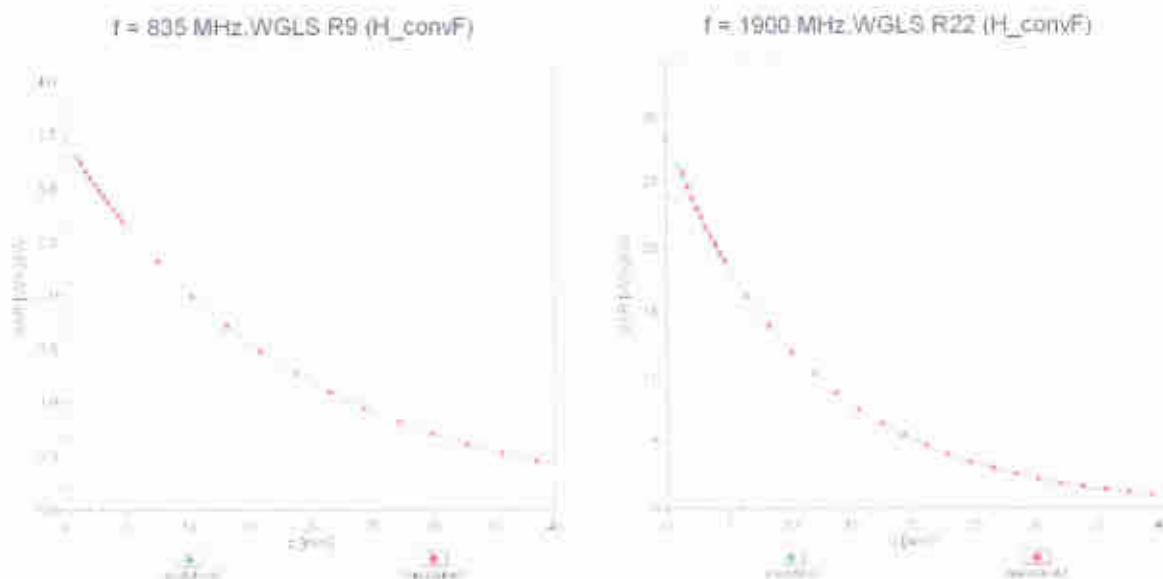
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ (k=2)

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

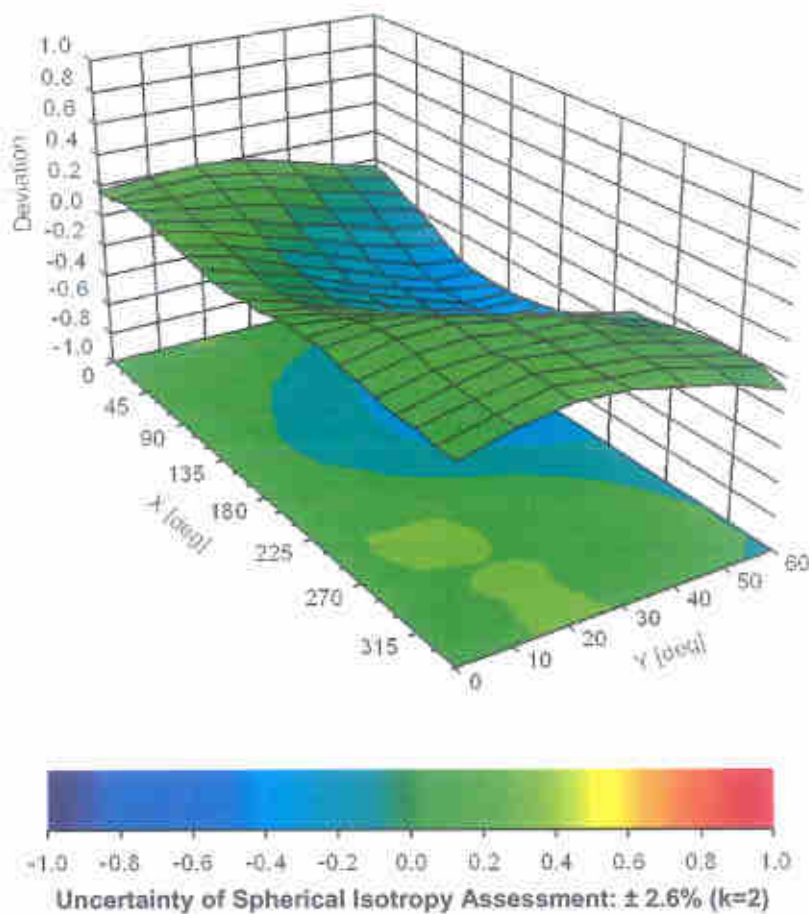


Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment



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





Appendix E. Conducted RF Output Power Table

The detailed power tables are shown as follows.



Full Power Mode – UAT

GSM850 TX Channel Frequency (MHz)	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame Average Power (dBm)			Tune-up Limit (dBm)
	126	189	251		126	189	251	
	154.4	158.4	163.8		84.2	88.4	149.8	
GSM 1 Tx slot	32.57	32.34	32.58	34.00	23.57	23.34	23.58	25.00
GPRS 1 Tx slot	32.48	32.23	32.49	34.00	23.48	23.23	23.49	25.00
GPRS 2 Tx slots	33.72	29.98	30.11	31.50	24.12	23.98	24.11	25.50
GPRS 3 Tx slots	28.41	28.58	28.52	30.00	24.15	24.30	24.28	25.74
GPRS 4 Tx slots	27.35	27.51	27.13	28.50	24.35	24.51	24.13	25.50
EDGE 1 Tx slot	25.62	25.73	25.51	27.50	18.82	18.73	18.51	18.50
EDGE 2 Tx slots	23.92	24.08	23.76	25.50	17.92	18.08	17.76	19.50
EDGE 3 Tx slots	22.67	22.63	22.69	24.50	18.41	18.37	18.43	20.24
EDGE 4 Tx slots	22.27	22.24	22.40	24.00	18.27	18.24	18.40	21.00

GSM1900 TX Channel Frequency (MHz)	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame Average Power (dBm)			Tune-up Limit (dBm)
	512	661	810		512	661	810	
	1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM 1 Tx slot	28.81	28.64	28.79	30.50	19.81	19.64	19.79	21.50
GPRS 1 Tx slot	28.71	28.55	28.71	30.50	19.73	19.58	19.71	21.50
GPRS 2 Tx slots	28.23	28.48	28.27	28.00	20.23	20.48	20.27	22.00
GPRS 3 Tx slots	25.41	25.33	25.21	27.00	21.15	21.07	20.95	22.74
GPRS 4 Tx slots	24.17	24.28	24.27	25.50	21.17	21.38	21.27	22.50
EDGE 1 Tx slot	23.19	23.06	23.19	27.00	16.19	16.06	16.19	18.00
EDGE 2 Tx slots	23.17	23.32	23.24	25.00	17.17	17.32	17.24	19.00
EDGE 3 Tx slots	22.12	22.37	22.23	24.00	17.86	18.11	17.87	19.74
EDGE 4 Tx slots	21.08	21.03	21.12	23.00	16.08	16.03	16.12	20.00

Band TX Channel Frequency (MHz)	WCDMA II			Tune-up Limit (dBm)	WCDMA IV			WCDMA V			Tune-up Limit (dBm)	
	9262	9400	9538		1312	1413	1513	4132	4182	4233		
	8602	8900	9398		1337	1638	1738	4307	4407	4458		
	1852.4	1880	1907.6		1712.4	1732.6	1752.8	826.4	836.4	846.8		
3GPP Rel 98 AMR 12.2Kbps	23.83	23.93	23.88	25.00	23.88	23.84	23.76	25.00	23.81	23.89	23.85	25.00
3GPP Rel 99 RMC 12.2Kbps	23.84	23.96	23.89	25.00	23.90	23.88	23.83	25.00	23.84	23.90	23.86	25.00
3GPP Rel 6 HSDPA Subtest-1	22.43	22.59	22.80	24.00	22.50	22.65	22.70	24.00	23.33	23.33	23.30	24.00
3GPP Rel 6 HSDPA Subtest-2	22.44	22.61	22.59	24.00	22.49	22.59	22.71	24.00	23.31	23.25	23.32	24.00
3GPP Rel 6 HSDPA Subtest-3	21.94	22.09	22.12	23.50	22.04	22.11	22.19	23.50	22.88	22.85	22.83	23.50
3GPP Rel 6 HSDPA Subtest-4	21.88	22.06	22.09	23.50	21.98	22.17	22.20	23.50	22.88	22.82	22.80	23.50
3GPP Rel 6 DC-HSDPA Subtest-1	22.50	22.66	22.85	24.00	22.56	22.65	22.77	24.00	23.43	23.40	23.38	24.00
3GPP Rel 6 DC-HSDPA Subtest-2	22.53	22.68	22.84	24.00	22.59	22.66	22.81	24.00	23.42	23.36	23.44	24.00
3GPP Rel 6 DC-HSDPA Subtest-3	22.04	22.17	22.20	23.50	22.14	22.21	22.29	23.50	22.95	22.94	22.93	23.50
3GPP Rel 6 DC-HSDPA Subtest-4	21.95	22.13	22.16	23.50	22.08	22.26	22.20	23.50	22.98	22.90	22.92	23.50
3GPP Rel 6 HSUPA Subtest-1	22.98	22.80	22.67	24.00	22.45	22.64	22.76	24.00	23.01	23.33	23.27	24.00
3GPP Rel 6 HSUPA Subtest-2	20.45	20.62	20.63	22.00	20.51	20.62	20.72	22.00	21.05	21.29	21.26	22.00
3GPP Rel 6 HSUPA Subtest-3	21.42	21.57	21.62	23.00	21.44	21.65	21.75	23.00	21.80	21.91	22.24	23.00
3GPP Rel 6 HSUPA Subtest-4	20.43	20.61	20.66	22.00	20.35	20.59	20.76	22.00	21.24	21.28	21.24	22.00
3GPP Rel 6 HSUPA Subtest-5	22.40	22.50	22.50	24.00	22.23	22.80	22.20	24.00	22.80	23.30	23.29	24.00
3GPP Rel 7 HSPA+ (16QAM) Subtest-1	20.38	20.52	20.84	22.00	20.13	20.52	20.25	22.00	20.87	20.82	20.91	22.00



Band 2 (1900MHz Band) Part 24E									
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch./Freq.	Power High Ch./Freq.	Power High Ch./Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel									
Frequency (MHz)									
20	QPSK	1	0	23.53	23.77	23.59			
20	QPSK	1	49	23.30	23.54	23.66			
20	QPSK	1	99	23.30	23.47	23.40			
20	QPSK	50	0	22.49	22.71	22.67			
20	QPSK	50	24	22.40	22.56	22.48			
20	QPSK	50	50	22.30	22.53	22.47			
20	QPSK	100	0	22.51	22.64	22.63			
20	16QAM	1	0	23.01	22.81	22.74			
20	16QAM	1	49	22.56	22.53	22.69			
20	16QAM	1	99	22.53	22.70	22.63			
20	16QAM	50	0	21.43	21.61	21.50			
20	16QAM	50	24	21.49	21.57	21.50			
20	16QAM	50	50	21.58	21.61	21.51			
20	16QAM	100	0	21.52	21.60	21.65			
20	84QAM	1	0	21.76	21.83	21.88			
20	84QAM	1	49	21.71	21.88	21.81			
20	84QAM	1	99	21.62	21.86	21.66			
20	84QAM	50	0	20.64	20.77	20.78			
20	84QAM	50	24	20.69	20.75	20.73			
20	84QAM	50	50	20.63	20.79	20.75			
20	84QAM	100	0	20.68	20.72	20.72			
Channel									
Frequency (MHz)									
15	QPSK	1	0	23.55	23.54	23.64			
15	QPSK	1	37	23.43	23.45	23.60			
15	QPSK	1	74	23.35	23.45	23.61			
15	QPSK	36	0	22.40	22.52	22.62			
15	QPSK	36	20	22.55	22.56	22.59			
15	QPSK	36	39	22.46	22.62	22.57			
15	QPSK	75	0	22.48	22.56	22.50			
15	16QAM	1	0	22.69	23.02	23.09			
15	16QAM	1	37	22.67	23.00	23.00			
15	16QAM	1	74	22.67	22.97	22.62			
15	16QAM	36	0	21.50	21.56	21.59			
15	16QAM	36	20	21.54	21.62	21.61			
15	16QAM	36	39	21.51	21.72	21.57			
15	16QAM	75	0	21.51	21.60	21.49			
15	84QAM	1	0	21.80	21.88	21.85			
15	84QAM	1	37	21.78	21.89	21.88			
15	84QAM	1	74	21.72	21.92	21.80			
15	84QAM	36	0	20.69	20.79	20.76			
15	84QAM	36	20	20.71	20.80	20.76			
15	84QAM	36	39	20.68	20.84	20.77			
15	84QAM	75	0	20.72	20.78	20.77			
Channel									
Frequency (MHz)									
10	QPSK	1	0	23.80	23.56	23.69			
10	QPSK	1	25	23.39	23.50	23.36			
10	QPSK	1	49	23.50	23.64	23.63			
10	QPSK	25	0	22.65	22.66	22.74			
10	QPSK	25	12	22.71	22.70	22.82			
10	QPSK	25	25	22.58	22.69	22.71			
10	QPSK	50	0	22.62	22.75	22.65			
10	16QAM	1	25	23.01	23.03	23.16			
10	16QAM	1	25	22.88	23.24	22.82			
10	16QAM	1	49	23.02	22.80	22.84			
10	16QAM	25	0	21.64	21.74	21.73			
10	16QAM	25	12	21.84	21.77	21.80			
10	16QAM	25	25	21.62	21.77	21.62			
10	16QAM	50	0	21.70	21.71	21.71			
10	84QAM	1	0	22.04	22.00	22.01			
10	84QAM	1	25	21.90	22.02	21.95			
10	84QAM	1	49	21.88	22.04	21.91			
10	84QAM	25	0	20.92	20.95	20.89			
10	84QAM	25	12	20.89	20.95	20.93			
10	84QAM	25	25	20.80	20.96	20.88			
10	84QAM	50	0	20.86	20.87	20.83			
Channel									
Frequency (MHz)									
5	QPSK	1	0	23.70	23.63	23.70			
5	QPSK	1	12	23.59	23.63	23.74			
5	QPSK	1	24	23.53	23.64	23.52			
5	QPSK	12	0	22.74	22.75	22.76			
5	QPSK	12	6	22.67	22.72	22.74			
5	QPSK	12	13	22.53	22.64	22.60			
5	QPSK	25	0	22.58	22.71	22.65			
5	16QAM	1	0	22.81	22.71	22.65			
5	16QAM	1	12	22.79	22.75	22.76			
5	16QAM	1	24	22.71	22.85	22.50			
5	16QAM	12	0	21.72	21.77	21.79			
5	16QAM	12	7	21.74	21.77	21.72			
5	16QAM	12	13	21.65	21.75	21.73			
5	16QAM	25	0	21.75	21.74	21.76			
5	84QAM	1	0	22.09	22.06	22.03			
5	84QAM	1	12	21.99	22.13	22.03			
5	84QAM	1	24	21.97	22.01	21.97			
5	84QAM	12	0	20.94	21.00	20.94			
5	84QAM	12	7	20.93	20.94	20.91			
5	84QAM	12	13	20.85	20.93	20.81			
5	84QAM	25	0	20.88	20.89	20.85			
Channel									
Frequency (MHz)									
3	QPSK	1	0	23.59	23.47	23.60			
3	QPSK	1	14	23.45	23.62	23.51			
3	QPSK	1	14	23.32	23.49	23.46			
3	QPSK	8	0	22.71	22.75	22.74			
3	QPSK	8	4	22.64	22.74	22.73			
3	QPSK	8	7	22.58	22.70	22.61			
3	QPSK	15	0	22.67	22.61	22.67			
3	16QAM	1	0	23.27	23.20	23.23			
3	16QAM	1	8	23.17	23.30	23.18			
3	16QAM	1	14	23.01	23.02	23.15			
3	16QAM	8	0	21.79	21.82	21.74			
3	16QAM	8	4	21.72	21.93	21.74			
3	16QAM	8	7	21.62	21.81	21.67			
3	16QAM	15	0	21.60	21.85	21.72			
3	84QAM	1	0	22.07	22.08	22.02			
3	84QAM	1	8	22.00	22.11	22.02			
3	84QAM	1	14	21.87	22.00	21.86			
3	84QAM	8	0	20.90	20.94	20.90			
3	84QAM	8	4	20.89	21.00	20.86			
3	84QAM	8	7	20.81	20.90	20.79			
3	84QAM	15	0	20.85	20.91	20.86			
Channel									
Frequency (MHz)									
1.4	QPSK	1	0	23.56	23.55	23.48			
1.4	QPSK	1	3	23.57	23.64	23.56			
1.4	QPSK	1	5	23.40	23.45	23.41			
1.4	QPSK	3	0	23.51	23.63	23.53			
1.4	QPSK	3	3	23.57	23.66	23.54			
1.4	QPSK	3	3	23.39	23.54	23.45			
1.4	QPSK	6	0	22.57	22.68	22.57			
1.4	16QAM	1	0	22.92	22.70	22.89			
1.4	16QAM	1	3	22.82	22.74	22.84			
1.4	16QAM	1	5	22.84	22.68	22.87			
1.4	16QAM	3	0	22.64	22.60	22.61			
1.4	16QAM	3	1	22.61	22.64	22.63			
1.4	16QAM	3	3	22.53	22.56	22.51			
1.4	16QAM	6	0	21.61	21.83	21.60			
1.4	84QAM	1	0	21.94	22.01	21.84			
1.4	84QAM	1	3	21.88	22.02	21.85			
1.4	84QAM	1	5	21.86	21.96	21.78			
1.4	84QAM	3	0	21.92	22.00	21.85			
1.4	84QAM	3	1	21.93	22.01	21.89			
1.4	84QAM	3	3	21.86	22.01	21.78			
1.4	84QAM	6	0	20.77	20.88	20.67			

Band 4 (AWS Band) Part 27L (only on channel required)									
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch./Freq.	Power High Ch./Freq.	Power High Ch./Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel									
Frequency (MHz)									
20	QPSK	1	0	23.82	23.54	23.53			
20	QPSK	1	49	23.53	23.58	23.46			
20	QPSK	1	99	23.30	23.47	23.47			
20	QPSK	50	0	22.58	22.60	22.60			
20	QPSK	50	24	22.73	22.56	22.55			
20	QPSK	50	50	22.52	22.51	22.45			
20	QPSK	100	0	22.58	22.55	22.56			
20	16QAM	1	0	22.74	22.54	22.89			
20	1								



Band 7 (2600MHz Band) Part 27									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				20850	21100	21350			
Frequency (MHz)				2510	2535	2560			
20	QPSK	1	0	22.50	22.67	22.56			
20	QPSK	1	49	22.57	22.74	22.64	24	0	
20	QPSK	1	99	22.78	23.08	23.00			
20	QPSK	50	0	21.50	21.61	21.54			
20	QPSK	50	24	21.78	22.06	21.79			
20	QPSK	50	50	21.84	21.77	21.75	23	1	
20	QPSK	100	0	21.69	21.74	21.70			
20	16QAM	1	0	21.70	22.02	21.75			
20	16QAM	1	49	21.71	22.19	21.74	23	1	
20	16QAM	1	99	21.71	22.01	21.83			
20	16QAM	50	0	20.54	20.63	20.58			
20	16QAM	50	24	20.70	20.66	20.75	22	2	
20	16QAM	50	50	20.63	20.70	20.69			
20	16QAM	100	0	20.67	20.76	20.88			
20	64QAM	1	0	20.58	20.69	20.81			
20	64QAM	1	49	20.72	20.84	20.87	22	2	
20	64QAM	1	99	20.78	21.03	20.86			
20	64QAM	50	0	19.56	19.76	19.79			
20	64QAM	50	24	19.66	19.82	19.87	21	3	
20	64QAM	50	50	19.64	19.89	19.86			
20	64QAM	100	0	19.65	19.80	19.85			
Channel				20826	21100	21375	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2507.5	2535	2562.5			
15	QPSK	1	0	22.44	22.47	22.60			
15	QPSK	1	37	22.52	22.70	22.61	24	0	
15	QPSK	1	74	22.46	22.70	22.56			
15	QPSK	36	0	21.61	21.63	21.63			
15	QPSK	36	20	21.69	21.76	21.65	23	1	
15	QPSK	36	39	21.71	21.71	21.68			
15	QPSK	75	0	21.65	21.71	21.58			
15	16QAM	1	0	21.73	21.69	21.60			
15	16QAM	1	37	21.47	22.13	21.59	23	1	
15	16QAM	1	74	21.56	22.28	21.66			
15	16QAM	36	0	20.50	20.60	20.57			
15	16QAM	36	20	20.64	20.65	20.69	22	2	
15	16QAM	36	39	20.68	20.79	20.73			
15	16QAM	75	0	20.69	20.65	20.75			
15	64QAM	1	0	20.62	20.78	20.85			
15	64QAM	1	37	20.62	20.90	20.88	22	2	
15	64QAM	1	74	20.64	21.00	20.89			
15	64QAM	36	0	19.55	19.80	19.80	21	3	
15	64QAM	36	20	19.63	19.82	19.81			
15	64QAM	36	39	19.61	19.93	19.86			
15	64QAM	75	0	19.64	19.80	19.81			
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2506	2535	2565			
10	QPSK	1	0	22.50	22.88	22.60			
10	QPSK	1	25	22.80	22.89	22.81	24	0	
10	QPSK	1	49	22.96	22.97	22.86			
10	QPSK	25	0	21.79	21.86	21.78			
10	QPSK	25	12	21.77	21.89	21.92	23	1	
10	QPSK	25	25	21.77	21.92	21.87			
10	QPSK	50	0	21.85	21.73	21.72			
10	16QAM	1	0	21.79	21.88	21.75	23	1	
10	16QAM	1	25	21.65	22.06	21.77			
10	16QAM	1	49	21.77	22.15	21.94			
10	16QAM	25	0	20.80	20.85	20.82			
10	16QAM	25	12	20.86	20.92	20.78	22	2	
10	16QAM	25	25	20.78	20.97	20.86			
10	16QAM	50	0	20.81	20.88	20.85			
10	64QAM	1	0	20.86	20.98	21.07			
10	64QAM	1	25	20.89	21.12	21.09	22	2	
10	64QAM	1	49	20.93	21.22	21.13			
10	64QAM	25	0	19.78	19.98	19.99			
10	64QAM	25	12	19.80	20.04	20.02	21	3	
10	64QAM	25	25	19.77	20.09	20.06			
10	64QAM	50	0	19.77	20.01	19.97			
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2502.5	2535	2567.5			
5	QPSK	1	0	22.57	22.73	22.64			
5	QPSK	1	12	22.70	22.85	22.76	24	0	
5	QPSK	1	24	22.67	22.86	22.79			
5	QPSK	12	0	21.73	21.74	21.74			
5	QPSK	12	7	21.80	21.85	21.87	23	1	
5	QPSK	12	13	21.84	21.95	21.92			
5	QPSK	25	0	21.81	21.85	21.85			
5	16QAM	1	0	22.33	21.63	22.01			
5	16QAM	1	12	21.94	22.02	22.00	23	1	
5	16QAM	1	24	22.35	22.35	21.97			
5	16QAM	12	0	20.72	20.88	20.80			
5	16QAM	12	7	20.92	20.90	20.84	22	2	
5	16QAM	12	13	20.74	20.98	20.86			
5	16QAM	25	0	20.80	20.88	20.87			
5	64QAM	1	0	20.88	21.07	21.13			
5	64QAM	1	12	20.86	21.16	21.09	22	2	
5	64QAM	1	24	20.82	21.21	21.06			
5	64QAM	12	0	19.75	19.96	19.96			
5	64QAM	12	7	19.79	20.07	20.06			
5	64QAM	12	13	19.83	20.14	20.08	21	3	
5	64QAM	25	0	19.74	19.98	19.99			

Band 12 (700MHz Low Band) Part 27F(only on channel required)									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				23060	23095	23130			
Frequency (MHz)				704	707.5	711			
10	QPSK	1	0	23.71	24.08	23.62			
10	QPSK	1	25	23.87	23.92	23.81	25	0	
10	QPSK	1	49	23.95	23.94	23.89			
10	QPSK	25	0	23.06	23.07	23.02			
10	QPSK	25	12	22.95	22.92	22.79	24	1	
10	QPSK	25	25	22.98	22.97	23.03			
10	QPSK	50	0	22.94	23.03	23.00			
10	16QAM	1	0	23.01	23.46	23.42			
10	16QAM	1	25	23.12	23.42	23.19	24	1	
10	16QAM	1	49	23.06	23.44	23.10			
10	16QAM	25	0	21.88	21.87	21.81			
10	16QAM	25	12	22.13	21.99	22.05	23	2	
10	16QAM	25	25	21.92	22.14	21.91			
10	16QAM	50	0	22.08	21.92	22.07			
10	64QAM	1	0	22.22	22.13	22.17			
10	64QAM	1	25	22.18	22.21	22.10	23	2	
10	64QAM	1	49	22.25	22.28	22.24			
10	64QAM	25	0	21.09	21.08	21.05			
10	64QAM	25	12	21.17	21.12	21.18	22	3	
10	64QAM	25	25	21.16	21.15	21.15			
10	64QAM	50	0	21.16	21.09	21.13			
Channel				23035	23095	23155	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				701.5	707.5	713.5			
5	QPSK	1	0	23.71	23.80	23.81			
5	QPSK	1	12	23.87	23.90	23.86	25	0	
5	QPSK	1	24	23.83	24.00	23.84			
5	QPSK	12	0	22.96	22.95	22.86			
5	QPSK	12	7	23.01	22.99	22.90	24	1	
5	QPSK	12	13	22.98	22.90	22.85			
5	QPSK	25	0	22.99	22.93	22.88			
5	16QAM	1	0	22.98	22.97	23.10			
5	16QAM	1	12	23.14	22.98	23.12	24	1	
5	16QAM	1	24	23.24	23.05	23.33			
5	16QAM	12	0	21.96	21.97	21.83			
5	16QAM	12	7	21.96	21.95	21.86	23	2	
5	16QAM	12	13	21.92	21.99	21.91			
5	16QAM	25	0	21.91	21.88	21.82			
5	64QAM	1	0	22.20	22.15	22.22			
5	64QAM	1	12	22.19	22.26	22.18	23	2	
5	64QAM	1	24	22.20	22.29	22.17			
5	64QAM	12	0	21.16	21.13	21.11			
5	64QAM	12	7	21.20	21.14	21.10	22	3	
5	64QAM	12	13	21.16	21.17	21.10			
5	64QAM</								



Band 17 (700MHz Band) Part 27H(only on channel required)									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel									
Frequency (MHz)				23780	23790	23800			
Frequency (MHz)				709	710	711			
10	QPSK	1	0	23.79	23.73	23.75			
10	QPSK	1	25	23.52	23.49	23.59			
10	QPSK	1	49	23.50	23.64	23.53			
10	QPSK	25	0	22.62	22.59	22.57			
10	QPSK	25	12	22.61	22.62	22.65			
10	QPSK	25	25	22.70	22.53	22.60			
10	QPSK	50	0	22.68	22.55	22.48			
10	16QAM	1	0	23.20	23.06	23.04			
10	16QAM	1	25	22.07	22.86	22.62			
10	16QAM	1	49	23.07	23.10	22.96			
10	16QAM	25	0	21.62	21.49	21.55			
10	16QAM	25	12	21.68	21.77	21.64			
10	16QAM	25	25	21.50	21.75	21.71			
10	16QAM	50	0	21.70	21.64	21.64			
10	64QAM	1	0	21.89	21.82	21.87			
10	64QAM	1	25	21.85	21.89	21.80			
10	64QAM	1	49	21.91	21.93	21.87			
10	64QAM	25	0	20.73	20.74	20.74			
10	64QAM	25	12	20.83	20.78	20.84			
10	64QAM	25	25	20.80	20.78	20.79			
10	64QAM	50	0	20.79	20.71	20.75			
Channel									
Frequency (MHz)				23756	23790	23825			
Frequency (MHz)				705.5	710	713.5			
5	QPSK	1	0	23.62	23.70	23.52			
5	QPSK	1	12	23.47	23.61	23.59			
5	QPSK	1	24	23.55	23.45	23.52			
5	QPSK	12	0	22.66	22.67	22.62			
5	QPSK	12	7	22.83	22.59	22.60			
5	QPSK	12	13	22.56	22.62	22.60			
5	QPSK	25	0	22.60	22.59	22.61			
5	16QAM	1	0	22.75	22.78	22.93			
5	16QAM	1	12	23.08	22.77	22.73			
5	16QAM	1	24	22.84	22.65	22.83			
5	16QAM	12	0	21.64	21.66	21.61			
5	16QAM	12	7	21.70	21.66	21.59			
5	16QAM	12	13	21.67	21.66	21.63			
5	16QAM	25	0	21.68	21.68	21.61			
5	64QAM	1	0	21.93	21.90	21.95			
5	64QAM	1	12	21.89	21.88	21.88			
5	64QAM	1	24	21.92	21.88	21.88			
5	64QAM	12	0	20.85	20.85	20.81			
5	64QAM	12	7	20.84	20.80	20.78			
5	64QAM	12	13	20.79	20.82	20.77			
5	64QAM	25	0	20.78	20.76	20.73			

Band 25 (1900MHz Band) Part 24E									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel									
Frequency (MHz)				1860	1880	1905			
20	QPSK	1	0	23.45	23.51	23.84			
20	QPSK	1	49	23.45	23.51	23.84			
20	QPSK	1	99	23.37	23.38	23.53			
20	QPSK	50	0	22.42	22.47	22.59			
20	QPSK	50	24	22.55	22.57	22.71			
20	QPSK	50	50	22.49	22.55	22.64			
20	QPSK	100	0	22.47	22.57	22.70			
20	16QAM	1	0	22.47	22.97	22.71			
20	16QAM	1	49	22.52	22.70	23.10			
20	16QAM	1	99	22.33	22.74	22.95			
20	16QAM	50	0	21.38	21.58	21.64			
20	16QAM	50	24	21.56	21.66	21.69			
20	16QAM	50	50	21.46	21.63	21.71			
20	16QAM	100	0	21.41	21.67	21.74			
20	64QAM	1	0	21.83	21.80	21.88			
20	64QAM	1	49	21.78	21.91	21.86			
20	64QAM	1	99	21.71	21.78	21.78			
20	64QAM	50	0	20.68	20.74	20.80			
20	64QAM	50	24	20.73	20.85	20.85			
20	64QAM	50	50	20.68	20.79	20.78			
20	64QAM	100	0	20.70	20.81	20.81			
Channel									
Frequency (MHz)				1857.5	1890	1907.5			
15	QPSK	1	0	23.45	23.42	23.53			
15	QPSK	1	37	23.42	23.41	23.48			
15	QPSK	1	74	23.25	23.40	23.48			
15	QPSK	36	0	22.47	22.55	22.57			
15	QPSK	36	20	22.63	22.68	22.68			
15	QPSK	36	39	22.43	22.68	22.65			
15	QPSK	75	0	22.53	22.65	22.60			
15	16QAM	1	0	22.45	22.62	23.04			
15	16QAM	1	37	22.58	22.66	22.92			
15	16QAM	1	74	22.67	22.63	23.04			
15	16QAM	36	0	21.49	21.76	21.95			
15	16QAM	36	20	21.49	21.87	21.85			
15	16QAM	36	39	21.51	21.63	21.65			
15	16QAM	75	0	21.51	21.61	21.61			
15	64QAM	1	0	21.74	21.82	21.84			
15	64QAM	1	37	21.69	21.85	21.77			
15	64QAM	1	74	21.68	21.79	21.76			
15	64QAM	36	0	20.73	20.73	20.73			
15	64QAM	36	20	20.67	20.81	20.73			
15	64QAM	36	39	20.65	20.79	20.76			
15	64QAM	75	0	20.67	20.77	20.70			
Channel									
Frequency (MHz)				1855	1880	1910			
10	QPSK	1	0	23.42	23.64	23.64			
10	QPSK	1	25	23.42	23.74	23.67			
10	QPSK	1	49	23.46	23.75	23.70			
10	QPSK	25	0	22.64	22.72	22.74			
10	QPSK	25	12	22.67	22.76	22.79			
10	QPSK	25	25	22.58	22.80	22.83			
10	QPSK	50	0	22.58	22.65	22.78			
10	16QAM	1	0	22.86	22.91	22.90			
10	16QAM	1	25	22.83	22.65	22.98			
10	16QAM	1	49	22.61	23.16	23.10			
10	16QAM	25	0	21.64	21.70	21.82			
10	16QAM	25	12	21.67	21.81	21.71			
10	16QAM	25	25	21.56	21.70	21.75			
10	16QAM	50	0	21.71	21.76	21.86			
10	64QAM	1	0	21.97	21.92	21.93			
10	64QAM	1	25	21.83	21.94	21.90			
10	64QAM	1	49	21.84	21.95	21.98			
10	64QAM	25	0	20.85	20.87	20.89			
10	64QAM	25	12	20.83	20.97	20.89			
10	64QAM	25	25	20.80	20.91	20.91			
10	64QAM	50	0	20.83	20.93	20.86			
Channel									
Frequency (MHz)				1852.5	1880	1912.5			
5	QPSK	1	0	23.56	23.54	23.72			
5	QPSK	1	12	23.60	23.66	23.82			
5	QPSK	1	24	23.50	23.61	23.62			
5	QPSK	12	0	22.72	22.76	22.73			
5	QPSK	12	7	22.63	22.70	22.81			
5	QPSK	12	13	22.62	22.72	22.83			
5	QPSK	25	0	22.60	22.71	22.75			
5	16QAM	1	0	23.17	23.31	23.83			
5	16QAM	1	12	23.07	23.33	22.89			
5	16QAM	1	24	22.78	23.30	22.80			
5	16QAM	12	0	21.72	21.74	21.86			
5	16QAM	12	7	21.70	21.74	21.83			
5	16QAM	12	13	21.67	21.72	21.73			
5	16QAM	25	0	21.69	21.81	21.89			
5	64QAM	1	0	22.12	22.07	21.96			
5	64QAM	1	12	22.00	22.03	21.95			
5	64QAM	1	24	21.99	22.06	21.90			
5	64QAM	12	0	20.85	20.96	20.90			
5	64QAM	12	7	20.89	20.96	20.93			
5	64QAM	12	13	20.81	20.96	20.89			
5	64QAM	25	0	20.82	20.91	20.88			
Channel									
Frequency (MHz)				1850.5	1880	1914.3			
1.4	QPSK	1	0	23.51	23.54	23.50			
1.4	QPSK	1	3	23.49	23.75	23.58			
1.4									



Band 66									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				152072	152322	152572			
Frequency (MHz)				1720	1745	1770			
20	QPSK	1	0	23.70	23.66	23.50			
20	QPSK	1	49	23.66	23.72	23.55	25	0	
20	QPSK	1	99	23.66	23.55	23.51			
20	QPSK	50	0	22.52	22.48	22.36			
20	QPSK	50	24	22.56	22.55	22.43	24	1	
20	QPSK	50	50	22.63	22.57	22.51			
20	QPSK	100	0	22.62	22.55	22.46			
20	16QAM	1	0	22.56	23.05	22.65			
20	16QAM	1	49	22.56	22.95	22.75	24	1	
20	16QAM	1	99	22.61	22.85	22.58			
20	16QAM	50	0	21.85	21.44	21.57			
20	16QAM	50	24	21.58	21.59	21.52	23	2	
20	16QAM	50	50	21.61	21.47	21.44			
20	16QAM	100	0	21.63	21.53	21.38			
20	64QAM	1	0	21.74	21.87	21.71			
20	64QAM	1	49	21.66	21.87	21.80	23	2	
20	64QAM	1	99	21.93	21.51	21.21			
20	64QAM	50	0	20.63	20.72	20.62			
20	64QAM	50	24	20.71	20.69	20.61	22	3	
20	64QAM	50	50	20.66	20.71	20.64			
20	64QAM	100	0	20.67	20.75	20.60			
Channel				152047	152322	152597	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1717.5	1745	1772.5			
15	QPSK	1	0	23.46	23.41	23.54			
15	QPSK	1	37	23.42	23.55	23.39	25	0	
15	QPSK	1	74	23.34	23.21	23.13			
15	QPSK	36	0	22.61	22.53	22.54			
15	QPSK	36	20	22.61	22.52	22.51	24	1	
15	QPSK	36	39	22.62	22.54	22.45			
15	QPSK	75	0	22.56	22.52	22.44			
15	16QAM	1	0	23.01	22.85	22.78			
15	16QAM	1	37	23.12	22.81	22.67	24	1	
15	16QAM	1	74	22.52	22.66	22.40			
15	16QAM	36	0	21.61	21.52	21.37			
15	16QAM	36	20	21.80	21.45	21.83	23	2	
15	16QAM	36	39	21.55	21.41	21.45			
15	16QAM	75	0	21.58	21.56	21.44			
15	64QAM	1	0	21.70	21.77	21.68			
15	64QAM	1	37	21.82	21.82	21.49	23	2	
15	64QAM	1	74	21.71	21.29	21.05			
15	64QAM	36	0	20.70	20.71	20.61			
15	64QAM	36	20	20.71	20.77	20.67	22	3	
15	64QAM	36	39	20.68	20.75	20.63			
15	64QAM	75	0	20.68	20.74	20.56			
Channel				152022	152322	152622	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1715	1745	1775			
10	QPSK	1	0	23.80	23.60	23.50			
10	QPSK	1	25	23.77	23.77	23.59	25	0	
10	QPSK	1	49	23.68	23.56	23.29			
10	QPSK	25	0	22.70	22.61	22.57			
10	QPSK	25	12	22.69	22.64	22.71	24	1	
10	QPSK	25	25	22.68	22.61	22.54			
10	QPSK	50	0	22.73	22.65	22.63			
10	16QAM	1	0	22.95	23.21	23.05			
10	16QAM	1	25	22.71	22.51	22.88	24	1	
10	16QAM	1	49	22.90	23.08	23.07			
10	16QAM	25	0	21.74	21.61	21.57			
10	16QAM	25	12	21.77	21.66	21.51	23	2	
10	16QAM	25	25	21.65	21.68	21.55			
10	16QAM	50	0	21.69	21.60	21.61			
10	64QAM	1	0	21.88	22.00	21.80			
10	64QAM	1	25	21.69	21.87	21.80	23	2	
10	64QAM	1	49	21.51	21.94	21.58			
10	64QAM	25	0	20.84	20.85	20.71			
10	64QAM	25	12	20.86	20.92	20.74	22	3	
10	64QAM	25	25	20.71	20.85	20.75			
10	64QAM	50	0	20.86	20.87	20.72			
Channel				151987	152322	152647	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1712.5	1745	1777.5			
5	QPSK	1	0	23.57	23.60	23.61			
5	QPSK	1	12	23.68	23.52	23.73	25	0	
5	QPSK	1	24	23.62	23.49	23.64			
5	QPSK	12	0	22.68	22.62	22.61			
5	QPSK	12	7	22.75	22.62	22.67	24	1	
5	QPSK	12	13	22.66	22.60	22.62			
5	QPSK	25	0	22.68	22.62	22.66			
5	16QAM	1	0	23.21	23.07	22.81			
5	16QAM	1	12	23.12	23.23	22.66	24	1	
5	16QAM	1	24	22.85	23.20	22.75			
5	16QAM	12	0	21.79	21.62	21.74			
5	16QAM	12	7	21.83	21.85	21.86	23	2	
5	16QAM	12	13	21.70	21.64	21.61			
5	16QAM	25	0	21.62	21.69	21.67			
5	64QAM	1	0	21.99	22.01	21.91			
5	64QAM	1	12	21.94	22.04	21.86	23	2	
5	64QAM	1	24	21.91	21.91	21.87			
5	64QAM	12	0	20.87	20.80	20.81			
5	64QAM	12	7	20.85	20.91	20.78	22	3	
5	64QAM	12	13	20.84	20.87	20.73			
5	64QAM	25	0	20.77	20.85	20.70			
Channel				151987	152322	152657	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1711.5	1745	1778.5			
3	QPSK	1	0	23.63	23.49	23.61			
3	QPSK	1	8	23.75	23.65	23.60	25	0	
3	QPSK	1	14	23.62	23.52	23.55			
3	QPSK	8	0	22.73	22.64	22.59			
3	QPSK	8	4	22.70	22.66	22.61	24	1	
3	QPSK	8	7	22.70	22.57	22.59			
3	QPSK	15	0	22.67	22.58	22.61			
3	16QAM	1	0	22.82	22.70	22.64			
3	16QAM	1	8	22.58	23.25	22.84	24	1	
3	16QAM	1	14	22.78	23.00	22.47			
3	16QAM	8	0	21.83	21.54	21.75			
3	16QAM	8	4	21.84	21.71	21.69	23	2	
3	16QAM	8	7	21.77	21.59	21.56			
3	16QAM	15	0	21.76	21.68	21.51			
3	64QAM	1	0	21.93	22.00	21.87			
3	64QAM	1	8	22.00	22.08	21.91	23	2	
3	64QAM	1	14	21.91	22.04	21.83			
3	64QAM	8	0	20.81	20.87	20.74			
3	64QAM	8	4	20.86	20.93	20.77	22	3	
3	64QAM	8	7	20.83	20.88	20.69			
3	64QAM	15	0	20.78	20.87	20.72			
Channel				151979	152322	152645	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1710.7	1745	1779.3			
1.4	QPSK	1	0	23.54	23.45	23.45			
1.4	QPSK	1	3	23.62	23.46	23.48			
1.4	QPSK	1	5	23.56	23.43	23.42	25	0	
1.4	QPSK	3	0	23.56	23.49	23.46			
1.4	QPSK	3	1	23.51	23.48	23.43			
1.4	QPSK	3	3	23.53	23.43	23.44			
1.4	QPSK	6	0	22.58	22.51	22.48	24	1	
1.4	16QAM	1	0	22.84	22.49	22.63			
1.4	16QAM	1	3	22.86	22.70	22.80			
1.4	16QAM	1	5	22.76	22.63	22.83	24	1	
1.4	16QAM	3	0	22.71	22.42	22.67			
1.4	16QAM	3	1	22.75	22.50	22.65			
1.4	16QAM	3	3	22.60	22.38	22.66			
1.4	16QAM	6	0	21.79	21.46	21.66	23	2	
1.4	64QAM	1	0	21.81	21.38	21.75			
1.4	64QAM	1	3	21.87	21.99	21.87			
1.4	64QAM	1	5	21.80	21.92	21.73	23	2	
1.4	64QAM	3	0	21.81	21.89	21.72			
1.4	64QAM	3	1	21.86	21.97	21.82			
1.4	64QAM	3	3	21.79	21.91	21.73			
1.4	64QAM	6	0	20.69	20.77	20.61	22	3	

Band 71									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / F				



Band 38(only on channel required)										
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch / Freq	Power Mid Ch / Freq	Power High Ch / Freq	Tune-up limit (dBm)	MFR (dB)		
Channel										
Frequency (MHz)										
20	QPSK	1	0	21.55	22.45	23.35	24	0		
20	QPSK	1	48	21.61	22.50	23.44	25	0		
20	QPSK	50	0	22.55	22.65	22.75	24	1		
20	QPSK	50	24	22.69	22.76	22.82	24	1		
20	QPSK	50	48	22.75	22.85	22.95	24	1		
20	QPSK	100	0	22.71	22.48	22.25	24	1		
20	HQAM	1	0	22.55	22.57	22.55	24	1		
20	HQAM	1	48	22.60	22.59	22.56	24	1		
20	HQAM	1	96	22.78	22.85	22.95	24	1		
20	HQAM	50	0	21.74	21.46	21.47	23	2		
20	HQAM	50	24	21.89	21.55	21.53	23	2		
20	HQAM	50	48	21.76	21.55	21.68	23	2		
20	HQAM	100	0	21.86	21.49	21.59	23	2		
20	HQAM	100	48	21.27	21.15	21.15	23	2		
20	HQAM	100	96	21.48	21.18	21.31	23	2		
20	HQAM	50	0	21.55	21.35	21.44	22	3		
20	HQAM	50	24	20.76	20.42	20.56	22	3		
20	HQAM	50	48	20.81	20.59	20.70	22	3		
20	HQAM	100	0	20.73	20.63	20.58	22	3		
Channel										
Frequency (MHz)										
15	QPSK	1	0	23.52	23.33	23.20	25	0		
15	QPSK	1	48	23.57	23.41	23.24	25	0		
15	QPSK	1	96	23.62	23.49	23.34	25	0		
15	QPSK	74	0	23.55	23.41	23.24	25	0		
15	QPSK	38	0	22.71	22.44	22.51	24	1		
15	QPSK	38	24	22.86	22.52	22.54	24	1		
15	QPSK	38	48	22.66	22.50	22.64	24	1		
15	QPSK	75	0	22.73	22.46	22.61	24	1		
15	HQAM	1	0	22.48	22.42	22.42	24	1		
15	HQAM	1	37	22.81	22.87	22.82	24	1		
15	HQAM	1	74	22.92	22.89	22.86	24	1		
15	HQAM	38	0	21.66	21.62	21.66	23	2		
15	HQAM	38	20	21.75	21.49	21.64	23	2		
15	HQAM	38	40	21.83	21.57	21.72	23	2		
15	HQAM	75	0	21.41	21.03	21.28	23	2		
15	HQAM	75	37	21.50	21.29	21.40	23	2		
15	HQAM	75	74	21.63	21.29	21.46	23	2		
15	HQAM	38	0	20.78	20.37	20.56	22	3		
15	HQAM	38	20	20.82	20.30	20.50	22	3		
15	HQAM	38	40	20.76	20.43	20.67	22	3		
15	HQAM	75	0	20.65	20.33	20.64	22	3		
Channel										
Frequency (MHz)										
10	QPSK	1	0	25.75	25.65	25.75	26	0		
10	QPSK	1	48	25.79	25.63	25.67	26	0		
10	QPSK	1	96	25.83	25.66	25.69	26	0		
10	QPSK	25	0	22.88	22.73	22.78	24	1		
10	QPSK	25	12	22.80	22.71	22.87	24	1		
10	QPSK	50	0	22.85	22.80	22.74	24	1		
10	HQAM	1	0	22.70	22.54	22.71	24	1		
10	HQAM	1	25	22.86	22.66	22.76	24	1		
10	HQAM	1	49	22.78	22.62	22.70	24	1		
10	HQAM	25	0	21.93	21.67	21.65	23	2		
10	HQAM	25	12	21.80	21.50	21.60	23	2		
10	HQAM	25	25	21.82	21.51	21.77	23	2		
10	HQAM	50	0	21.70	21.50	21.61	23	2		
10	HQAM	50	12	21.49	21.62	21.68	23	2		
10	HQAM	50	25	21.48	21.61	21.68	23	2		
10	HQAM	75	0	21.87	21.56	21.57	23	2		
10	HQAM	75	25	20.98	20.90	20.81	22	3		
10	HQAM	75	49	20.74	20.68	20.63	22	3		
10	HQAM	50	0	20.76	20.69	20.70	22	3		
Channel										
Frequency (MHz)										
5	QPSK	1	0	24.67	24.43	24.29	25	0		
5	QPSK	1	12	23.59	23.44	23.35	25	0		
5	QPSK	1	24	23.59	23.54	23.55	25	0		
5	QPSK	12	0	22.64	22.57	22.50	24	1		
5	QPSK	12	7	22.85	22.59	22.67	24	1		
5	QPSK	25	0	22.59	22.58	22.58	24	1		
5	HQAM	1	0	22.85	22.80	22.71	24	1		
5	HQAM	1	12	22.73	22.78	22.71	24	1		
5	HQAM	1	24	22.91	22.71	22.72	24	1		
5	HQAM	12	0	21.80	21.54	21.57	23	2		
5	HQAM	12	7	21.65	21.54	21.65	23	2		
5	HQAM	12	13	21.61	21.49	21.57	23	2		
5	HQAM	25	0	21.70	21.61	21.60	23	2		
5	HQAM	25	12	21.46	21.66	21.60	23	2		
5	HQAM	25	24	21.47	21.63	21.59	23	2		
5	HQAM	12	0	20.83	20.91	20.79	22	3		
5	HQAM	12	7	20.87	20.93	20.78	22	3		
5	HQAM	12	13	20.73	20.95	20.78	22	3		
5	HQAM	25	0	20.80	20.85	20.81	22	3		

Band 41 (2.6G Band)										
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch / Freq	Power Mid Ch / Freq	Power High Ch / Freq	Tune-up limit (dBm)	MFR (dB)		
Channel										
Frequency (MHz)										
20	QPSK	1	0	25.76	25.63	25.50	26	0		
20	QPSK	1	48	25.80	25.68	25.55	26	0		
20	QPSK	1	96	25.79	25.62	25.58	26	0		
20	QPSK	50	0	22.85	22.72	22.91	24	1		
20	QPSK	50	24	22.95	22.82	23.00	24	1		
20	QPSK	50	48	22.88	22.76	22.98	24	1		
20	HQAM	1	0	22.89	22.89	22.89	24	1		
20	HQAM	1	48	22.93	22.79	22.82	24	1		
20	HQAM	1	96	22.80	22.83	22.87	24	1		
20	HQAM	50	0	21.91	21.89	21.85	23	2		
20	HQAM	50	24	22.00	21.92	21.91	23	2		
20	HQAM	50	48	22.00	21.94	21.85	23	2		
20	HQAM	100	0	22.09	21.81	21.89	23	2		
20	HQAM	100	48	21.94	21.82	21.71	23	2		
20	HQAM	100	96	21.78	21.75	21.50	23	2		
20	HQAM	50	0	21.13	21.32	21.03	22	3		
20	HQAM	50	24	21.17	21.24	21.10	22	3		
20	HQAM	50	48	21.03	21.30	21.04	22	3		
20	HQAM	100	0	21.07	21.20	21.14	22	3		
Channel										
Frequency (MHz)										
15	QPSK	1	0	23.17	23.25	23.30	25	0		
15	QPSK	1	37	23.07	23.07	23.07	25	0		
15	QPSK	1	74	23.34	23.37	23.43	25	0		
15	QPSK	38	0	22.48	22.48	22.38	24	1		
15	QPSK	38	20	22.52	22.40	22.42	24	1		
15	QPSK	38	38	22.48	22.41	22.48	24	1		
15	QPSK	75	0	22.54	22.50	22.56	24	1		
15	HQAM	1	0	22.44	22.42	22.42	24	1		
15	HQAM	1	37	22.48	22.42	22.42	24	1		
15	HQAM	1	74	22.46	22.40	22.48	24	1		
15	HQAM	38	0	21.44	21.35	21.33	23	2		
15	HQAM	38	20	21.39	21.42	21.48	23	2		
15	HQAM	38	38	21.35	21.43	21.40	23	2		
15	HQAM	75	0	21.46	21.90	21.46	23	2		
15	HQAM	75	0	21.31	21.35	21.30	23	2		
15	HQAM	75	37	21.29	21.31	21.31	23	2		
15	HQAM	75	74	21.37	21.28	21.24	23	2		
15	HQAM	38	0	20.59	20.63	20.63	22	3		
15	HQAM	38	20	20.62	20.74	20.67	22	3		
15	HQAM	38	38	20.65	20.76	20.63	22	3		
15	HQAM	75	0	20.74	20.69	20.63	22	3		
Channel										
Frequency (MHz)										
10	QPSK	1	0	25.01	25.07	25.03	26	0		
10	QPSK	1	48	25.05	25.08	25.04	26	0		
10	QPSK	1	96	25.06	25.04	25.05	26	0		
10	QPSK	25	0	22.46	22.47	22.37	24	1		
10	QPSK	25	12	22.55	22.54	22.55	24	1		
10	QPSK	50	0	22.57	22.51	22.58	24	1		



Reduced Power level 1 for Head – UAT

GSM850 TX Channel Frequency (MHz)	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame Average Power (dBm)			Tune-up Limit (dBm)
	126	189	251		126	189	251	
	854.4	858.4	868.8		854.2	858.4	868.8	
GSM 1 Tx slot	30.30	30.39	30.62	31.00	21.30	21.30	21.62	22.00
GPRS 1 Tx slot	30.38	30.28	30.58	31.00	21.38	21.28	21.58	22.00
GPRS 2 Tx slots	27.72	27.30	27.80	28.50	21.22	21.30	21.60	22.50
GPRS 3 Tx slots	25.70	25.80	25.78	27.00	21.44	21.54	21.52	22.74
GPRS 4 Tx slots	24.25	24.22	24.31	25.50	21.25	21.22	21.31	22.50
EDGE 1 Tx slot	25.62	25.73	25.51	27.50	18.82	18.73	18.51	18.50
EDGE 2 Tx slots	23.92	24.08	23.76	25.50	17.92	18.08	17.76	19.50
EDGE 3 Tx slots	22.67	22.63	22.69	24.50	18.41	18.37	18.43	20.24
EDGE 4 Tx slots	22.27	22.24	22.40	24.00	18.27	18.24	18.40	21.00

GSM1900 TX Channel Frequency (MHz)	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame Average Power (dBm)			Tune-up Limit (dBm)
	512	661	810		512	661	810	
	1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM 1 Tx slot	22.86	22.72	22.88	23.10	13.86	13.72	13.88	14.10
GPRS 1 Tx slot	22.51	22.42	22.66	23.10	13.51	13.42	13.66	14.10
GPRS 2 Tx slots	19.64	19.80	19.51	20.60	13.64	13.80	13.51	14.60
GPRS 3 Tx slots	18.36	18.30	18.21	19.60	14.10	14.04	13.95	15.34
GPRS 4 Tx slots	16.80	16.86	16.76	18.10	13.80	13.86	13.76	15.10
EDGE 1 Tx slot	22.59	22.66	22.61	24.00	13.59	13.66	13.61	15.00
EDGE 2 Tx slots	19.50	19.59	19.57	21.00	13.50	13.59	13.57	15.00
EDGE 3 Tx slots	17.50	17.88	17.50	19.00	13.24	13.62	13.24	14.74
EDGE 4 Tx slots	16.60	16.50	16.50	18.00	13.60	13.50	13.50	15.00

Band TX Channel Frequency (MHz)	WCDMA II			Tune-up Limit (dBm)	WCDMA IV			WCDMA V			Tune-up Limit (dBm)	
	9262	8400	9538		1312	1413	1513	4132	4182	4233		
	8602	8600	8638		1337	1338	1338	4367	4407	4458		
	1852.4	1880	1907.6		1712.4	1732.6	1752.8	826.4	836.4	846.8		
3GPP Rel 98 AMR 12.2Kbps	13.59	13.63	13.62	14.00	15.62	15.54	15.51	16.70	22.00	22.11	22.05	22.60
3GPP Rel 99 RMC 12.2Kbps	13.60	13.68	13.67	14.90	15.67	15.58	15.55	16.70	22.01	22.13	22.06	22.60
3GPP Rel 6 HSDPA Subtest-1	12.57	12.63	12.69	13.90	14.44	14.52	14.61	15.70	21.03	20.92	20.96	21.60
3GPP Rel 6 HSDPA Subtest-2	12.55	12.67	12.69	13.90	14.41	14.47	14.58	15.70	21.03	20.93	20.96	21.60
3GPP Rel 6 HSDPA Subtest-3	12.11	12.15	12.16	13.40	13.91	13.99	14.09	15.20	20.55	20.51	20.49	21.10
3GPP Rel 6 HSDPA Subtest-4	12.05	12.18	12.14	13.40	13.92	13.94	14.08	15.20	20.44	20.43	20.49	21.10
3GPP Rel 6 DC-HSDPA Subtest-1	12.47	12.62	12.61	13.90	14.43	14.49	14.55	15.70	21.02	20.94	20.93	21.60
3GPP Rel 6 DC-HSDPA Subtest-2	12.52	12.63	12.63	13.90	14.00	14.42	14.52	15.70	21.00	20.91	20.92	21.60
3GPP Rel 6 DC-HSDPA Subtest-3	12.14	12.11	12.13	13.40	13.90	13.94	14.03	15.20	20.53	20.46	20.45	21.10
3GPP Rel 6 DC-HSDPA Subtest-4	12.02	12.14	12.09	13.40	13.89	13.92	14.02	15.20	20.42	20.41	20.43	21.10
3GPP Rel 6 HSUPA Subtest-1	12.43	12.62	12.63	13.90	14.15	14.34	14.46	15.70	20.81	21.07	20.97	21.60
3GPP Rel 6 HSUPA Subtest-2	10.49	10.65	10.67	11.90	12.24	12.32	12.48	13.70	18.77	18.92	18.92	19.60
3GPP Rel 6 HSUPA Subtest-3	11.52	11.60	11.65	12.90	13.18	13.37	13.49	14.70	19.53	19.60	19.92	20.60
3GPP Rel 6 HSUPA Subtest-4	10.48	10.67	10.69	11.90	12.02	12.31	12.49	13.70	18.97	18.95	18.94	19.60
3GPP Rel 6 HSUPA Subtest-5	12.52	12.59	12.68	13.90	13.92	14.34	13.95	15.70	20.82	21.03	20.95	21.60
3GPP Rel 7 HSPA+ (16QAM) Subtest-1	10.44	10.53	10.67	11.90	11.93	12.25	11.99	13.70	18.38	18.57	18.62	19.60



Band 2 (1900MHz Band) Part 24E									
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch./Freq.	Power High Ch./Freq.	Power High Ch./Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel									
Frequency (MHz)									
20	QPSK	1	0	12.61	12.63	12.70			
20	QPSK	1	49	12.63	12.63	12.73	13.8	0	
20	QPSK	1	99	12.42	12.42	12.58			
20	QPSK	50	0	12.54	12.69	12.55			
20	QPSK	50	24	12.71	12.82	12.80			
20	QPSK	50	50	12.64	12.67	12.77	13.8	0	
20	QPSK	100	0	12.68	12.78	12.71			
20	16QAM	1	0	12.56	12.64	12.66			
20	16QAM	1	49	12.56	12.67	12.61	13.8	0	
20	16QAM	1	99	12.63	12.84	12.82			
20	16QAM	50	0	12.51	12.56	12.54			
20	16QAM	50	24	12.45	12.55	12.51	13.8	0	
20	16QAM	50	50	12.45	12.50	12.48			
20	16QAM	100	0	12.49	12.51	12.49			
20	84QAM	1	0	12.56	12.62	12.60			
20	84QAM	1	49	12.52	12.60	12.53	13.8	0	
20	84QAM	1	99	12.45	12.57	12.48			
20	84QAM	50	0	12.41	12.49	12.42			
20	84QAM	50	24	12.47	12.48	12.41	13.8	0	
20	84QAM	50	50	12.41	12.46	12.37			
20	84QAM	100	0	12.47	12.47	12.39			
Channel									
Frequency (MHz)									
15	QPSK	1	0	12.51	12.80	12.55			
15	QPSK	1	37	12.43	12.54	12.54	13.8	0	
15	QPSK	1	74	12.38	12.47	12.52			
15	QPSK	36	0	12.60	12.60	12.75			
15	QPSK	36	20	12.57	12.61	12.76	13.8	0	
15	QPSK	36	39	12.54	12.58	12.72			
15	QPSK	75	0	12.56	12.60	12.72			
15	16QAM	1	0	12.77	12.71	12.83			
15	16QAM	1	37	12.54	12.72	12.72	13.8	0	
15	16QAM	1	74	12.62	12.77	12.76			
15	16QAM	36	0	12.46	12.59	12.55			
15	16QAM	36	20	12.61	12.64	12.77	13.8	0	
15	16QAM	36	39	12.57	12.62	12.72			
15	16QAM	75	0	12.63	12.63	12.76			
15	84QAM	1	0	12.65	12.69	12.69			
15	84QAM	1	37	12.63	12.76	12.77	13.8	0	
15	84QAM	1	74	12.59	12.61	12.67			
15	84QAM	36	0	12.59	12.65	12.73			
15	84QAM	36	20	12.57	12.60	12.71	13.8	0	
15	84QAM	36	39	12.54	12.57	12.64			
15	84QAM	75	0	12.53	12.57	12.64			
Channel									
Frequency (MHz)									
10	QPSK	1	0	12.55	12.60	12.61			
10	QPSK	1	25	12.46	12.55	12.55	13.8	0	
10	QPSK	1	49	12.37	12.49	12.50			
10	QPSK	25	0	12.56	12.54	12.69			
10	QPSK	25	12	12.52	12.53	12.67	13.8	0	
10	QPSK	25	25	12.45	12.50	12.61			
10	QPSK	50	0	12.53	12.50	12.63			
10	16QAM	1	0	12.60	12.61	12.72			
10	16QAM	1	25	12.65	12.76	12.79	13.8	0	
10	16QAM	1	49	12.61	12.76	12.81			
10	16QAM	25	0	12.59	12.59	12.72			
10	16QAM	25	12	12.58	12.57	12.72	13.8	0	
10	16QAM	25	25	12.49	12.52	12.62			
10	16QAM	50	0	12.56	12.66	12.66			
10	84QAM	1	0	12.65	12.56	12.71			
10	84QAM	1	25	12.63	12.55	12.61	13.8	0	
10	84QAM	1	49	12.51	12.54	12.62			
10	84QAM	25	0	12.58	12.56	12.66			
10	84QAM	25	12	12.55	12.56	12.64	13.8	0	
10	84QAM	25	25	12.45	12.44	12.53			
10	84QAM	50	0	12.53	12.53	12.55			
Channel									
Frequency (MHz)									
5	QPSK	1	0	12.53	12.54	12.62			
5	QPSK	1	12	12.51	12.50	12.54	13.8	0	
5	QPSK	1	24	12.38	12.51	12.51			
5	QPSK	12	0	12.63	12.60	12.71			
5	QPSK	12	13	12.58	12.65	12.68	13.8	0	
5	QPSK	25	0	12.56	12.57	12.64			
5	16QAM	1	0	12.82	12.73	12.83			
5	16QAM	1	12	12.76	12.70	12.78	13.8	0	
5	16QAM	1	24	12.70	12.80	12.77			
5	16QAM	12	0	12.62	12.60	12.69			
5	16QAM	12	7	12.56	12.63	12.63	13.8	0	
5	16QAM	12	13	12.47	12.55	12.61			
5	16QAM	25	0	12.53	12.55	12.63			
5	84QAM	1	0	12.68	12.60	12.65			
5	84QAM	1	12	12.53	12.64	12.63	13.8	0	
5	84QAM	1	24	12.50	12.58	12.58			
5	84QAM	12	0	12.63	12.57	12.63			
5	84QAM	12	7	12.59	12.63	12.61	13.8	0	
5	84QAM	12	13	12.48	12.57	12.51			
5	84QAM	25	0	12.49	12.49	12.52			
Channel									
Frequency (MHz)									
3	QPSK	1	0	12.48	12.53	12.55			
3	QPSK	1	14	12.40	12.46	12.44	13.8	0	
3	QPSK	8	0	12.52	12.56	12.61			
3	QPSK	8	4	12.45	12.55	12.58	13.8	0	
3	QPSK	8	7	12.40	12.45	12.51			
3	QPSK	15	0	12.42	12.48	12.55			
3	16QAM	1	0	12.70	12.79	12.81			
3	16QAM	1	8	12.62	12.71	12.68	13.8	0	
3	16QAM	1	14	12.58	12.61	12.70			
3	16QAM	8	0	12.52	12.60	12.60			
3	16QAM	8	4	12.48	12.54	12.58	13.8	0	
3	16QAM	8	7	12.40	12.50	12.51			
3	16QAM	15	0	12.44	12.53	12.52			
3	84QAM	1	0	12.64	12.56	12.62			
3	84QAM	1	8	12.45	12.60	12.55	13.8	0	
3	84QAM	1	14	12.40	12.49	12.51			
3	84QAM	8	0	12.49	12.49	12.54			
3	84QAM	8	4	12.46	12.52	12.50	13.8	0	
3	84QAM	8	7	12.39	12.45	12.46			
3	84QAM	15	0	12.43	12.39	12.47			
Channel									
Frequency (MHz)									
1.4	QPSK	1	0	12.45	12.50	12.52			
1.4	QPSK	1	3	12.37	12.43	12.41	13.8	0	
1.4	QPSK	1	5	12.24	12.36	12.37			
1.4	QPSK	3	0	12.49	12.53	12.56			
1.4	QPSK	3	1	12.42	12.52	12.55	13.8	0	
1.4	QPSK	3	3	12.37	12.42	12.48			
1.4	QPSK	6	0	12.39	12.45	12.52	13.8	0	
1.4	16QAM	1	0	12.67	12.76	12.78			
1.4	16QAM	1	3	12.59	12.68	12.65			
1.4	16QAM	1	5	12.55	12.58	12.67	13.8	0	
1.4	16QAM	3	0	12.49	12.57	12.57			
1.4	16QAM	3	1	12.45	12.51	12.55			
1.4	16QAM	3	3	12.37	12.47	12.48	13.8	0	
1.4	16QAM	6	0	12.41	12.50	12.49			
1.4	84QAM	1	0	12.61	12.53	12.59			
1.4	84QAM	1	3	12.42	12.57	12.52	13.8	0	
1.4	84QAM	1	12	12.37	12.46	12.48			
1.4	84QAM	3	0	12.46	12.46	12.51			
1.4	84QAM	3	1	12.43	12.49	12.47	13.8	0	
1.4	84QAM	3	3	12.36	12.42	12.43			
1.4	84QAM	6	0	12.40	12.36	12.44	13.8	0	

Band 4 (AWS Band) Part 27L (only on channel required)									
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch./Freq.	Power High Ch./Freq.	Power High Ch./Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel									
Frequency (MHz)									
20	QPSK	1	0	13.76	13.72	13.66			
20	QPSK	1	49	13.81	13.66	13.61	14.5	0	
20	QPSK	1	99	13.82	13.49	13.42			
20	QPSK	50	0	13.72	13.65	13.66			
20	QPSK	50	24	13.73	13.66	13.63			
20	QPSK	50	50	13.62	13.62	13.52	14.5	0	
20	QPSK	100	0	13.65	13.58	13.51			</



Band 7 (2600MHz Band) Part 27									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				20850	21100	21350			
Frequency (MHz)				2510	2535	2560			
20	QPSK	1	0	16.31	16.30	16.49			
20	QPSK	1	49	16.27	16.47	16.48	17.2	0	
20	QPSK	1	99	16.31	16.52	16.48			
20	QPSK	50	0	16.15	16.20	16.34			
20	QPSK	50	24	16.25	16.45	16.38	17.2	0	
20	QPSK	50	50	16.20	16.38	16.35			
20	QPSK	100	0	16.18	16.34	16.31			
20	16QAM	1	0	16.05	16.32	16.31			
20	16QAM	1	49	16.12	16.31	16.20	17.2	0	
20	16QAM	1	99	16.06	16.28	16.22			
20	16QAM	50	0	15.94	16.04	16.18			
20	16QAM	50	24	15.95	16.13	16.21	17.2	0	
20	16QAM	50	50	15.98	16.23	16.21			
20	16QAM	100	0	15.98	16.17	16.16			
20	64QAM	1	0	15.94	16.10	16.16			
20	64QAM	1	49	15.92	16.32	16.22	17.2	0	
20	64QAM	1	99	16.06	16.29	16.27			
20	64QAM	50	0	15.97	16.24	16.18			
20	64QAM	50	24	16.01	16.13	16.20	17.2	0	
20	64QAM	50	50	16.02	16.20	16.21			
20	64QAM	100	0	16.10	16.25	16.34			
Channel				20826	21100	21376	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2507.5	2535	2562.5			
15	QPSK	1	0	16.00	16.11	16.27			
15	QPSK	1	37	16.05	16.22	16.28	17.2	0	
15	QPSK	1	74	16.08	16.30	16.26			
15	QPSK	36	0	16.14	16.28	16.42			
15	QPSK	36	20	16.21	16.32	16.40	17.2	0	
15	QPSK	36	39	16.23	16.44	16.45			
15	QPSK	75	0	16.23	16.29	16.37			
15	16QAM	1	0	16.34	16.42	16.50			
15	16QAM	1	37	16.35	16.50	16.44	17.2	0	
15	16QAM	1	74	16.39	16.44	16.45			
15	16QAM	36	0	16.10	16.26	16.40			
15	16QAM	36	20	16.16	16.37	16.47	17.2	0	
15	16QAM	36	39	16.22	16.39	16.46			
15	16QAM	75	0	16.19	16.31	16.38			
15	64QAM	1	0	16.20	16.28	16.44			
15	64QAM	1	37	16.22	16.43	16.47	17.2	0	
15	64QAM	1	74	16.29	16.44	16.47			
15	64QAM	36	0	16.15	16.37	16.42			
15	64QAM	36	20	16.22	16.35	16.45	17.2	0	
15	64QAM	36	39	16.25	16.42	16.47			
15	64QAM	75	0	16.20	16.30	16.40			
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2505	2535	2565			
10	QPSK	1	0	16.16	16.21	16.37			
10	QPSK	1	25	16.22	16.30	16.37	17.2	0	
10	QPSK	1	49	16.19	16.34	16.40			
10	QPSK	25	0	16.26	16.33	16.36			
10	QPSK	25	12	16.24	16.37	16.40	17.2	0	
10	QPSK	25	25	16.25	16.41	16.46			
10	QPSK	50	0	16.19	16.33	16.35			
10	16QAM	1	0	16.23	16.34	16.40			
10	16QAM	1	25	16.14	16.40	16.45	17.2	0	
10	16QAM	1	49	16.25	16.48	16.48			
10	16QAM	25	0	16.06	16.14	16.22			
10	16QAM	25	12	16.09	16.23	16.25	17.2	0	
10	16QAM	25	25	16.04	16.22	16.26			
10	16QAM	50	0	16.05	16.15	16.20			
10	64QAM	1	0	16.12	16.25	16.25			
10	64QAM	1	25	16.05	16.28	16.39	17.2	0	
10	64QAM	1	49	16.12	16.42	16.40			
10	64QAM	25	0	16.07	16.11	16.25			
10	64QAM	25	12	16.06	16.19	16.26	17.2	0	
10	64QAM	25	25	16.06	16.25	16.27			
10	64QAM	50	0	16.33	16.45	16.51			
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2502.5	2535	2567.5			
5	QPSK	1	0	16.00	16.00	16.15			
5	QPSK	1	12	15.97	16.07	16.20	17.2	0	
5	QPSK	1	24	15.99	16.10	16.13			
5	QPSK	12	0	16.00	16.04	16.16			
5	QPSK	12	7	16.07	16.11	16.24	17.2	0	
5	QPSK	12	13	16.08	16.27	16.24			
5	QPSK	25	0	16.05	16.10	16.20			
5	16QAM	1	0	16.30	16.38	16.49			
5	16QAM	1	12	16.29	16.45	16.47	17.2	0	
5	16QAM	1	24	16.34	16.45	16.43			
5	16QAM	12	0	16.01	16.08	16.22			
5	16QAM	12	7	16.10	16.15	16.26	17.2	0	
5	16QAM	12	13	16.10	16.23	16.28			
5	16QAM	25	0	16.09	16.16	16.24			
5	64QAM	1	0	16.20	16.25	16.39			
5	64QAM	1	12	16.24	16.36	16.38	17.2	0	
5	64QAM	1	24	16.25	16.35	16.39			
5	64QAM	12	0	16.05	16.11	16.24			
5	64QAM	12	7	16.16	16.25	16.33	17.2	0	
5	64QAM	12	13	16.13	16.30	16.36			
5	64QAM	25	0	16.07	16.18	16.26			

Band 12 (700MHz Low Band) Part 27F(only on channel required)									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				23060	23095	23130			
Frequency (MHz)				704	707.5	711			
10	QPSK	1	0	22.50	22.60	22.48			
10	QPSK	1	25	22.46	22.53	22.43	23.5	0	
10	QPSK	1	49	22.45	22.42	22.47			
10	QPSK	25	0	22.49	22.58	22.47			
10	QPSK	25	12	22.44	22.48	22.40	23.5	0	
10	QPSK	25	25	22.41	22.45	22.36			
10	QPSK	50	0	22.38	22.55	22.33			
10	16QAM	1	0	22.33	22.36	22.25			
10	16QAM	1	25	22.33	22.36	22.27	23.5	0	
10	16QAM	1	49	22.37	22.37	22.33			
10	16QAM	25	0	22.03	22.09	22.01			
10	16QAM	25	12	22.14	22.16	22.12	23	0.5	
10	16QAM	25	25	22.13	22.17	22.07			
10	16QAM	50	0	22.13	22.15	22.07			
10	64QAM	1	0	22.08	22.17	22.08			
10	64QAM	1	25	22.15	22.16	22.13	23	0.5	
10	64QAM	1	49	22.12	22.18	22.04			
10	64QAM	25	0	21.06	21.16	21.04			
10	64QAM	25	12	21.17	21.19	21.15	22	1.5	
10	64QAM	25	25	21.12	21.16	21.11			
10	64QAM	50	0	21.12	21.03	21.14			
Channel				23035	23095	23155	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				701.5	707.5	713.5			
5	QPSK	1	0	22.32	22.30	22.40			
5	QPSK	1	12	22.40	22.40	22.43	23.5	0	
5	QPSK	1	24	22.40	22.36	22.38			
5	QPSK	12	0	22.47	22.43	22.44			
5	QPSK	12	7	22.46	22.46	22.50	23.5	0	
5	QPSK	12	13	22.45	22.48	22.51			
5	QPSK	25	0	22.46	22.40	22.48			
5	16QAM	1	0	22.35	22.36	22.51			
5	16QAM	1	12	22.41	22.46	22.48	23.5	0	
5	16QAM	1	24	22.50	22.54	22.49			
5	16QAM	12	0	22.03	22.06	22.00			
5	16QAM	12	7	22.03	21.99	22.03	23	0.5	
5	16QAM	12	13	22.02	22.01	22.04			
5	16QAM	25	0	22.01	21.96	22.00			
5	16QAM	25	12	22.10	22.04	22.12	23	0.5	
5	16QAM	25	25	22.12	22.17	22.14			
5	64QAM	1	0	22.08	22.19	22.14			
5	64QAM	1	24	22.08	22.19	22.14	23	0.5	
5	64QAM	12	0	21.08	21.01	21.04			
5	64QAM	12	7						



Band 17 (700MHz Band) Part 27H(only on channel required)									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel									
Frequency (MHz)				23780	23790	23800			
Frequency (MHz)				709	710	711			
10	QPSK	1	0	22.26	22.46	22.36			
10	QPSK	1	25	22.46	22.36	22.36	23.5	0	
10	QPSK	1	49	22.49	22.47	22.48			
10	QPSK	25	0	22.38	22.38	22.41			
10	QPSK	25	12	22.44	22.40	22.44	23.5	0	
10	QPSK	25	25	22.49	22.48	22.45			
10	QPSK	50	0	22.44	22.42	22.40			
10	16QAM	1	0	22.40	22.33	22.29			
10	16QAM	1	25	22.45	22.54	22.45	23.5	0	
10	16QAM	1	49	22.31	22.30	22.50			
10	16QAM	25	0	22.02	22.06	22.06			
10	16QAM	25	12	22.15	22.06	22.05	23	0.5	
10	16QAM	25	25	22.06	22.04	22.06			
10	16QAM	50	0	22.08	21.99	22.02			
10	64QAM	1	0	22.17	22.06	22.14			
10	64QAM	1	25	22.22	22.13	22.23	23	0.5	
10	64QAM	1	49	22.27	22.23	22.24			
10	64QAM	25	0	21.05	21.06	21.06			
10	64QAM	25	12	21.12	21.04	21.10	22	1.5	
10	64QAM	25	25	21.07	21.11	21.13			
10	64QAM	50	0	21.10	21.04	21.01			
Channel									
Frequency (MHz)				23756	23790	23826			
Frequency (MHz)				705.5	710	713.5			
5	QPSK	1	0	22.38	22.40	22.47			
5	QPSK	1	12	22.34	22.43	22.41	23.5	0	
5	QPSK	1	24	22.34	22.41	22.40			
5	QPSK	12	0	22.47	22.49	22.52			
5	QPSK	12	7	22.32	22.50	22.52	23.5	0	
5	QPSK	12	13	22.43	22.49	22.51			
5	QPSK	25	0	22.47	22.44	22.52			
5	16QAM	1	0	22.47	22.43	22.55			
5	16QAM	1	12	22.38	22.40	22.47	23.5	0	
5	16QAM	1	24	22.46	22.46	22.44			
5	16QAM	12	0	21.98	22.00	22.02			
5	16QAM	12	7	22.02	21.98	22.04	23	0.5	
5	16QAM	12	13	22.00	21.98	22.02			
5	16QAM	25	0	22.00	21.99	21.98			
5	64QAM	1	0	22.10	22.16	22.21			
5	64QAM	1	12	22.09	22.18	22.17	23	0.5	
5	64QAM	1	24	22.15	22.12	22.18			
5	64QAM	12	0	21.02	21.05	21.10			
5	64QAM	12	7	21.03	21.12	21.13	22	1.5	
5	64QAM	12	13	21.01	21.07	21.06			
5	64QAM	25	0	21.04	20.97	21.03			

Band 25 (1900MHz Band) Part 24E									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel									
Frequency (MHz)				26140	26340	26590			
Frequency (MHz)				1860	1880	1905			
20	QPSK	1	0	12.80	12.86	12.95			
20	QPSK	1	49	12.83	12.87	12.89	13.8	0	
20	QPSK	1	99	12.83	12.86	12.89			
20	QPSK	50	0	12.72	12.65	12.80			
20	QPSK	50	24	12.68	12.76	12.82	13.8	0	
20	QPSK	50	50	12.64	12.67	12.73			
20	QPSK	100	0	12.64	12.63	12.76			
20	16QAM	1	0	12.76	12.73	12.75			
20	16QAM	1	49	12.55	12.60	12.62	13.8	0	
20	16QAM	1	99	12.78	12.78	12.79			
20	16QAM	50	0	12.61	12.69	12.72			
20	16QAM	50	24	12.62	12.70	12.71	13.8	0	
20	16QAM	50	50	12.63	12.64	12.66			
20	16QAM	100	0	12.60	12.63	12.69			
20	64QAM	1	0	12.72	12.65	12.69			
20	64QAM	1	49	12.64	12.66	12.73	13.8	0	
20	64QAM	1	99	12.51	12.72	12.59			
20	64QAM	50	0	12.68	12.64	12.65			
20	64QAM	50	24	12.67	12.64	12.71	13.8	0	
20	64QAM	50	50	12.60	12.68	12.63			
20	64QAM	100	0	12.64	12.63	12.65			
Channel									
Frequency (MHz)				26115	26340	26615			
Frequency (MHz)				1857.5	1880	1907.5			
15	QPSK	1	0	12.73	12.66	12.69			
15	QPSK	1	37	12.58	12.67	12.68	13.8	0	
15	QPSK	1	74	12.51	12.62	12.63			
15	QPSK	36	0	12.77	12.82	12.91			
15	QPSK	36	20	12.76	12.85	12.89	13.8	0	
15	QPSK	36	39	12.72	12.85	12.82			
15	QPSK	75	0	12.76	12.82	12.86			
15	16QAM	1	0	12.88	12.84	12.90			
15	16QAM	1	37	12.70	12.76	12.71	13.8	0	
15	16QAM	1	74	12.70	12.78	12.78			
15	16QAM	36	0	12.78	12.85	12.89			
15	16QAM	36	20	12.78	12.85	12.85	13.8	0	
15	16QAM	36	39	12.74	12.85	12.85			
15	16QAM	75	0	12.79	12.85	12.87			
15	64QAM	1	0	12.88	12.83	12.86			
15	64QAM	1	37	12.71	12.88	12.89	13.8	0	
15	64QAM	1	74	12.90	12.81	12.83			
15	64QAM	36	0	12.78	12.76	12.78			
15	64QAM	36	20	12.78	12.84	12.79	13.8	0	
15	64QAM	36	39	12.76	12.84	12.87			
15	64QAM	75	0	12.74	12.80	12.79			
Channel									
Frequency (MHz)				26090	26340	26640			
Frequency (MHz)				1855	1880	1910			
10	QPSK	1	0	12.61	12.64	12.70			
10	QPSK	1	25	12.55	12.56	12.61	13.8	0	
10	QPSK	1	49	12.45	12.52	12.66			
10	QPSK	25	0	12.66	12.70	12.73			
10	QPSK	25	12	12.64	12.72	12.72	13.8	0	
10	QPSK	25	25	12.57	12.67	12.72			
10	QPSK	50	0	12.63	12.69	12.68			
10	16QAM	1	0	12.89	12.81	12.91			
10	16QAM	1	25	12.82	12.90	12.84	13.8	0	
10	16QAM	1	49	12.81	12.88	12.87			
10	16QAM	25	0	12.73	12.75	12.74			
10	16QAM	25	12	12.71	12.82	12.78	13.8	0	
10	16QAM	25	25	12.66	12.73	12.77			
10	16QAM	50	0	12.70	12.76	12.76			
10	16QAM	50	1	12.70	12.67	12.73	13.8	0	
10	64QAM	1	0	12.72	12.74	12.76			
10	64QAM	1	25	12.72	12.74	12.76	13.8	0	
10	64QAM	1	49	12.60	12.75	12.76			
10	64QAM	25	0	12.67	12.63	12.69			
10	64QAM	25	12	12.66	12.70	12.76	13.8	0	
10	64QAM	25	25	12.58	12.69	12.71			
10	64QAM	50	0	12.65	12.73	12.66			
Channel									
Frequency (MHz)				26055	26340	26655			
Frequency (MHz)				1852.5	1880	1912.5			
5	QPSK	1	0	12.68	12.66	12.64			
5	QPSK	1	12	12.56	12.60	12.64	13.8	0	
5	QPSK	1	24	12.61	12.63	12.63			
5	QPSK	12	0	12.69	12.72	12.71			
5	QPSK	12	7	12.63	12.68	12.69	13.8	0	
5	QPSK	12	13	12.61	12.67	12.69			
5	QPSK	25	0	12.69	12.70	12.69			
5	16QAM	1	0	12.76	12.75	12.67			
5	16QAM	1	12	12.56	12.66	12.61	13.8	0	
5	16QAM	1	24	12.68	12.78	12.84			
5	16QAM	12	0	12.72	12.74	12.73			
5	16QAM	12	7	12.70	12.76	12.70	13.8	0	
5	16QAM	12	13	12.68	12.78	12.71			
5	16QAM	25	0	12.69	12.75	12.70			
5	64QAM	1	0	12.77	12.81	12.78			
5	64QAM	1	12	12.69	12.71	12.77	13.8	0	
5	64QAM	1	24	12.70	12.76	12.79			
5	64								



Band 66									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq	Power Middle Ch. / Freq	Power High Ch. / Freq	Tune-up limit (dBm)	MPR (dB)	
Channel				132072	132322	132572			
Frequency (MHz)				1720	1745	1770			
20	QPSK	1	0	13.81	13.71	13.64	14.5	0	
20	QPSK	1	49	13.39	13.36	13.88			
20	QPSK	1	89	13.84	13.71	13.66			
20	QPSK	50	0	13.79	13.74	13.62	14.5	0	
20	QPSK	50	24	13.81	13.75	13.66			
20	QPSK	50	50	13.83	13.80	13.60			
20	QPSK	100	0	13.77	13.72	13.59	14.5	0	
20	16QAM	1	0	13.74	13.72	13.67			
20	16QAM	1	49	13.76	13.75	13.67			
20	16QAM	1	89	13.82	13.73	13.63	14.5	0	
20	16QAM	50	0	13.61	13.45	13.36			
20	16QAM	50	24	13.62	13.48	13.38			
20	16QAM	50	50	13.64	13.51	13.50	14.5	0	
20	16QAM	100	0	13.61	13.41	13.53			
20	64QAM	1	0	13.69	13.54	13.75			
20	64QAM	1	49	13.70	13.56	13.73	14.5	0	
20	64QAM	1	89	13.74	13.64	13.66			
20	64QAM	50	0	13.65	13.46	13.58			
20	64QAM	50	24	13.65	13.49	13.62	14.5	0	
20	64QAM	50	50	13.63	13.52	13.62			
20	64QAM	100	0	13.62	13.46	13.54			
Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1717.5	1745	1772.5			
15	QPSK	1	0	13.46	13.65	13.95	14.5	0	
15	QPSK	1	37	13.49	13.69	13.97			
15	QPSK	1	74	13.51	13.66	13.90			
15	QPSK	36	0	13.66	13.80	13.97	14.5	0	
15	QPSK	36	20	13.67	13.83	13.92			
15	QPSK	36	39	13.65	13.83	13.90			
15	QPSK	75	0	13.61	13.79	13.96	14.5	0	
15	16QAM	1	0	13.52	13.74	13.93			
15	16QAM	1	37	13.48	13.78	13.93			
15	16QAM	1	74	13.50	13.69	13.85	14.5	0	
15	16QAM	36	0	13.32	13.40	13.59			
15	16QAM	36	20	13.33	13.47	13.65			
15	16QAM	36	39	13.31	13.49	13.66	14.5	0	
15	16QAM	75	0	13.33	13.45	13.62			
15	64QAM	1	0	13.36	13.58	13.76			
15	64QAM	1	37	13.50	13.58	13.89	14.5	0	
15	64QAM	1	74	13.49	13.53	13.79			
15	64QAM	36	0	13.36	13.49	13.69			
15	64QAM	36	20	13.36	13.47	13.69	14.5	0	
15	64QAM	36	39	13.36	13.52	13.72			
15	64QAM	75	0	13.32	13.47	13.66			
Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1715	1745	1775			
10	QPSK	1	0	13.39	13.62	13.89	14.5	0	
10	QPSK	1	25	13.46	13.58	13.82			
10	QPSK	1	49	13.38	13.58	13.74			
10	QPSK	25	0	13.49	13.68	13.93	14.5	0	
10	QPSK	25	12	13.50	13.71	13.95			
10	QPSK	25	25	13.51	13.67	13.88			
10	QPSK	50	0	13.48	13.64	13.91	14.5	0	
10	16QAM	1	0	13.38	13.81	13.95			
10	16QAM	1	25	13.59	13.71	13.91			
10	16QAM	1	49	13.62	13.81	13.92	14.5	0	
10	16QAM	25	0	13.42	13.55	13.86			
10	16QAM	25	12	13.45	13.60	13.84			
10	16QAM	25	25	13.43	13.62	13.78	14.5	0	
10	16QAM	50	0	13.41	13.55	13.83			
10	64QAM	1	0	13.47	13.64	13.90			
10	64QAM	1	25	13.55	13.73	13.91	14.5	0	
10	64QAM	1	49	13.56	13.68	13.88			
10	64QAM	25	0	13.46	13.60	13.89			
10	64QAM	25	12	13.46	13.59	13.85	14.5	0	
10	64QAM	25	25	13.44	13.84	13.81			
10	64QAM	50	0	13.41	13.63	13.80			
Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1712.5	1745	1777.5			
5	QPSK	1	0	13.43	13.59	13.88	14.5	0	
5	QPSK	1	12	13.37	13.64	13.82			
5	QPSK	1	24	13.40	13.59	13.80			
5	QPSK	12	0	13.48	13.68	13.90	14.5	0	
5	QPSK	12	7	13.50	13.69	13.90			
5	QPSK	12	13	13.45	13.66	13.90			
5	QPSK	25	0	13.46	13.64	13.85	14.5	0	
5	16QAM	1	0	13.66	13.82	13.88			
5	16QAM	1	12	13.53	13.74	13.75			
5	16QAM	1	24	13.60	13.81	13.76	14.5	0	
5	16QAM	12	0	13.38	13.56	13.80			
5	16QAM	12	7	13.40	13.63	13.80			
5	16QAM	12	13	13.36	13.59	13.80	14.5	0	
5	16QAM	25	0	13.35	13.53	13.81			
5	64QAM	1	0	13.51	13.74	13.96			
5	64QAM	1	12	13.55	13.76	13.88	14.5	0	
5	64QAM	1	24	13.52	13.73	13.90			
5	64QAM	12	0	13.46	13.61	13.87			
5	64QAM	12	7	13.47	13.69	13.86	14.5	0	
5	64QAM	12	13	13.43	13.68	13.82			
5	64QAM	25	0	13.39	13.54	13.80			
Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1711.5	1745	1776.5			
3	QPSK	1	0	13.65	13.60	13.84	14.5	0	
3	QPSK	1	8	13.60	13.63	13.83			
3	QPSK	1	14	13.64	13.59	13.78			
3	QPSK	8	0	13.69	13.67	13.92	14.5	0	
3	QPSK	8	4	13.75	13.67	13.90			
3	QPSK	8	7	13.71	13.66	13.87			
3	QPSK	15	0	13.72	13.67	13.89	14.5	0	
3	16QAM	1	0	13.67	13.81	13.11			
3	16QAM	1	8	13.81	13.78	13.95			
3	16QAM	1	14	13.83	13.87	13.96	14.5	0	
3	16QAM	8	0	13.63	13.65	13.85			
3	16QAM	8	4	13.69	13.71	13.84			
3	16QAM	8	7	13.68	13.63	13.81	14.5	0	
3	16QAM	15	0	13.63	13.64	13.81			
3	64QAM	1	0	13.75	13.75	13.96			
3	64QAM	1	8	13.82	13.79	13.92	14.5	0	
3	64QAM	1	14	13.79	13.72	13.98			
3	64QAM	8	0	13.73	13.67	13.79			
3	64QAM	8	4	13.75	13.69	13.82	14.5	0	
3	64QAM	8	7	13.69	13.65	13.82			
3	64QAM	15	0	13.67	13.63	13.79			
Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1710.7	1745	1779.3			
1.4	QPSK	1	0	13.76	13.66	13.59	14.5	0	
1.4	QPSK	1	3	13.94	13.90	13.83			
1.4	QPSK	1	5	13.79	13.66	13.61			
1.4	QPSK	3	0	13.74	13.69	13.57	14.5	0	
1.4	QPSK	3	1	13.76	13.70	13.61			
1.4	QPSK	3	3	13.78	13.75	13.55			
1.4	QPSK	6	0	13.72	13.67	13.54	14.5	0	
1.4	16QAM	1	0	13.69	13.67	13.62			
1.4	16QAM	1	3	13.71	13.70	13.62			
1.4	16QAM	1	5	13.77	13.68	13.58	14.5	0	
1.4	16QAM	3	0	13.56	13.40	13.27			
1.4	16QAM	3	1	13.57	13.43	13.33			
1.4	16QAM	3	3	13.59	13.46	13.45	14.5	0	
1.4	16QAM	6	0	13.56	13.36	13.48			
1.4	64QAM	1	0	13.64	13.49	13.70			
1.4	64QAM	1	3	13.65	13.51	13.68	14.5	0	
1.4	64QAM	1	5	13.69	13.59	13.61			
1.4	64QAM	3	0	13.60	13.41	13.53			
1.4	64QAM	3	1	13.60	13.44	13.57	14.5	0	
1.4	64QAM	3	3	13.58	13.47	13.57			
1.4	64QAM	6	0	13.57	13.41	13.49			



Band 38(only on channel required)									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch / Freq	Power High Ch / Freq	Power Max Ch / Freq	Tune-up limit (dBm)	MFR (dB)	
Channel									
Frequency (MHz)									
20	QPSK	1	0	18.24	18.24	18.24	19.2	0	
20	QPSK	1	49	18.21	18.30	18.28	19.2	0	
20	QPSK	1	99	18.16	18.25	18.23	19.2	0	
20	QPSK	50	0	18.38	18.34	18.42	19.2	0	
20	QPSK	50	24	18.40	18.32	18.42	19.2	0	
20	QPSK	50	49	18.44	18.43	18.46	19.2	0	
20	QPSK	100	0	18.41	18.40	18.33	19.2	0	
20	HQAM	1	0	18.38	18.39	18.33	19.2	0	
20	HQAM	1	49	18.35	18.39	18.27	19.2	0	
20	HQAM	1	99	18.28	18.31	18.41	19.2	0	
20	HQAM	50	0	18.40	18.38	18.22	19.2	0	
20	HQAM	50	24	18.24	18.40	18.39	19.2	0	
20	HQAM	50	49	18.25	18.22	18.26	19.2	0	
20	HQAM	100	0	18.35	18.22	18.29	19.2	0	
20	HQAM	100	0	18.12	18.05	18.15	19.2	0	
20	HQAM	1	49	18.14	18.11	18.22	19.2	0	
20	HQAM	1	99	18.26	18.16	18.17	19.2	0	
20	HQAM	50	0	18.37	18.32	18.25	19.2	0	
20	HQAM	50	24	18.24	18.23	18.32	19.2	0	
20	HQAM	50	49	18.43	18.21	18.25	19.2	0	
20	HQAM	100	0	18.38	18.23	18.43	19.2	0	
Channel									
Frequency (MHz)									
15	QPSK	1	0	18.36	18.37	18.31	19.2	0	
15	QPSK	1	49	18.42	18.33	18.35	19.2	0	
15	QPSK	1	99	18.18	18.27	18.28	19.2	0	
15	QPSK	1	74	18.29	18.25	18.38	19.2	0	
15	QPSK	36	0	18.31	18.27	18.33	19.2	0	
15	QPSK	36	20	18.26	18.15	18.29	19.2	0	
15	QPSK	36	36	18.36	18.40	18.21	19.2	0	
15	QPSK	75	0	18.43	18.43	18.44	19.2	0	
15	HQAM	1	0	18.39	18.39	18.39	19.2	0	
15	HQAM	1	37	18.19	18.25	18.30	19.2	0	
15	HQAM	1	74	18.26	18.13	18.17	19.2	0	
15	HQAM	36	0	18.34	18.24	18.43	19.2	0	
15	HQAM	36	20	18.43	18.22	18.44	19.2	0	
15	HQAM	75	0	18.42	18.38	18.22	19.2	0	
15	HQAM	1	0	18.37	18.39	18.22	19.2	0	
15	HQAM	1	37	18.42	18.29	18.22	19.2	0	
15	HQAM	1	74	18.31	18.42	18.30	19.2	0	
15	HQAM	36	0	18.24	18.38	18.42	19.2	0	
15	HQAM	36	20	18.30	18.23	18.27	19.2	0	
15	HQAM	36	36	18.19	18.24	18.42	19.2	0	
15	HQAM	75	0	18.17	18.22	18.33	19.2	0	
Channel									
Frequency (MHz)									
10	QPSK	1	0	18.13	18.13	18.23	19.2	0	
10	QPSK	1	25	18.24	18.20	18.24	19.2	0	
10	QPSK	1	49	18.36	18.24	18.28	19.2	0	
10	QPSK	25	0	18.41	18.24	18.46	19.2	0	
10	QPSK	25	12	18.29	18.31	18.35	19.2	0	
10	QPSK	25	25	18.24	18.22	18.44	19.2	0	
10	QPSK	50	0	18.32	18.29	18.34	19.2	0	
10	HQAM	1	0	18.05	18.11	18.20	19.2	0	
10	HQAM	1	25	18.17	18.15	18.32	19.2	0	
10	HQAM	1	49	18.08	18.11	18.17	19.2	0	
10	HQAM	25	0	18.30	18.25	18.30	19.2	0	
10	HQAM	25	12	18.27	18.33	18.42	19.2	0	
10	HQAM	25	25	18.37	18.33	18.42	19.2	0	
10	HQAM	50	0	18.30	18.31	18.45	19.2	0	
10	HQAM	50	0	18.29	18.16	18.18	19.2	0	
10	HQAM	1	0	18.29	18.16	18.18	19.2	0	
10	HQAM	1	25	18.13	18.17	18.21	19.2	0	
10	HQAM	1	49	18.15	18.09	18.18	19.2	0	
10	HQAM	25	0	18.40	18.35	18.37	19.2	0	
10	HQAM	25	12	18.44	18.38	18.38	19.2	0	
10	HQAM	25	25	18.46	18.38	18.41	19.2	0	
10	HQAM	50	0	18.38	18.35	18.47	19.2	0	
Channel									
Frequency (MHz)									
5	QPSK	1	0	18.14	18.17	18.24	19.2	0	
5	QPSK	1	12	18.25	18.20	18.27	19.2	0	
5	QPSK	1	24	18.26	18.17	18.20	19.2	0	
5	QPSK	12	0	18.34	18.25	18.31	19.2	0	
5	QPSK	12	7	18.36	18.31	18.45	19.2	0	
5	QPSK	24	0	18.34	18.25	18.43	19.2	0	
5	QPSK	24	12	18.30	18.26	18.42	19.2	0	
5	HQAM	1	0	18.34	18.26	18.48	19.2	0	
5	HQAM	1	12	18.44	18.31	18.49	19.2	0	
5	HQAM	1	24	18.42	18.42	18.37	19.2	0	
5	HQAM	12	0	18.32	18.23	18.36	19.2	0	
5	HQAM	12	7	18.35	18.26	18.39	19.2	0	
5	HQAM	24	0	18.32	18.29	18.36	19.2	0	
5	HQAM	24	12	18.38	18.30	18.41	19.2	0	
5	HQAM	1	0	18.15	18.00	18.15	19.2	0	
5	HQAM	1	24	18.19	18.06	18.23	19.2	0	
5	HQAM	12	0	18.34	18.31	18.42	19.2	0	
5	HQAM	12	7	18.42	18.37	18.49	19.2	0	
5	HQAM	24	0	18.37	18.32	18.43	19.2	0	
5	HQAM	24	12	18.42	18.32	18.44	19.2	0	

Band 41 (2.6G Band)									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch / Freq	Power High Ch / Freq	Power Max Ch / Freq	Tune-up limit (dBm)	MFR (dB)	
Channel									
Frequency (MHz)									
20	QPSK	1	0	18.14	18.14	18.14	19.2	0	
20	QPSK	1	49	18.42	18.33	18.35	19.2	0	
20	QPSK	1	99	18.27	18.29	18.46	19.2	0	
20	QPSK	50	0	18.47	18.37	18.40	19.2	0	
20	QPSK	50	24	18.49	18.41	18.53	19.2	0	
20	QPSK	50	50	18.44	18.44	18.52	19.2	0	
20	QPSK	100	0	18.45	18.38	18.52	19.2	0	
20	HQAM	1	0	18.32	18.28	18.39	19.2	0	
20	HQAM	1	49	18.34	18.31	18.42	19.2	0	
20	HQAM	1	99	18.35	18.39	18.52	19.2	0	
20	HQAM	50	0	18.42	18.38	18.57	19.2	0	
20	HQAM	50	24	18.45	18.41	18.52	19.2	0	
20	HQAM	50	50	18.43	18.43	18.53	19.2	0	
20	HQAM	100	0	18.45	18.37	18.52	19.2	0	
20	HQAM	100	0	18.05	17.83	18.05	19.2	0	
20	HQAM	1	49	18.08	17.83	18.12	19.2	0	
20	HQAM	1	99	18.03	18.05	18.25	19.2	0	
20	HQAM	50	0	18.47	17.85	18.41	19.2	0	
20	HQAM	50	24	18.50	18.40	18.52	19.2	0	
20	HQAM	50	50	18.44	18.41	18.55	19.2	0	
20	HQAM	100	0	18.41	18.37	18.49	19.2	0	
Channel									
Frequency (MHz)									
15	QPSK	1	0	18.05	18.04	18.12	19.2	0	
15	QPSK	1	37	18.11	18.06	18.12	19.2	0	
15	QPSK	1	74	18.11	18.06	18.23	19.2	0	
15	QPSK	36	0	18.23	18.16	18.20	19.2	0	
15	QPSK	36	20	18.28	18.15	18.20	19.2	0	
15	QPSK	36	36	18.24	18.18	18.31	19.2	0	
15	QPSK	75	0	18.24	18.21	18.31	19.2	0	
15	HQAM	1	0	18.11	18.14	18.21	19.2	0	
15	HQAM	1	37	18.14	18.08	18.21	19.2	0	
15	HQAM	1	74	18.17	18.22	18.38	19.2	0	
15	HQAM	36	0	18.20	18.15	18.17	19.2	0	
15	HQAM	36	20	18.23	18.08	18.22	19.2	0	
15	HQAM	75	0	18.25	18.14	18.20	19.2	0	
15	HQAM	1	0	17.88	17.71	17.84	19.2	0	
15	HQAM	1	37	17.91	17.81	17.97	19.2	0	
15	HQAM	1	74	17.91	17.87	18.07	19.2	0	
15	HQAM	36	0	18.17	18.15	18.17	19.2	0	
15	HQAM	36	20	18.21	18.15	18.24	19.2	0	
15	HQAM	36	36	18.21	18.16	18.31	19.2	0	
15	HQAM	75	0	18.26	18.18	18.33	19.2	0	
Channel									
Frequency (MHz)									
10	QPSK	1	0	18.01	18.01				



Reduced Power level 2 for Head – UAT

GSM850 TX Channel Frequency (MHz)	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame Average Power (dBm)			Tune-up Limit (dBm)
	126	189	251		528	189	251	
	854.4	858.4	868.8		854.2	858.4	868.8	
GSM 1 Tx slot	29.01	29.11	29.32	30.50	20.01	20.11	20.32	21.50
GPRS 1 Tx slot	29.02	28.84	29.11	30.50	20.02	19.84	20.11	21.50
GPRS 2 Tx slots	29.92	28.49	28.80	27.50	20.92	20.49	20.80	21.50
GPRS 3 Tx slots	24.92	25.17	24.97	26.00	20.96	20.91	20.71	21.74
GPRS 4 Tx slots	23.84	23.77	24.13	24.50	20.84	20.77	21.13	21.50
EDGE 1 Tx slot	22.46	22.41	22.12	24.00	13.46	13.41	13.12	15.00
EDGE 2 Tx slots	20.95	20.75	20.22	22.00	14.95	14.75	14.22	16.00
EDGE 3 Tx slots	19.28	19.36	19.22	21.00	15.02	15.10	14.96	16.74
EDGE 4 Tx slots	18.82	18.69	18.66	20.50	15.82	15.69	15.66	17.50

GSM1900 TX Channel Frequency (MHz)	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame Average Power (dBm)			Tune-up Limit (dBm)
	512	661	810		512	661	810	
	1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM 1 Tx slot	22.66	22.72	22.68	23.10	13.66	13.72	13.68	14.10
GPRS 1 Tx slot	22.51	22.42	22.66	23.10	13.51	13.42	13.66	14.10
GPRS 2 Tx slots	19.64	19.80	19.51	20.60	13.64	13.80	13.51	14.60
GPRS 3 Tx slots	18.36	18.30	18.21	19.60	14.10	14.04	13.95	15.34
GPRS 4 Tx slots	16.80	16.86	16.76	18.10	13.80	13.86	13.76	15.10
EDGE 1 Tx slot	22.59	22.66	22.61	24.00	13.59	13.66	13.61	15.00
EDGE 2 Tx slots	19.50	19.59	19.57	21.00	13.50	13.59	13.57	15.00
EDGE 3 Tx slots	17.50	17.88	17.50	19.00	13.24	13.62	13.24	14.74
EDGE 4 Tx slots	16.60	16.50	16.50	18.00	13.60	13.50	13.50	15.00

Band TX Channel Frequency (MHz)	WCDMA II			Tune-up Limit (dBm)	WCDMA IV			WCDMA V			Tune-up Limit (dBm)	
	9262	9400	9538		1312	1413	1513	4132	4182	4233		
	8662	8680	8698		1337	1638	1738	4367	4407	4458		
	1852.4	1880	1907.6		1712.4	1732.6	1752.8	826.4	836.4	846.6		
3GPP Rel 98 AMR 12.2Kbps	13.59	13.63	13.62	14.00	15.62	15.54	15.51	16.70	19.71	19.86	19.80	20.90
3GPP Rel 99 RMC 12.2Kbps	13.60	13.68	13.67	14.90	15.67	15.58	15.55	16.70	19.74	19.87	19.82	20.90
3GPP Rel 6 HSDPA Subtest-1	12.57	12.63	12.69	13.90	14.44	14.52	14.61	15.70	19.32	19.23	19.26	19.90
3GPP Rel 6 HSDPA Subtest-2	12.55	12.67	12.69	13.90	14.41	14.47	14.58	15.70	19.32	19.25	19.26	19.90
3GPP Rel 6 HSDPA Subtest-3	12.11	12.15	12.16	13.40	13.91	13.99	14.09	15.20	18.82	18.75	18.75	19.40
3GPP Rel 6 HSDPA Subtest-4	12.05	12.18	12.14	13.40	13.92	13.94	14.08	15.20	18.86	18.73	18.79	19.40
3GPP Rel 6 DC-HSDPA Subtest-1	12.47	12.62	12.61	13.90	14.43	14.49	14.55	15.70	19.30	19.11	19.16	19.90
3GPP Rel 6 DC-HSDPA Subtest-2	12.52	12.63	12.63	13.90	14.00	14.42	14.52	15.70	19.29	19.21	19.22	19.90
3GPP Rel 6 DC-HSDPA Subtest-3	12.14	12.11	12.13	13.40	13.90	13.94	14.03	15.20	18.85	18.71	18.77	19.40
3GPP Rel 6 DC-HSDPA Subtest-4	12.02	12.14	12.09	13.40	13.89	13.92	14.02	15.20	18.79	18.70	18.75	19.40
3GPP Rel 6 HSUPA Subtest-1	12.43	12.62	12.63	13.90	14.15	14.34	14.46	15.70	19.31	19.21	19.23	19.90
3GPP Rel 6 HSUPA Subtest-2	10.49	10.65	10.67	11.90	12.24	12.32	12.48	13.70	17.21	17.18	17.21	17.90
3GPP Rel 6 HSUPA Subtest-3	11.52	11.60	11.65	12.90	13.18	13.37	13.49	14.70	18.12	18.11	18.25	18.90
3GPP Rel 6 HSUPA Subtest-4	10.48	10.67	10.69	11.90	12.02	12.33	12.49	13.70	17.23	17.19	17.22	17.90
3GPP Rel 6 HSUPA Subtest-5	12.52	12.59	12.68	13.90	13.92	14.34	13.95	15.70	19.19	19.20	19.20	19.90
3GPP Rel 7 HSPA+ (16QAM) Subtest-1	10.44	10.53	10.67	11.90	11.93	12.25	11.99	13.70	17.32	17.48	17.38	17.90



Band 2 (1900MHz Band) Part 24E										
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. Freq. 18700	Power Middle Ch. Freq. 18900	Power High Ch. Freq. 19100	Tune-up limit (dBm)	MPR (dB)		
Channel										
Frequency (MHz)										
20	QPSK	1	0	12.61	12.63	12.70				
20	QPSK	1	49	12.63	12.65	12.73	13.8	0		
20	QPSK	1	49	12.52	12.57	12.59				
20	QPSK	50	24	12.54	12.68	12.55				
20	QPSK	50	24	12.71	12.82	12.80	13.8	0		
20	QPSK	50	50	12.64	12.67	12.77				
20	QPSK	100	0	12.68	12.78	12.71				
20	16QAM	1	0	12.56	12.64	12.60				
20	16QAM	1	49	12.56	12.61	12.61	13.8	0		
20	16QAM	1	49	12.63	12.84	12.82				
20	16QAM	50	0	12.51	12.56	12.54				
20	16QAM	50	24	12.45	12.55	12.51	13.8	0		
20	16QAM	50	50	12.45	12.50	12.48				
20	16QAM	100	0	12.49	12.51	12.49				
20	84QAM	1	0	12.58	12.62	12.60				
20	84QAM	1	49	12.52	12.60	12.53	13.8	0		
20	84QAM	1	49	12.45	12.47	12.48				
20	84QAM	50	0	12.41	12.49	12.42				
20	84QAM	50	24	12.47	12.48	12.41	13.8	0		
20	84QAM	50	50	12.41	12.46	12.37				
20	84QAM	100	0	12.47	12.47	12.38				
Channel										
Frequency (MHz)										
15	QPSK	1	0	12.51	12.50	12.55				
15	QPSK	1	37	12.43	12.54	12.54	13.8	0		
15	QPSK	1	74	12.38	12.47	12.52				
15	QPSK	36	0	12.60	12.60	12.75				
15	QPSK	36	20	12.57	12.61	12.76	13.8	0		
15	QPSK	36	39	12.54	12.58	12.72				
15	QPSK	75	0	12.56	12.60	12.72				
15	16QAM	1	0	12.77	12.71	12.83				
15	16QAM	1	37	12.54	12.72	12.72	13.8	0		
15	16QAM	1	74	12.82	12.77	12.76				
15	16QAM	36	0	12.65	12.65	12.77				
15	16QAM	36	20	12.65	12.76	12.77	13.8	0		
15	16QAM	36	39	12.57	12.62	12.72				
15	16QAM	75	0	12.63	12.63	12.78				
15	84QAM	1	0	12.65	12.69	12.69				
15	84QAM	1	37	12.63	12.78	12.77	13.8	0		
15	84QAM	1	74	12.59	12.61	12.67				
15	84QAM	36	0	12.59	12.61	12.76				
15	84QAM	36	20	12.57	12.60	12.75	13.8	0		
15	84QAM	36	39	12.54	12.57	12.64				
15	84QAM	75	0	12.53	12.57	12.64				
Channel										
Frequency (MHz)										
10	QPSK	1	0	12.55	12.60	12.61				
10	QPSK	1	25	12.46	12.59	12.55	13.8	0		
10	QPSK	1	49	12.37	12.49	12.50				
10	QPSK	25	0	12.56	12.54	12.69				
10	QPSK	25	12	12.52	12.53	12.67	13.8	0		
10	QPSK	25	25	12.45	12.50	12.61				
10	QPSK	50	0	12.53	12.50	12.63				
10	16QAM	1	0	12.80	12.81	12.80				
10	16QAM	1	25	12.65	12.76	12.79	13.8	0		
10	16QAM	1	49	12.81	12.76	12.81				
10	16QAM	25	0	12.59	12.59	12.72				
10	16QAM	25	12	12.58	12.57	12.72	13.8	0		
10	16QAM	25	25	12.49	12.52	12.82				
10	16QAM	50	0	12.56	12.55	12.69				
10	84QAM	1	0	12.65	12.71	12.71				
10	84QAM	1	25	12.63	12.56	12.81	13.8	0		
10	84QAM	1	49	12.51	12.54	12.62				
10	84QAM	25	0	12.58	12.56	12.66				
10	84QAM	25	12	12.55	12.56	12.64	13.8	0		
10	84QAM	25	25	12.45	12.44	12.53				
10	84QAM	50	0	12.53	12.53	12.55				
Channel										
Frequency (MHz)										
5	QPSK	1	0	12.53	12.60	12.62				
5	QPSK	1	12	12.51	12.50	12.54	13.8	0		
5	QPSK	1	24	12.38	12.51	12.51				
5	QPSK	12	0	12.63	12.60	12.71				
5	QPSK	12	7	12.58	12.65	12.68	13.8	0		
5	QPSK	12	13	12.52	12.56	12.60				
5	QPSK	25	0	12.56	12.57	12.64				
5	16QAM	1	0	12.82	12.73	12.83				
5	16QAM	1	12	12.76	12.70	12.78	13.8	0		
5	16QAM	1	24	12.70	12.80	12.77				
5	16QAM	12	0	12.62	12.60	12.69				
5	16QAM	12	7	12.56	12.63	12.64	13.8	0		
5	16QAM	12	13	12.47	12.55	12.61				
5	16QAM	25	0	12.53	12.55	12.63				
5	84QAM	1	0	12.68	12.60	12.65				
5	84QAM	1	12	12.53	12.64	12.63	13.8	0		
5	84QAM	1	24	12.58	12.66	12.58				
5	84QAM	12	0	12.63	12.57	12.63				
5	84QAM	12	7	12.59	12.63	12.61	13.8	0		
5	84QAM	12	13	12.48	12.57	12.51				
5	84QAM	25	0	12.49	12.49	12.52				
Channel										
Frequency (MHz)										
3	QPSK	1	0	12.48	12.53	12.55				
3	QPSK	1	6	12.40	12.46	12.44	13.8	0		
3	QPSK	1	14	12.27	12.39	12.40				
3	QPSK	8	0	12.52	12.56	12.61				
3	QPSK	8	4	12.45	12.55	12.58	13.8	0		
3	QPSK	8	7	12.40	12.45	12.51				
3	QPSK	15	0	12.42	12.48	12.55				
3	16QAM	1	0	12.70	12.79	12.81				
3	16QAM	1	14	12.62	12.71	12.69	13.8	0		
3	16QAM	8	0	12.52	12.60	12.60				
3	16QAM	8	4	12.48	12.54	12.58	13.8	0		
3	16QAM	8	7	12.40	12.50	12.51				
3	16QAM	15	0	12.44	12.53	12.52				
3	84QAM	1	0	12.84	12.86	12.82				
3	84QAM	1	8	12.45	12.60	12.55	13.8	0		
3	84QAM	1	14	12.40	12.49	12.51				
3	84QAM	8	0	12.49	12.49	12.54				
3	84QAM	8	4	12.46	12.52	12.50	13.8	0		
3	84QAM	8	7	12.39	12.45	12.46				
3	84QAM	15	0	12.43	12.39	12.47				
Channel										
Frequency (MHz)										
1.4	QPSK	1	0	12.45	12.50	12.52				
1.4	QPSK	1	3	12.37	12.43	12.41	13.8	0		
1.4	QPSK	1	5	12.24	12.36	12.37				
1.4	QPSK	3	0	12.49	12.53	12.58				
1.4	QPSK	3	1	12.42	12.45	12.55	14.5	0		
1.4	QPSK	3	3	12.37	12.42	12.48				
1.4	QPSK	6	0	12.39	12.45	12.52	13.8	0		
1.4	16QAM	1	0	12.67	12.76	12.78				
1.4	16QAM	1	3	12.59	12.68	12.65				
1.4	16QAM	1	5	12.55	12.58	12.67	13.8	0		
1.4	16QAM	3	0	12.49	12.57	12.57				
1.4	16QAM	3	1	12.45	12.51	12.56				
1.4	16QAM	3	3	12.37	12.47	12.48	13.8	0		
1.4	16QAM	6	0	12.41	12.50	12.49				
1.4	84QAM	1	0	12.61	12.53	12.59				
1.4	84QAM	1	3	12.42	12.57	12.52	13.8	0		
1.4	84QAM	1	5	12.37	12.46	12.48				
1.4	84QAM	3	0	12.48	12.46	12.41				
1.4	84QAM	3	1	12.43	12.49	12.47	13.8	0		
1.4	84QAM	3	3	12.36	12.42	12.43				
1.4	84QAM	6	0	12.40	12.36	12.44	13.8	0		

Band 4 (AWS Band) Part 27L (only on channel required)										
BW (MHz)	Modulation	RB Size								



Band 7 (2600MHz Band)									
Part 27									
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				20850	21100	21350			
Frequency (MHz)				2510	2535	2560			
20	QPSK	1	0	16.31	16.30	16.49			
20	QPSK	1	49	16.27	16.47	16.49	17.2	0	
20	QPSK	1	99	16.31	16.52	16.48			
20	QPSK	50	0	16.15	16.20	16.34			
20	QPSK	50	24	16.25	16.45	16.36	17.2	0	
20	QPSK	50	50	16.20	16.38	16.35			
20	QPSK	100	0	16.18	16.34	16.31			
20	16QAM	1	0	16.05	16.32	16.31			
20	16QAM	1	49	16.12	16.31	16.29	17.2	0	
20	16QAM	1	99	16.06	16.28	16.22			
20	16QAM	50	0	15.94	16.04	16.18			
20	16QAM	50	24	15.95	16.13	16.21	17.2	0	
20	16QAM	50	50	15.98	16.23	16.21			
20	16QAM	100	0	15.98	16.17	16.16			
20	64QAM	1	0	15.94	16.19	16.16			
20	64QAM	1	49	15.92	16.32	16.22	17.2	0	
20	64QAM	1	99	16.06	16.29	16.27			
20	64QAM	50	0	15.97	16.24	16.18			
20	64QAM	50	24	16.01	16.13	16.20	17.2	0	
20	64QAM	50	50	16.02	16.20	16.21			
20	64QAM	100	0	16.10	16.25	16.23			
Channel				20875	21100	21375	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2507.5	2535	2562.5			
15	QPSK	1	0	16.00	16.11	16.27	17.2	0	
15	QPSK	1	37	16.05	16.22	16.28			
15	QPSK	1	74	16.08	16.30	16.26			
15	QPSK	36	0	16.14	16.28	16.42			
15	QPSK	36	20	16.21	16.32	16.40	17.2	0	
15	QPSK	36	39	16.23	16.44	16.45			
15	QPSK	75	0	16.23	16.29	16.37			
15	16QAM	1	0	16.34	16.42	16.50			
15	16QAM	1	37	16.35	16.50	16.44	17.2	0	
15	16QAM	1	74	16.39	16.44	16.45			
15	16QAM	36	0	16.10	16.28	16.40			
15	16QAM	36	20	16.16	16.37	16.47	17.2	0	
15	16QAM	36	39	16.22	16.39	16.46			
15	16QAM	75	0	16.19	16.31	16.38			
15	64QAM	1	0	16.20	16.28	16.44			
15	64QAM	1	37	16.22	16.43	16.47	17.2	0	
15	64QAM	1	74	16.29	16.44	16.47			
15	64QAM	36	0	16.16	16.31	16.42			
15	64QAM	36	20	16.22	16.35	16.45	17.2	0	
15	64QAM	36	39	16.25	16.42	16.47			
15	64QAM	75	0	16.20	16.30	16.40			
Channel				20900	21100	21400	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2505	2535	2565			
10	QPSK	1	0	16.16	16.21	16.37	17.2	0	
10	QPSK	1	25	16.22	16.30	16.37			
10	QPSK	1	49	16.19	16.34	16.40			
10	QPSK	25	0	16.26	16.33	16.38	17.2	0	
10	QPSK	25	12	16.24	16.37	16.40			
10	QPSK	25	25	16.25	16.41	16.46			
10	QPSK	50	0	16.19	16.33	16.35			
10	16QAM	1	0	16.23	16.34	16.49	17.2	0	
10	16QAM	1	25	16.14	16.40	16.45			
10	16QAM	1	49	16.25	16.48	16.48			
10	16QAM	25	0	16.06	16.14	16.22	17.2	0	
10	16QAM	25	12	16.09	16.23	16.25			
10	16QAM	25	25	16.04	16.22	16.26			
10	16QAM	50	0	16.05	16.15	16.20			
10	64QAM	1	0	16.12	16.23	16.25	17.2	0	
10	64QAM	1	25	16.05	16.28	16.39			
10	64QAM	1	49	16.12	16.42	16.40			
10	64QAM	25	0	16.07	16.11	16.25	17.2	0	
10	64QAM	25	12	16.06	16.19	16.26			
10	64QAM	25	25	16.06	16.25	16.27			
10	64QAM	50	0	16.33	16.43	16.51			
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				2502.5	2535	2567.5			
5	QPSK	1	0	16.00	16.00	16.15	17.2	0	
5	QPSK	1	12	15.97	16.07	16.20			
5	QPSK	1	24	15.99	16.10	16.13			
5	QPSK	12	0	16.00	16.04	16.16	17.2	0	
5	QPSK	12	7	16.07	16.11	16.24			
5	QPSK	12	13	16.00	16.27	16.24			
5	QPSK	25	0	16.05	16.10	16.20			
5	16QAM	1	0	16.30	16.38	16.49	17.2	0	
5	16QAM	1	12	16.29	16.45	16.47			
5	16QAM	1	24	16.34	16.45	16.43			
5	16QAM	12	0	16.01	16.08	16.22	17.2	0	
5	16QAM	12	7	16.10	16.15	16.26			
5	16QAM	12	13	16.10	16.23	16.28			
5	16QAM	25	0	16.09	16.16	16.24	17.2	0	
5	64QAM	1	0	16.20	16.25	16.39			
5	64QAM	1	12	16.24	16.36	16.38			
5	64QAM	1	24	16.25	16.36	16.39			
5	64QAM	12	0	16.05	16.11	16.24	17.2	0	
5	64QAM	12	7	16.16	16.25	16.33			
5	64QAM	12	13	16.13	16.30	16.36			
5	64QAM	25	0	16.07	16.18	16.26			

Band 12 (700MHz Low Band)									
Part 27F(only on channel required)									
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				23050	23055	23130			
Frequency (MHz)				704	707.5	711			
10	QPSK	1	0	21.15	21.22	21.10			
10	QPSK	1	25	21.16	21.17	21.11	22	0	
10	QPSK	1	49	21.12	21.14	21.09			
10	QPSK	25	0	21.04	21.05	21.01			
10	QPSK	25	12	20.98	21.03	20.96	22	0	
10	QPSK	25	25	20.84	20.83	20.89			
10	QPSK	50	0	20.87	20.93	20.82			
10	16QAM	1	0	21.06	21.12	20.96	22	0	
10	16QAM	1	25	20.90	20.94	20.97			
10	16QAM	1	49	20.96	21.04	21.07			
10	16QAM	25	0	20.77	20.81	20.78			
10	16QAM	25	12	20.88	20.82	20.87	21.5	0.5	
10	16QAM	25	25	20.89	20.86	20.87			
10	16QAM	50	0	20.85	20.77	20.84			
10	64QAM	1	0	21.00	20.96	20.97	21.5	0.5	
10	64QAM	1	25	21.00	20.99	20.88			
10	64QAM	1	49	20.93	20.95	21.01			
10	64QAM	25	0	20.84	20.84	20.85			
10	64QAM	25	12	20.98	20.88	20.92	21.5	0.5	
10	64QAM	25	25	20.96	20.91	20.92			
10	64QAM	50	0	20.91	20.84	20.84			
Channel				23075	23095	23155	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				701.5	707.5	713.5			
5	QPSK	1	0	20.72	20.76	20.82	22	0	
5	QPSK	1	12	20.83	20.85	20.89			
5	QPSK	1	24	20.82	20.86	20.85			
5	QPSK	12	0	20.91	20.88	20.86			
5	QPSK	12	7	20.91	20.93	20.91	22	0	
5	QPSK	12	13	20.87	20.92	20.94			
5	QPSK	25	0	20.91	20.85	20.88			
5	16QAM	1	0	21.07	21.09	21.12			
5	16QAM	1	12	21.12	21.20	21.16	22	0	
5	16QAM	1	24	21.17	21.20	21.16			
5	16QAM	12	0	20.94	20.87	20.90			
5	16QAM	12	7	20.97	20.99	20.98	21.5	0.5	
5	16QAM	12	13	20.93	20.91	20.93			
5	16QAM	25	0	20.92	20.87	20.89			
5	16QAM	25	12	20.97	21.06	21.16			
5	64QAM	1	0	21.00	21.14	21.09	21.5	0.5	
5	64QAM	1	24	20.98	21.14	21.10			
5	64QAM	12	0	20.97	20.99	20.98			
5	64QAM	12	7	20.96	21.03	21.04	21.5	0.5	



Band 17 (700MHz Band) Part 27H(only on channel required)									
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				709	710	711			
Frequency (MHz)				20.96	21.00	20.90			
10	QPSK	1	0	20.96	20.97	20.91	22	0	
10	QPSK	1	25	20.96	20.97	20.91			
10	QPSK	1	49	20.92	20.94	20.89			
10	QPSK	25	0	20.83	20.81	20.81			
10	QPSK	25	12	20.78	20.83	20.76	22	0	
10	QPSK	25	25	20.64	20.63	20.69			
10	QPSK	50	0	20.67	20.73	20.62			
10	16QAM	1	0	20.90	20.96	20.90			
10	16QAM	1	25	20.74	20.76	20.81	22	0	
10	16QAM	1	49	20.80	20.88	20.91			
10	16QAM	25	0	20.61	20.65	20.62			
10	16QAM	25	12	20.72	20.68	20.71	21.5	0.5	
10	16QAM	25	25	20.73	20.70	20.71			
10	16QAM	50	0	20.69	20.61	20.68			
10	64QAM	1	0	20.84	20.80	20.81	21.5	0.5	
10	64QAM	1	25	20.84	20.83	20.72			
10	64QAM	1	49	20.77	20.79	20.85			
10	64QAM	25	0	20.68	20.68	20.69			
10	64QAM	25	12	20.82	20.72	20.76	21.5	0.5	
10	64QAM	25	25	20.80	20.75	20.76			
10	64QAM	50	0	20.75	20.68	20.78			
Channel				2375	2370	2355	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				706.5	710	713.5			
5	QPSK	1	0	20.88	20.93	20.81	22	0	
5	QPSK	1	12	20.87	20.88	20.82			
5	QPSK	1	24	20.83	20.85	20.80			
5	QPSK	12	0	20.75	20.76	20.72			
5	QPSK	12	7	20.69	20.74	20.67	22	0	
5	QPSK	12	13	20.85	20.84	20.80			
5	QPSK	25	0	20.58	20.64	20.53			
5	16QAM	1	0	20.77	20.83	20.67			
5	16QAM	1	12	20.61	20.65	20.68	22	0	
5	16QAM	1	24	20.67	20.75	20.78			
5	16QAM	12	0	20.48	20.52	20.49			
5	16QAM	12	7	20.59	20.55	20.56	21.5	0.5	
5	16QAM	12	13	20.60	20.57	20.58			
5	16QAM	25	0	20.56	20.48	20.55			
5	64QAM	1	0	20.71	20.67	20.68	21.5	0.5	
5	64QAM	1	12	20.71	20.70	20.59			
5	64QAM	1	24	20.64	20.66	20.72			
5	64QAM	12	0	20.55	20.55	20.56			
5	64QAM	12	7	20.69	20.59	20.63	21.5	0.5	
5	64QAM	12	13	20.67	20.62	20.63			
5	64QAM	25	0	20.62	20.55	20.65			

Band 25 (1900MHz Band) Part 24E									
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				1860	1880	1905			
Frequency (MHz)				12.80	12.86	12.95			
20	QPSK	1	0	12.80	12.86	12.95	13.8	0	
20	QPSK	1	49	12.64	12.74	12.78			
20	QPSK	1	99	12.48	12.62	12.68			
20	QPSK	50	0	12.72	12.65	12.80			
20	QPSK	50	24	12.68	12.76	12.82	13.8	0	
20	QPSK	50	50	12.64	12.67	12.73			
20	QPSK	100	0	12.64	12.63	12.76			
20	16QAM	1	0	12.65	12.73	12.75			
20	16QAM	1	49	12.60	12.60	12.62	13.8	0	
20	16QAM	1	99	12.78	12.78	12.75			
20	16QAM	50	0	12.61	12.69	12.72			
20	16QAM	50	24	12.62	12.70	12.71	13.8	0	
20	16QAM	50	50	12.63	12.64	12.66			
20	16QAM	100	0	12.60	12.63	12.69			
20	64QAM	1	0	12.72	12.85	12.99	13.8	0	
20	64QAM	1	49	12.64	12.66	12.73			
20	64QAM	1	99	12.51	12.72	12.59			
20	64QAM	50	0	12.68	12.64	12.65			
20	64QAM	50	24	12.67	12.64	12.71	13.8	0	
20	64QAM	50	50	12.60	12.68	12.63			
20	64QAM	100	0	12.64	12.68	12.65			
Channel				2611.5	2630	2615	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1857.5	1890	1907.5			
15	QPSK	1	0	12.73	12.66	12.69			
15	QPSK	1	37	12.58	12.67	12.68	13.8	0	
15	QPSK	1	74	12.51	12.62	12.63			
15	QPSK	36	0	12.77	12.82	12.91			
15	QPSK	36	20	12.76	12.85	12.89	13.8	0	
15	QPSK	36	39	12.76	12.86	12.87			
15	QPSK	75	0	12.76	12.82	12.86			
15	16QAM	1	0	12.88	12.84	12.90			
15	16QAM	1	37	12.70	12.76	12.71	13.8	0	
15	16QAM	1	74	12.70	12.78	12.78			
15	16QAM	36	0	12.79	12.82	12.89			
15	16QAM	36	20	12.72	12.81	12.84	13.8	0	
15	16QAM	36	39	12.74	12.85	12.85			
15	16QAM	75	0	12.79	12.85	12.87			
15	64QAM	1	0	12.88	12.83	12.86			
15	64QAM	1	37	12.71	12.88	12.89	13.8	0	
15	64QAM	1	74	12.80	12.81	12.83			
15	64QAM	36	0	12.70	12.78	12.78			
15	64QAM	36	20	12.78	12.84	12.79	13.8	0	
15	64QAM	36	39	12.78	12.84	12.87			
15	64QAM	75	0	12.74	12.80	12.78			
Channel				26090	26340	26640	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1855	1880	1910			
10	QPSK	1	0	12.61	12.64	12.70	13.8	0	
10	QPSK	1	25	12.55	12.56	12.61			
10	QPSK	1	49	12.45	12.52	12.66			
10	QPSK	25	0	12.66	12.70	12.73			
10	QPSK	25	12	12.64	12.72	12.72	13.8	0	
10	QPSK	25	25	12.57	12.67	12.72			
10	QPSK	50	0	12.63	12.69	12.68			
10	16QAM	1	0	12.89	12.91	12.91			
10	16QAM	1	25	12.82	12.80	12.84	13.8	0	
10	16QAM	1	49	12.81	12.88	12.87			
10	16QAM	25	0	12.73	12.75	12.74			
10	16QAM	25	12	12.71	12.82	12.78	13.8	0	
10	16QAM	25	25	12.66	12.73	12.77			
10	16QAM	50	0	12.70	12.77	12.76			
10	64QAM	1	0	12.70	12.87	12.86			
10	64QAM	1	25	12.72	12.74	12.78	13.8	0	
10	64QAM	1	49	12.60	12.75	12.76			
10	64QAM	25	0	12.67	12.63	12.69			
10	64QAM	25	12	12.66	12.70	12.76	13.8	0	
10	64QAM	25	25	12.58	12.69	12.71			
10	64QAM	50	0	12.65	12.72	12.65			
Channel				26055	26340	26655	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1852.5	1890	1912.5			
5	QPSK	1	0	12.68	12.66	12.64	13.8	0	
5	QPSK	1	12	12.56	12.60	12.64			
5	QPSK	1	24	12.61	12.63	12.63			
5	QPSK	12	0	12.69	12.72	12.71			
5	QPSK	12	7	12.63	12.68	12.69	13.8	0	
5	QPSK	12	13	12.61	12.67	12.69			
5	QPSK	25	0	12.69	12.70	12.68			
5	16QAM	1	0	12.76	12.75	12.67			
5	16QAM	1	12	12.56	12.66	12.61	13.8	0	
5	16QAM	1	24	12.68	12.78	12.64			
5	16QAM	12	0	12.72	12.74	12.73			
5	16QAM	12	7	12.70	12.76	12.70	13.8	0	
5	16QAM	12	13	12.68	12.78	12.71			
5	16QAM	25	0	12.69	12.75	12.70			
5	64QAM	1	0	12.77	12.81	12.78			
5	64QAM	1	12	12.69	12.71	12.77	13.8	0	
5	64QAM	1	24	12.70	12.77	12.79			
5	64QAM	12	0	12.69	12.71	12.76			
5	64QAM	12	7	12.69	12.73	12.76	13.8	0	
5	64QAM	12	13	12.67					



Reduced power for Hotspot on-UAT

GSM/UMTS TX Channel	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame Average Power (dBm)			Tune-up Limit (dBm)
	512	661	810		1850.2	1880	1909.8	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM 1 Tx slot	23.88	23.55	23.42	24.90	14.88	14.55	14.42	15.90
GPRS 1 Tx slot	23.39	23.21	23.24	24.90	14.39	14.21	14.24	15.90
GPRS 2 Tx slots	21.32	21.41	21.28	22.40	15.32	15.41	15.28	16.40
GPRS 3 Tx slots	20.45	20.35	20.24	21.40	16.19	16.09	15.98	17.14
GPRS 4 Tx slots	19.31	19.44	19.48	19.90	16.31	16.44	16.48	16.90
EDGE 1 Tx slot	20.12	20.72	20.22	22.00	11.12	11.72	11.22	13.00
EDGE 2 Tx slots	18.09	18.02	18.32	20.00	12.09	12.02	12.32	14.00
EDGE 3 Tx slots	17.58	17.78	17.26	19.00	13.32	13.52	13.00	14.74
EDGE 4 Tx slots	15.55	15.82	15.66	17.50	12.55	12.82	12.66	14.50

Band TX Channel	WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)
	9262	9400	9638		1312	1413	1513	
Rx Channel	9662	9800	9638		1537	1638	1738	
Frequency (MHz)	1852.4	1880	1907.6		1922.4	1950.6	1978.6	
3GPP Rel 99 AMR 12.2Kbps	16.80	16.92	16.77	17.90	18.33	18.30	18.24	19.50
3GPP Rel 99 RMC 12.2Kbps	16.81	16.99	16.84	17.90	18.37	18.32	18.29	19.50
3GPP Rel 6 HSDPA Subtest-1	15.41	15.57	15.62	16.90	17.04	17.06	17.14	18.50
3GPP Rel 6 HSDPA Subtest-2	15.36	15.56	15.59	16.90	17.00	17.04	17.06	18.50
3GPP Rel 6 HSDPA Subtest-3	14.87	15.07	15.05	16.40	16.49	16.56	16.61	18.00
3GPP Rel 6 HSDPA Subtest-4	14.93	15.06	15.13	16.40	16.54	16.53	16.63	18.00
3GPP Rel 6 DC-HSDPA Subtest-1	15.55	15.63	15.62	16.90	17.09	17.11	17.24	18.50
3GPP Rel 6 DC-HSDPA Subtest-2	15.51	15.62	15.59	16.90	17.03	17.12	17.31	18.50
3GPP Rel 6 DC-HSDPA Subtest-3	15.01	15.11	15.22	16.40	16.67	16.70	16.77	18.00
3GPP Rel 6 DC-HSDPA Subtest-4	14.95	15.17	15.19	16.40	16.48	16.68	16.72	18.00
3GPP Rel 6 HS-PA Subtest-1	15.38	15.58	15.66	16.90	16.90	17.11	17.23	18.50
3GPP Rel 6 HS-PA Subtest-2	13.47	13.63	13.59	14.90	15.01	15.18	15.19	16.50
3GPP Rel 6 HS-PA Subtest-3	14.44	14.52	14.66	15.90	15.92	16.17	16.24	17.50
3GPP Rel 6 HS-PA Subtest-4	13.42	13.55	13.71	14.90	14.85	15.09	15.26	16.50
3GPP Rel 6 HS-PA Subtest-5	15.40	15.60	15.70	16.90	16.73	17.14	16.70	18.50
3GPP Rel 7 HSPA+ (16QAM) Subtest-1	13.42	13.44	13.53	14.90	14.73	15.00	14.78	16.50



Reduced power for Sensor on-UAT

GSM1900 TX Channel	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame Average Power (dBm)			Tune-up Limit (dBm)
	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM 1 Tx slot	23.88	23.55	23.42	24.90	14.88	14.55	14.42	15.90
GPRS 1 Tx slot	23.39	23.21	23.24	24.90	14.39	14.21	14.24	15.90
GPRS 2 Tx slots	21.32	21.41	21.28	22.40	15.32	15.41	15.28	16.40
GPRS 3 Tx slots	20.45	20.35	20.24	21.40	16.19	16.09	15.98	17.14
GPRS 4 Tx slots	19.31	19.44	19.48	19.90	16.31	16.44	16.48	16.90
EDGE 1 Tx slot	20.12	20.72	20.22	22.00	11.12	11.72	11.22	13.00
EDGE 2 Tx slots	18.09	18.02	18.32	20.00	12.09	12.02	12.32	14.00
EDGE 3 Tx slots	17.58	17.78	17.26	19.00	13.32	13.52	13.00	14.74
EDGE 4 Tx slots	15.55	15.82	15.66	17.50	12.55	12.82	12.66	14.50

Band TX Channel	WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)
	9262	9400	9638		1312	1413	1513	
Rx Channel	9662	9800	9638		1537	1638	1738	
Frequency (MHz)	1852.4	1880	1907.6		1722.4	1750.6	1778.6	
3GPP Rel 99 AMR 12.2Kbps	19.50	19.55	19.61	20.90	20.21	20.11	20.15	21.50
3GPP Rel 99 RMC 12.2Kbps	19.51	19.72	19.84	20.90	20.32	20.21	20.19	21.50
3GPP Rel 6 HSDPA Subtest-1	18.54	18.60	18.67	18.90	18.19	18.25	18.33	20.50
3GPP Rel 6 HSDPA Subtest-2	18.55	18.60	18.65	19.90	19.20	19.23	19.31	20.50
3GPP Rel 6 HSDPA Subtest-3	18.02	18.08	18.21	18.40	18.69	18.74	18.80	20.00
3GPP Rel 6 HSDPA Subtest-4	18.02	18.16	18.16	18.40	18.66	18.77	18.83	20.00
3GPP Rel 6 DC-HSDPA Subtest-1	18.44	18.52	18.66	18.90	18.15	18.22	18.29	20.50
3GPP Rel 6 DC-HSDPA Subtest-2	18.53	18.61	18.67	19.90	18.16	18.21	18.16	20.50
3GPP Rel 6 DC-HSDPA Subtest-3	18.00	18.03	18.15	18.40	18.66	18.72	18.77	20.00
3GPP Rel 6 DC-HSDPA Subtest-4	18.04	18.12	18.11	18.40	18.52	18.79	18.85	20.00
3GPP Rel 6 HSPA Subtest-1	18.50	18.58	18.55	19.90	19.21	19.24	18.37	20.50
3GPP Rel 6 HSPA Subtest-2	16.53	16.62	16.64	17.90	17.22	17.21	17.40	18.50
3GPP Rel 6 HSPA Subtest-3	17.47	17.65	17.60	18.90	18.25	18.22	18.38	19.50
3GPP Rel 6 HSPA Subtest-4	16.49	16.62	16.61	17.90	17.14	17.23	17.33	18.50
3GPP Rel 6 HSPA Subtest-5	18.50	18.60	18.70	19.90	19.20	19.30	19.30	20.50
3GPP Rel 7 HSPA+ (16QAM) Subtest-1	16.66	16.72	16.88	17.90	17.15	17.27	17.44	18.50



Band 25 (1900MHz Band) Part 24E									
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. Freq. 26140	Power Middle Ch. Freq. 26340	Power High Ch. Freq. 26590	Tune-up limit (dBm)	MPR (dB)	
Channel									
Frequency (MHz)				1860	1880	1905			
20	QPSK	1	0	19.29	19.47	19.58			
20	QPSK	1	49	19.10	19.20	19.31	20.3	0	
20	QPSK	1	99	19.04	19.15	19.15			
20	QPSK	50	0	19.25	19.32	19.40			
20	QPSK	50	24	19.22	19.32	19.45	20.3	0	
20	QPSK	50	50	19.28	19.38	19.43			
20	QPSK	100	0	19.31	19.37	19.46			
20	16QAM	1	0	19.53	19.57	19.54			
20	16QAM	1	49	19.47	19.56	19.53	20.3	0	
20	16QAM	1	99	19.39	19.52	19.56			
20	16QAM	50	0	19.37	19.31	19.41			
20	16QAM	50	24	19.35	19.34	19.52	20.3	0	
20	16QAM	50	50	19.29	19.40	19.42			
20	16QAM	100	0	19.34	19.38	19.51			
20	64QAM	1	0	19.44	19.51	19.53			
20	64QAM	1	49	19.35	19.46	19.46	20.3	0	
20	64QAM	1	99	19.24	19.49	19.47			
20	64QAM	50	0	19.40	19.35	19.47			
20	64QAM	50	24	19.37	19.34	19.53	20.3	0	
20	64QAM	50	50	19.32	19.40	19.47			
20	64QAM	100	0	19.34	19.40	19.55			
Channel									
Frequency (MHz)				26115	26340	26515	Tune-up limit (dBm)	MPR (dB)	
15	QPSK	1	0	19.03	18.85	19.00			
15	QPSK	1	37	18.78	18.86	18.99	20.3	0	
15	QPSK	1	74	18.79	18.94	18.92			
15	QPSK	36	0	19.00	18.99	19.08			
15	QPSK	36	20	19.00	19.03	19.07	20.3	0	
15	QPSK	36	39	18.95	19.08	19.13			
15	QPSK	75	0	18.97	19.05	19.07			
15	16QAM	1	0	19.17	19.21	19.33			
15	16QAM	1	37	19.12	19.22	19.31	20.3	0	
15	16QAM	1	74	19.13	19.29	19.34			
15	16QAM	36	0	19.01	18.98	19.07			
15	16QAM	36	20	19.08	19.04	19.10	20.3	0	
15	16QAM	36	39	18.96	19.11	19.14			
15	16QAM	75	0	19.00	19.07	19.05			
15	64QAM	1	0	19.25	19.07	19.10			
15	64QAM	1	37	19.09	19.13	19.27	20.3	0	
15	64QAM	1	74	19.06	19.15	19.22			
15	64QAM	36	0	19.08	19.03	19.14			
15	64QAM	36	20	19.05	19.15	19.13	20.3	0	
15	64QAM	36	39	19.02	19.12	19.18			
15	64QAM	75	0	19.02	19.07	19.12			
Channel									
Frequency (MHz)				26090	26340	26640	Tune-up limit (dBm)	MPR (dB)	
10	QPSK	1	0	18.99	19.03	19.16			
10	QPSK	1	25	18.95	19.12	19.18	20.3	0	
10	QPSK	1	49	18.97	19.11	19.18			
10	QPSK	25	0	19.09	19.10	19.15			
10	QPSK	25	12	19.08	19.17	19.26	20.3	0	
10	QPSK	25	25	19.05	19.14	19.24			
10	QPSK	50	0	19.11	19.18	19.16			
10	16QAM	1	0	19.35	19.31	19.50			
10	16QAM	1	25	19.23	19.29	19.38	20.3	0	
10	16QAM	1	49	19.21	19.30	19.51			
10	16QAM	25	0	19.13	19.12	19.20			
10	16QAM	25	12	19.19	19.19	19.28	20.3	0	
10	16QAM	25	25	19.07	19.16	19.24			
10	16QAM	50	0	19.09	19.20	19.22			
10	64QAM	1	0	19.16	19.23	19.35			
10	64QAM	1	25	19.20	19.20	19.35	20.3	0	
10	64QAM	1	49	19.20	19.24	19.34			
10	64QAM	25	0	19.20	19.13	19.26			
10	64QAM	25	12	19.16	19.25	19.32	20.3	0	
10	64QAM	25	25	19.09	19.22	19.29			
10	64QAM	50	0	19.17	19.22	19.18			
Channel									
Frequency (MHz)				26065	26340	26665	Tune-up limit (dBm)	MPR (dB)	
5	QPSK	1	0	19.03	19.10	19.00			
5	QPSK	1	12	19.00	19.04	19.12	20.3	0	
5	QPSK	1	24	19.02	19.04	19.08			
5	QPSK	12	0	19.09	19.12	19.24			
5	QPSK	12	7	19.09	19.18	19.23	20.3	0	
5	QPSK	12	13	19.08	19.13	19.21			
5	QPSK	25	0	19.09	19.14	19.19			
5	16QAM	1	0	19.45	19.46	19.50			
5	16QAM	1	12	19.36	19.39	19.44	20.3	0	
5	16QAM	1	24	19.37	19.46	19.45			
5	16QAM	12	0	19.16	19.16	19.27			
5	16QAM	12	7	19.12	19.19	19.26	20.3	0	
5	16QAM	12	13	19.11	19.16	19.25			
5	16QAM	25	0	19.12	19.15	19.24			
5	64QAM	1	0	19.34	19.38	19.42			
5	64QAM	1	12	19.29	19.30	19.38	20.3	0	
5	64QAM	1	24	19.28	19.33	19.36			
5	64QAM	12	0	19.16	19.21	19.27			
5	64QAM	12	7	19.21	19.28	19.32	20.3	0	
5	64QAM	12	13	19.21	19.28	19.32			
5	64QAM	25	0	19.12	19.15	19.24			
5	64QAM	25	12	19.18	19.20	19.31	20.3	0	
5	64QAM	25	25	19.15	19.20	19.28			
Channel									
Frequency (MHz)				26065	26340	26675	Tune-up limit (dBm)	MPR (dB)	
3	QPSK	1	0	18.97	18.96	19.06			
3	QPSK	1	8	18.94	18.95	19.00	20.3	0	
3	QPSK	1	14	18.91	18.97	19.06			
3	QPSK	8	0	19.05	19.06	19.12			
3	QPSK	8	4	19.04	19.06	19.13	20.3	0	
3	QPSK	8	7	19.03	19.03	19.12			
3	QPSK	15	0	19.02	19.05	19.11			
3	16QAM	1	0	19.24	19.26	19.32			
3	16QAM	1	8	19.19	19.16	19.29	20.3	0	
3	16QAM	1	14	19.21	19.27	19.30			
3	16QAM	8	0	19.13	19.16	19.20			
3	16QAM	8	4	19.13	19.18	19.21	20.3	0	
3	16QAM	8	7	19.09	19.12	19.19			
3	16QAM	15	0	19.06	19.10	19.17			
3	64QAM	1	0	19.28	19.28	19.31			
3	64QAM	1	8	19.27	19.31	19.34	20.3	0	
3	64QAM	1	14	19.19	19.27	19.31			
3	64QAM	8	0	19.14	19.13	19.11			
3	64QAM	8	4	19.13	19.12	19.20	20.3	0	
3	64QAM	8	7	19.09	19.13	19.19			
3	64QAM	15	0	19.05	19.10	19.15			
Channel									
Frequency (MHz)				26047	26340	26683	Tune-up limit (dBm)	MPR (dB)	
1.4	QPSK	1	0	18.90	18.92	18.91			
1.4	QPSK	1	3	18.91	18.94	18.98			
1.4	QPSK	1	5	18.81	18.88	18.94	20.3	0	
1.4	QPSK	3	0	18.89	18.91	18.96			
1.4	QPSK	3	1	18.94	18.95	19.01			
1.4	QPSK	3	3	18.90	18.92	19.02			
1.4	QPSK	6	0	18.84	18.96	19.01	20.3	0	
1.4	16QAM	1	0	19.21	19.26	19.29			
1.4	16QAM	1	3	19.27	19.34	19.36			
1.4	16QAM	1	5	19.10	19.25	19.31	20.3	0	
1.4	16QAM	3	0	18.99	19.03	19.07			
1.4	16QAM	3	1	19.05	19.06	19.12			
1.4	16QAM	3	3	19.01	19.05	19.06			
1.4	16QAM	6	0	19.07	19.06	19.10	20.3	0	
1.4	64QAM	1	0	19.16	19.15	19.22			
1.4	64QAM	1	3	19.21	19.20	19.16			
1.4	64QAM	1	5	19.11	19.14	19.10	20.3	0	
1.4	64QAM	3	0	19.17	19.17	19.17			
1.4	64QAM	3	1	19.19	19.15	19.25			
1.4	64QAM	3	3	19.12	19.09	19.17			
1.4	64QAM	6	0	19.02	19.00	19.07	20.3	0	

Band 66									
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. Freq. 132072	Power Middle Ch. Freq. 132322	Power			



Band 38(only on channel required)										
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch / Freq	Power High Ch / Freq	Power Max/Min Ch / Freq	Tune-up limit (dBm)	MFR (dB)		
Channel										
Frequency (MHz)										
20	QPSK	1	0	22.61	22.62	22.63	23.7	0		
20	QPSK	1	48	22.80	22.76	22.72	23.7	0		
20	QPSK	50	0	22.56	22.58	22.63	23.7	0		
20	QPSK	50	24	22.73	22.72	22.62	23.7	0		
20	QPSK	50	48	22.48	22.45	22.43	23.7	0		
20	QPSK	100	0	22.60	22.62	22.60	23.7	0		
20	16QAM	1	0	22.58	22.59	22.76	23.7	0		
20	16QAM	1	48	22.60	22.58	22.76	23.7	0		
20	16QAM	1	96	22.56	22.59	22.65	23.7	0		
20	16QAM	50	0	22.57	22.66	22.75	23	0.7		
20	16QAM	50	24	22.56	22.65	22.74	23	0.7		
20	16QAM	50	48	21.87	21.92	21.93	23	0.7		
20	16QAM	100	0	21.85	21.87	22.02	23	0.7		
20	16QAM	100	0	21.98	21.97	21.97	23	0.7		
20	16QAM	100	0	21.98	22.02	21.97	23	0.7		
20	16QAM	100	48	21.92	21.95	21.89	23	0.7		
20	16QAM	100	96	21.71	21.69	21.68	23	0.7		
20	16QAM	50	0	21.57	21.50	21.65	22	1.7		
20	16QAM	50	24	21.56	21.77	21.86	22	1.7		
20	16QAM	50	48	20.83	20.72	20.88	22	1.7		
20	16QAM	100	0	20.89	20.94	20.97	22	1.7		
Channel										
Frequency (MHz)										
15	QPSK	1	0	22.59	22.56	22.75	23.7	0		
15	QPSK	1	48	22.76	22.74	22.76	23.7	0		
15	QPSK	1	96	22.56	22.78	22.76	23.7	0		
15	QPSK	38	0	22.54	22.56	22.61	23.7	0		
15	QPSK	38	20	22.46	22.43	22.59	23.7	0		
15	QPSK	38	38	22.46	22.43	22.59	23.7	0		
15	QPSK	75	0	22.67	22.64	22.68	23.7	0		
15	QPSK	75	0	22.68	22.65	22.68	23.7	0		
15	16QAM	1	37	22.88	22.83	22.84	23.7	0		
15	16QAM	1	74	22.94	22.87	22.83	23.7	0		
15	16QAM	38	0	22.84	22.85	22.84	23.7	0.7		
15	16QAM	38	20	22.64	22.63	22.61	23.7	0.7		
15	16QAM	38	38	21.88	21.78	21.91	23.7	0.7		
15	16QAM	75	0	21.93	21.85	21.94	23.7	0.7		
15	16QAM	75	0	21.96	21.85	21.94	23.7	0.7		
15	16QAM	1	0	21.96	22.00	21.95	23.7	0.7		
15	16QAM	1	37	21.90	21.89	21.87	23.7	0.7		
15	16QAM	1	74	21.42	21.47	21.47	23.7	0.7		
15	16QAM	38	0	21.55	21.78	21.64	23.7	0.7		
15	16QAM	38	20	21.84	21.75	21.84	23.7	0.7		
15	16QAM	38	38	20.81	20.70	20.86	23.7	0.7		
15	16QAM	75	0	20.87	20.82	20.86	23.7	0.7		
15	16QAM	75	0	20.87	20.82	20.86	23.7	0.7		
Channel										
Frequency (MHz)										
10	QPSK	1	0	22.59	22.62	22.71	23.7	0		
10	QPSK	1	48	22.74	22.70	22.66	23.7	0		
10	QPSK	25	0	22.57	22.58	22.63	23.7	0		
10	QPSK	25	12	22.67	22.65	22.65	23.7	0		
10	QPSK	25	25	22.42	22.39	22.55	23.7	0		
10	QPSK	50	0	22.63	22.60	22.64	23.7	0		
10	16QAM	1	0	22.52	22.53	22.70	23.7	0		
10	16QAM	1	25	22.54	22.59	22.59	23.7	0		
10	16QAM	1	49	22.50	22.53	22.59	23.7	0		
10	16QAM	25	0	22.51	22.60	22.69	23.7	0.7		
10	16QAM	25	12	22.60	22.59	22.47	23.7	0.7		
10	16QAM	25	25	21.81	21.77	21.80	23.7	0.7		
10	16QAM	50	0	21.89	21.89	21.83	23.7	0.7		
10	16QAM	50	0	21.89	21.81	21.96	23.7	0.7		
10	16QAM	1	0	21.86	21.86	21.81	23.7	0.7		
10	16QAM	1	25	21.44	21.36	21.44	23.7	0.7		
10	16QAM	1	49	21.42	21.38	21.54	23.7	0.7		
10	16QAM	25	0	20.79	20.74	20.77	23.7	0.7		
10	16QAM	25	12	20.84	20.80	20.80	23.7	0.7		
10	16QAM	25	25	20.81	20.77	20.82	23.7	0.7		
10	16QAM	50	0	20.82	20.75	20.88	23.7	0.7		
10	16QAM	50	0	20.82	20.75	20.88	23.7	0.7		
Channel										
Frequency (MHz)										
5	QPSK	1	0	22.59	22.62	22.71	23.7	0		
5	QPSK	1	12	22.71	22.67	22.63	23.7	0		
5	QPSK	1	24	22.42	22.44	22.49	23.7	0		
5	QPSK	12	0	22.48	22.47	22.48	23.7	0		
5	QPSK	12	7	22.42	22.37	22.57	23.7	0		
5	QPSK	12	14	22.43	22.36	22.50	23.7	0		
5	QPSK	25	0	22.43	22.37	22.55	23.7	0		
5	16QAM	1	0	22.33	22.26	22.38	23.7	0		
5	16QAM	1	12	22.33	22.29	22.38	23.7	0		
5	16QAM	1	24	22.35	22.34	22.55	23.7	0		
5	16QAM	12	0	21.78	21.69	21.70	23.7	0.7		
5	16QAM	12	7	21.79	21.71	21.85	23.7	0.7		
5	16QAM	12	14	21.77	21.73	21.88	23.7	0.7		
5	16QAM	25	0	21.81	21.73	21.85	23.7	0.7		
5	16QAM	25	0	21.81	21.77	21.83	23.7	0.7		
5	16QAM	1	12	21.41	21.32	21.41	23.7	0.7		
5	16QAM	1	24	21.39	21.35	21.51	23.7	0.7		
5	16QAM	12	0	20.75	20.71	20.74	23.7	0.7		
5	16QAM	12	7	20.81	20.77	20.87	23.7	0.7		
5	16QAM	12	14	20.78	20.74	20.89	23.7	0.7		
5	16QAM	25	0	20.79	20.72	20.85	23.7	0.7		

Band 41 (2.6G Band)										
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch / Freq	Power High Ch / Freq	Power Max/Min Ch / Freq	Tune-up limit (dBm)	MFR (dB)		
Channel										
Frequency (MHz)										
20	QPSK	1	0	22.40	22.43	22.45	23.7	0		
20	QPSK	1	48	22.54	22.56	22.52	23.7	0		
20	QPSK	50	0	22.45	22.42	22.42	23.7	0		
20	QPSK	50	24	22.49	22.44	22.44	23.7	0		
20	QPSK	50	48	22.50	22.43	22.43	23.7	0		
20	16QAM	1	0	22.40	22.43	22.45	23.7	0		
20	16QAM	1	48	22.40	22.36	22.45	23.7	0		
20	16QAM	1	96	22.42	22.41	22.82	23.7	0		
20	16QAM	50	0	21.88	21.76	21.77	23.7	0.7		
20	16QAM	50	24	21.86	21.76	21.60	23.7	0.7		
20	16QAM	50	48	21.84	21.86	21.65	23.7	0.7		
20	16QAM	100	0	21.89	21.80	21.82	23.7	0.7		
20	16QAM	100	0	21.83	21.84	21.40	23.7	0.7		
20	16QAM	100	48	21.48	21.39	21.48	23.7	0.7		
20	16QAM	100	96	21.66	21.42	21.59	23.7	0.7		
20	16QAM	50	0	20.83	20.78	20.81	23.7	0.7		
20	16QAM	50	24	20.88	20.84	20.84	23.7	0.7		
20	16QAM	50	48	20.85	20.81	20.96	23.7	0.7		
20	16QAM	100	0	20.86	20.79	20.90	23.7	0.7		
20	16QAM	100	0	20.86	20.79	20.90	23.7	0.7		
Channel										
Frequency (MHz)										
15	QPSK	1	0	22.38	22.40	22.49	23.7	0		
15	QPSK	1	37	22.59	22.52	22.78	23.7	0		
15	QPSK	1	74	22.51	22.47	22.72	23.7	0		
15	QPSK	38	0	22.41	22.38	22.38	23.7	0		
15	QPSK	38	20	22.46	22.40	22.40	23.7	0		
15	QPSK	38	38	22.46	22.39	22.53	23.7	0		
15	QPSK	75	0	22.46	22.40	22.58	23.7	0		
15	QPSK	75	0	22.38	22.39	22.58	23.7	0		
15	16QAM	1	37	22.38	22.32	22.41	23.7	0		
15	16QAM	1	74	22.38	22.37	22.58	23.7	0		
15	16QAM	38	0	21.81	21.72	21.73	23.7	0.7		
15	16QAM	38	20	21.82	21.74	21.88	23.7	0.7		
15	16QAM</									



Full Power Mode - LAT

GSM850									
TX Channel	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame Average Power (dBm)			Tune-up Limit (dBm)	
	126	189	251		126	189	251		
Frequency (MHz)	854.4	858.4	862.8	854.2	858.4	862.8			
GSM 1 Tx slot	32.78	32.81	32.82	34.00	23.78	23.81	23.82	25.00	
GPRS 1 Tx slot	32.71	32.72	32.82	34.00	23.71	23.72	23.82	25.00	
GPRS 2 Tx slots	33.69	33.68	33.50	31.50	24.69	24.66	24.50	25.50	
GPRS 3 Tx slots	29.12	29.27	29.87	30.00	24.86	25.01	24.81	25.74	
GPRS 4 Tx slots	27.82	27.88	27.93	28.50	24.82	24.88	24.93	25.50	
EDGE 1 Tx slot	25.88	25.81	25.79	27.50	16.88	16.81	16.79	18.50	
EDGE 2 Tx slots	24.04	24.09	24.32	25.50	18.04	18.09	18.32	19.50	
EDGE 3 Tx slots	22.53	22.56	22.63	24.50	18.27	18.30	18.37	20.24	
EDGE 4 Tx slots	22.18	22.34	22.24	24.00	18.19	18.34	18.24	21.00	

GSM1900									
TX Channel	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame Average Power (dBm)			Tune-up Limit (dBm)	
	512	661	810		512	661	810		
Frequency (MHz)	1850.2	1880	1909.8	1850.2	1880	1909.8			
GSM 1 Tx slot	29.34	29.32	29.46	30.50	20.34	20.32	20.46	21.50	
GPRS 1 Tx slot	29.33	29.29	29.45	30.50	20.33	20.29	20.45	21.50	
GPRS 2 Tx slots	28.45	28.34	28.12	28.00	20.45	20.34	20.12	22.00	
GPRS 3 Tx slots	25.43	25.30	25.12	27.00	21.17	21.04	20.86	22.74	
GPRS 4 Tx slots	24.35	24.10	24.06	25.50	21.10	21.06	22.50		
EDGE 1 Tx slot	23.66	23.67	25.51	27.00	16.66	16.67	16.51	18.00	
EDGE 2 Tx slots	23.28	23.15	23.21	25.00	17.28	17.15	17.21	18.00	
EDGE 3 Tx slots	22.05	22.06	22.09	24.00	17.79	17.80	17.83	19.74	
EDGE 4 Tx slots	21.03	21.02	21.11	23.00	16.03	16.02	16.11	20.00	

Band	TX Channel	WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)	WCDMA V			Tune-up Limit (dBm)
		9262	9400	9538		1312	1413	1513		4132	4182	4233	
TX Channel	9602	9600	9600	1537	1638	1738	4507	4407	4458				
Frequency (MHz)	1852.4	1880	1907.6	1712.4	1732.6	1752.8	826.4	836.4	846.8				
3GPP Rel 99	AMR 12.2Kbps	24.18	24.31	24.27	25.00	24.06	24.02	25.00	24.07	24.10	24.04	25.00	
3GPP Rel 99	RMC 12.2Kbps	24.21	24.33	24.30	25.00	24.14	24.09	24.04	24.09	24.11	24.05	25.00	
3GPP Rel 6	HSDPA Subtest-1	23.25	23.27	23.31	24.00	23.16	23.12	23.12	24.00	23.10	23.12	23.04	24.00
3GPP Rel 6	HSDPA Subtest-2	23.28	23.33	23.32	24.00	23.14	23.16	23.10	24.00	23.08	23.12	22.80	24.00
3GPP Rel 6	HSDPA Subtest-3	22.41	22.91	22.78	23.50	22.70	22.62	23.50	22.54	22.81	22.52	23.50	
3GPP Rel 6	HSDPA Subtest-4	22.77	22.87	22.77	23.50	22.65	22.60	22.58	23.50	22.58	22.57	22.56	23.50
3GPP Rel 6	DC-HSDPA Subtest-1	23.30	23.42	23.35	24.00	23.21	23.17	23.16	24.00	23.19	23.20	23.10	24.00
3GPP Rel 6	DC-HSDPA Subtest-2	23.31	23.42	23.41	24.00	23.16	23.15	23.16	24.00	23.15	23.22	22.89	24.00
3GPP Rel 6	DC-HSDPA Subtest-3	22.50	23.02	22.87	23.50	22.78	22.79	22.70	23.50	22.62	22.71	22.64	23.50
3GPP Rel 6	DC-HSDPA Subtest-4	22.82	22.94	22.85	23.50	22.74	22.64	22.65	23.50	22.67	22.66	22.67	23.50
3GPP Rel 6	HSUPA Subtest-1	23.26	23.44	23.36	24.00	23.23	23.18	23.16	24.00	23.06	23.09	23.07	24.00
3GPP Rel 6	HSUPA Subtest-2	21.28	21.31	21.38	22.00	21.17	21.20	21.13	22.00	21.07	21.12	21.00	22.00
3GPP Rel 6	HSUPA Subtest-3	22.24	22.36	22.34	23.00	22.17	22.19	22.13	23.00	22.06	22.10	22.07	23.00
3GPP Rel 6	HSUPA Subtest-4	21.26	21.47	21.38	22.00	21.16	21.16	21.16	22.00	21.08	21.08	21.06	22.00
3GPP Rel 6	HSUPA Subtest-5	23.30	23.40	23.40	24.00	23.20	23.20	23.10	24.00	23.10	23.10	23.10	24.00
3GPP Rel 7	HSPA+ (16QAM) Subtest-1	21.10	21.14	21.02	22.00	21.11	21.04	21.07	22.00	21.00	20.99	20.95	22.00



Band 2 (1900MHz Band) Part 24E										
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch./Freq.	Power Middle Ch./Freq.	Power High Ch./Freq.	Tune-up limit (dBm)	MPR (dB)		
Channel										
Frequency (MHz)										
20	QPSK	1	0	23.64	23.74	23.75	25	0		
20	QPSK	1	49	23.52	23.65	23.66				
20	QPSK	1	99	23.42	23.57	23.65				
20	QPSK	50	0	22.69	22.71	22.73	24	1		
20	QPSK	50	24	22.85	22.87	22.70				
20	QPSK	50	50	22.63	22.66	22.68				
20	16QAM	1	0	22.55	22.79	22.88	24	1		
20	16QAM	1	49	22.46	22.74	22.82				
20	16QAM	1	99	22.44	22.83	22.85				
20	16QAM	50	0	21.57	21.73	21.78	23	2		
20	16QAM	50	24	21.51	21.57	21.83				
20	16QAM	50	50	21.56	21.71	21.83				
20	16QAM	100	0	21.63	21.79	21.85	23	2		
20	84QAM	1	0	21.80	21.76	21.80				
20	84QAM	1	49	21.72	21.67	21.54				
20	84QAM	1	99	21.67	21.69	21.72	22	3		
20	84QAM	50	0	20.51	20.76	20.78				
20	84QAM	50	24	20.62	20.84	20.80				
20	84QAM	50	50	20.51	20.81	20.85	22	3		
20	84QAM	100	0	20.63	20.81	20.83				
Channel										
Frequency (MHz)										
15	QPSK	1	0	23.62	23.58	23.67	25	0		
15	QPSK	1	37	23.53	23.61	23.70				
15	QPSK	1	74	23.42	23.59	23.57				
15	QPSK	36	0	22.64	22.71	22.79	24	1		
15	QPSK	36	20	22.67	22.68	22.71				
15	QPSK	36	39	22.61	22.73	22.77				
15	QPSK	75	0	22.67	22.69	22.74	24	1		
15	16QAM	1	0	22.52	22.73	22.80				
15	16QAM	1	37	22.43	22.71	22.89				
15	16QAM	1	74	22.43	22.75	22.53	23	2		
15	16QAM	36	0	21.56	21.85	21.89				
15	16QAM	36	20	21.61	21.84	21.70				
15	16QAM	36	39	21.58	21.75	21.72	23	2		
15	16QAM	75	0	21.65	21.65	21.70				
15	84QAM	1	0	21.90	21.55	21.79				
15	84QAM	1	37	21.82	21.59	21.51	23	2		
15	84QAM	1	74	21.66	21.66	21.36				
15	84QAM	36	0	20.58	20.83	20.85				
15	84QAM	36	20	20.59	20.73	20.76	22	3		
15	84QAM	36	39	20.51	20.78	20.66				
15	84QAM	75	0	20.49	20.62	20.66				
Channel										
Frequency (MHz)										
10	QPSK	1	0	23.65	23.63	23.68	25	0		
10	QPSK	1	25	23.49	23.69	23.71				
10	QPSK	1	49	23.43	23.60	23.62				
10	QPSK	25	0	22.71	22.73	22.77	24	1		
10	QPSK	25	12	22.65	22.72	22.84				
10	QPSK	25	25	22.61	22.72	22.75				
10	QPSK	50	0	22.66	22.67	22.72	24	1		
10	16QAM	1	0	22.63	22.66	22.81				
10	16QAM	1	25	22.50	22.59	22.66				
10	16QAM	1	49	22.42	22.62	22.69	23	2		
10	16QAM	25	0	21.58	21.69	21.85				
10	16QAM	25	12	21.58	21.58	21.72				
10	16QAM	25	25	21.50	21.58	21.64	23	2		
10	16QAM	50	0	21.58	21.57	21.82				
10	84QAM	1	0	21.81	21.41	21.69				
10	84QAM	1	25	21.74	21.57	21.74	23	2		
10	84QAM	1	49	21.68	21.55	21.73				
10	84QAM	25	0	20.78	20.87	20.93				
10	84QAM	25	12	20.66	20.81	20.83	22	3		
10	84QAM	25	25	20.62	20.83	20.84				
10	84QAM	50	0	20.74	20.77	20.66				
Channel										
Frequency (MHz)										
5	QPSK	1	0	23.57	23.54	23.64	25	0		
5	QPSK	1	14	23.51	23.61	23.62				
5	QPSK	1	24	23.41	23.51	23.50				
5	QPSK	12	0	22.71	22.70	22.75	24	1		
5	QPSK	12	7	22.58	22.67	22.72				
5	QPSK	12	13	22.51	22.61	22.64				
5	QPSK	25	0	22.63	22.66	22.72	24	1		
5	16QAM	1	0	22.69	22.72	22.76				
5	16QAM	1	12	22.61	22.65	22.71				
5	16QAM	1	24	22.52	22.61	22.67	23	2		
5	16QAM	12	0	21.63	21.66	21.72				
5	16QAM	12	7	21.59	21.80	21.66				
5	16QAM	12	13	21.47	21.61	21.60	23	2		
5	16QAM	25	0	21.56	21.58	21.63				
5	84QAM	1	0	21.83	21.51	21.48				
5	84QAM	1	12	21.83	21.65	21.55	23	2		
5	84QAM	1	24	21.81	21.45	21.57				
5	84QAM	12	0	20.87	20.83	20.86				
5	84QAM	12	7	20.87	20.77	20.78	22	3		
5	84QAM	12	13	20.79	20.70	20.80				
5	84QAM	25	0	20.59	20.79	20.77				
Channel										
Frequency (MHz)										
3	QPSK	1	0	23.71	23.68	23.66	25	0		
3	QPSK	1	8	23.63	23.69	23.70				
3	QPSK	1	14	23.53	23.58	23.55				
3	QPSK	8	0	22.74	22.73	22.84	24	1		
3	QPSK	8	7	22.71	22.71	22.81				
3	QPSK	8	7	22.62	22.71	22.72				
3	QPSK	15	0	22.68	22.73	22.74	24	1		
3	16QAM	1	0	22.62	22.69	22.74				
3	16QAM	1	8	22.69	22.75	22.69				
3	16QAM	1	14	22.51	22.59	22.53	23	2		
3	16QAM	8	0	21.49	21.53	21.61				
3	16QAM	8	4	21.48	21.55	21.60				
3	16QAM	8	7	21.38	21.51	21.49	23	2		
3	16QAM	15	0	21.41	21.45	21.52				
3	84QAM	1	0	21.70	21.71	21.84				
3	84QAM	1	8	21.75	21.78	21.87	23	2		
3	84QAM	1	14	21.56	21.69	21.80				
3	84QAM	8	0	20.83	20.82	20.78				
3	84QAM	8	4	20.68	20.83	20.81	22	3		
3	84QAM	8	7	20.64	20.77	20.71				
3	84QAM	15	0	20.78	20.74	20.79				
Channel										
Frequency (MHz)										
1.4	QPSK	1	0	23.27	23.32	23.27	25	0		
1.4	QPSK	1	3	23.27	23.33	23.32				
1.4	QPSK	1	5	23.16	23.21	23.21				
1.4	QPSK	3	0	23.27	23.33	23.33	24	1		
1.4	QPSK	3	3	23.21	23.32	23.29				
1.4	QPSK	6	0	22.30	22.36	22.38				
1.4	16QAM	1	0	22.54	22.67	22.63	24	1		
1.4	16QAM	1	3	22.57	22.65	22.64				
1.4	16QAM	1	5	22.50	22.53	22.52				
1.4	16QAM	3	0	22.37	22.46	22.44	23	2		
1.4	16QAM	3	1	22.38	22.47	22.49				
1.4	16QAM	3	3	22.27	22.36	22.39				
1.4	16QAM	6	0	21.41	21.48	21.48	23	2		
1.4	84QAM	1	0	21.79	21.80	21.72				
1.4	84QAM	1	3	21.80	21.87	21.79				
1.4	84QAM	1	5	21.50	21.73	21.57	23	2		
1.4	84QAM	3	0	21.60	21.71	21.66				
1.4	84QAM	3	1	21.77	21.74	21.69				
1.4	84QAM	3	3	21.70	21.73	21.66	22	3		
1.4	84QAM	6	0	20.59	20.72	20.62				

Band 4 (AWS Band) Part 27L (only on channel required)										
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch./Freq.	Power Middle Ch./Freq.	Power High Ch./Freq.	Tune-up limit (dBm)	MPR (dB)		
Channel										
Frequency (MHz)										
20	QPSK	1	0	23.78	23.91	23.96	25	0		
20	QPSK	1	49	23.81	23.84	23.82				
20	QPSK	1	99	23.88	23.75	23.87				
20	QPSK	50	0	22.84	22.89	22.86	24	1		
20	QPSK	50	24	22.77	22.83	22.78				
20	QPSK	50	50	22.77	22.82	22.79				
20	QPSK	100	0	22.86	22.90	22.88	24	1		
20	16QAM	1	0	23.01	23.02	23.03				
20	16QAM	1	49	22.97	22.98	23.02				
20	16QAM	1	99	22.93	23.00	23.00	23			



Band 7 (2600MHz Band)									
Part 27									
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel									
Frequency (MHz)				2050	2100	2150			
20	QPSK	1	0	22.61	22.72	22.65	24	0	
20	QPSK	1	49	22.72	22.82	22.78			
20	QPSK	1	99	22.78	22.95	22.91			
20	QPSK	50	0	21.63	21.73	21.69	23	1	
20	QPSK	50	24	21.71	21.79	21.72			
20	QPSK	50	50	21.69	21.74	21.71			
20	QPSK	100	0	21.71	21.79	21.76			
20	16QAM	1	0	21.31	21.33	21.47	23	1	
20	16QAM	1	49	21.33	21.45	21.49			
20	16QAM	1	99	21.33	21.60	21.54			
20	16QAM	50	0	20.96	20.22	20.26	22	2	
20	16QAM	50	24	20.19	20.25	20.38			
20	16QAM	50	50	20.17	20.33	20.30			
20	16QAM	100	0	20.17	20.22	20.33			
20	64QAM	1	0	20.36	20.50	20.45	22	2	
20	64QAM	1	49	20.39	20.81	20.43			
20	64QAM	1	99	20.42	20.71	20.44			
20	64QAM	50	0	19.50	19.70	19.65	21	3	
20	64QAM	50	24	19.58	19.68	19.84			
20	64QAM	50	50	19.46	19.88	19.87			
20	64QAM	100	0	19.54	19.78	19.81			
Channel									
Frequency (MHz)				2025	2100	21375			
15	QPSK	1	0	22.53	22.59	22.72	24	0	
15	QPSK	1	37	22.53	22.71	22.74			
15	QPSK	1	74	22.58	22.70	22.68			
15	QPSK	36	0	21.59	21.70	21.77	23	1	
15	QPSK	36	20	21.67	21.78	21.83			
15	QPSK	36	39	21.68	21.86	21.86			
15	QPSK	75	0	21.68	21.77	21.81			
15	16QAM	1	0	21.54	21.60	21.78	23	1	
15	16QAM	1	37	21.54	21.77	21.82			
15	16QAM	1	74	21.60	21.87	21.83			
15	16QAM	36	0	20.38	20.49	20.58	22	2	
15	16QAM	36	20	20.49	20.55	20.60			
15	16QAM	36	39	20.46	20.64	20.59			
15	16QAM	75	0	20.48	20.57	20.61			
15	64QAM	1	0	20.75	20.88	20.77	22	2	
15	64QAM	1	37	20.70	20.74	20.70			
15	64QAM	1	74	20.69	20.74	20.77			
15	64QAM	36	0	19.38	19.72	19.74	21	3	
15	64QAM	36	20	19.46	19.65	19.72			
15	64QAM	36	39	19.48	19.71	19.82			
15	64QAM	75	0	19.60	19.75	19.70			
Channel									
Frequency (MHz)				2050	2100	21400			
10	QPSK	1	0	22.72	22.51	22.53	24	0	
10	QPSK	1	25	22.65	22.63	22.65			
10	QPSK	1	49	22.67	22.89	22.84			
10	QPSK	25	0	21.79	21.84	21.89	23	1	
10	QPSK	25	12	21.79	21.86	21.92			
10	QPSK	25	25	21.77	21.94	21.97			
10	QPSK	50	0	21.78	21.83	21.90			
10	16QAM	1	0	21.48	21.70	21.71	23	1	
10	16QAM	1	25	21.52	21.67	21.73			
10	16QAM	1	49	21.64	21.79	21.73			
10	16QAM	25	0	20.35	20.41	20.47	22	2	
10	16QAM	25	12	20.43	20.48	20.50			
10	16QAM	25	25	20.37	20.49	20.55			
10	16QAM	50	0	20.35	20.48	20.48			
10	64QAM	1	0	20.55	20.73	20.59	22	2	
10	64QAM	1	25	20.40	20.86	20.53			
10	64QAM	1	49	20.61	20.53	20.59			
10	64QAM	25	0	19.69	19.98	19.93	21	3	
10	64QAM	25	12	19.70	19.87	19.90			
10	64QAM	25	25	19.74	19.85	19.94			
10	64QAM	50	0	19.72	19.97	19.85			
Channel									
Frequency (MHz)				2075	2100	21425			
5	QPSK	1	0	22.25	22.25	22.37	24	0	
5	QPSK	1	12	22.22	22.37	22.37			
5	QPSK	1	24	22.23	22.42	22.38			
5	QPSK	12	0	21.33	21.33	21.42	23	1	
5	QPSK	12	7	21.38	21.46	21.52			
5	QPSK	12	13	21.39	21.50	21.52			
5	QPSK	25	0	21.34	21.41	21.43			
5	16QAM	1	0	21.54	21.60	21.67	23	1	
5	16QAM	1	12	21.54	21.66	21.64			
5	16QAM	1	24	21.57	21.71	21.65			
5	16QAM	12	0	20.35	20.40	20.42	22	2	
5	16QAM	12	7	20.41	20.49	20.52			
5	16QAM	12	13	20.43	20.56	20.54			
5	16QAM	25	0	20.38	20.45	20.50	23	2	
5	64QAM	1	0	20.78	20.65	20.91			
5	64QAM	1	12	20.77	20.73	20.87	22	2	
5	64QAM	1	24	20.86	20.74	20.73			
5	64QAM	12	0	19.52	19.84	19.88			
5	64QAM	12	7	19.63	19.96	19.90	21	3	
5	64QAM	12	13	19.75	19.90	20.00			
5	64QAM	25	0	19.60	19.91	19.87			

Band 12 (700MHz Low Band)									
Part 27F(only on channel required)									
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel									
Frequency (MHz)				704	707.5	711			
10	QPSK	1	0	23.79	23.86	23.80	25	0	
10	QPSK	1	25	23.76	23.81	23.77			
10	QPSK	1	49	23.77	23.79	23.76			
10	QPSK	25	0	22.86	22.88	22.83	24	1	
10	QPSK	25	12	22.84	22.87	22.91			
10	QPSK	25	25	22.83	22.84	22.80			
10	QPSK	50	0	22.85	22.91	22.87			
10	16QAM	1	0	23.11	23.13	23.10	24	1	
10	16QAM	1	25	23.12	23.14	23.02			
10	16QAM	1	49	23.14	23.02	23.01			
10	16QAM	25	0	21.87	21.93	21.86	23	2	
10	16QAM	25	12	21.97	21.92	21.96			
10	16QAM	25	25	21.98	21.96	21.94			
10	16QAM	50	0	21.98	21.90	21.94			
10	64QAM	1	0	22.13	22.05	22.12	23	2	
10	64QAM	1	25	22.23	22.10	22.05			
10	64QAM	1	49	21.97	22.26	22.03			
10	64QAM	25	0	20.93	20.97	20.93	22	3	
10	64QAM	25	12	21.14	20.98	21.13			
10	64QAM	25	25	21.05	21.04	21.01			
10	64QAM	50	0	21.02	20.98	20.98			
Channel									
Frequency (MHz)				701.5	707.5	713.5			
5	QPSK	1	0	23.78	23.78	23.78	25	0	
5	QPSK	1	12	23.81	23.83	23.81			
5	QPSK	1	24	23.83	23.79	23.78			
5	QPSK	12	0	22.89	22.90	22.87	24	1	
5	QPSK	12	7	22.90	22.89	22.86			
5	QPSK	12	13	22.88	22.92	22.86			
5	QPSK	25	0	22.91	22.87	22.83	23	2	
5	16QAM	1	0	23.07	23.04	23.07			
5	16QAM	1	12	23.07	23.12	23.06	24	1	
5	16QAM	1	24	23.12	23.18	23.08			
5	16QAM	12	0	21.90	21.89	21.89	23	2	
5	16QAM	12	7	21.91	21.89	21.88			
5	16QAM	12	13	21.87	21.92	21.90			
5	16QAM	25	0	21.90	21.86	21.84	23	2	
5	16QAM	25	12	21.95	21.97	21.97			
5	64QAM	1	0	22.13	22.05	21.93	23	2	
5	64QAM	1	24	21.98	22.07	21.90			
5	64QAM	12	0	21.14	20.97	21.05	22	3	
5	64QAM	12	7	21.01	21.05	21.09			
5	64QAM	12	13	20.97	21.09	21.10			
5	64QAM	25	0	20.95	20.95	21.10			
Channel									
Frequency (MHz)				700.5	707.5	714.5			
3	QPSK	1	0	23.77	23.76	23.74	25	0	
3	QPSK	1	8	23.85	23.				



Band 17 (700MHz Band) Part 27H(only on channel required)									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel									
Frequency (MHz)									
10	QPSK	1	0	23.85	23.86	23.82			
10	QPSK	1	25	23.81	23.82	23.78	25	0	
10	QPSK	1	49	23.83	23.85	23.80			
10	QPSK	25	0	22.87	22.91	22.83			
10	QPSK	25	12	22.82	22.82	22.79	24	1	
10	QPSK	25	25	22.81	22.87	22.81			
10	QPSK	50	0	22.81	22.84	22.82			
10	16QAM	1	0	23.07	23.08	23.05			
10	16QAM	1	25	22.95	22.98	22.99	24	1	
10	16QAM	1	49	23.09	23.05	23.05			
10	16QAM	25	0	21.78	21.80	21.77			
10	16QAM	25	12	21.20	21.85	21.85	23	2	
10	16QAM	25	25	21.81	21.83	21.79			
10	16QAM	50	0	21.89	21.78	21.76			
10	64QAM	1	0	21.96	21.89	22.05			
10	64QAM	1	25	22.00	21.83	22.08	23	2	
10	64QAM	1	49	21.99	21.99	22.15			
10	64QAM	25	0	21.07	21.06	20.99			
10	64QAM	25	12	21.05	20.92	21.07	22	3	
10	64QAM	25	25	21.10	21.06	21.07			
10	64QAM	50	0	21.08	21.07	21.03			
Channel									
Frequency (MHz)									
5	QPSK	1	0	23.74	23.72	23.71			
5	QPSK	1	12	23.69	23.66	23.69	25	0	
5	QPSK	1	24	23.64	23.68	23.65			
5	QPSK	12	0	22.99	22.94	22.95			
5	QPSK	12	7	22.99	22.93	22.96	24	1	
5	QPSK	12	13	22.95	22.94	22.90			
5	QPSK	25	0	23.00	22.93	22.93			
5	16QAM	1	12	23.06	23.05	22.96	24	1	
5	16QAM	1	24	23.06	23.05	23.05			
5	16QAM	12	0	21.85	21.85	21.88			
5	16QAM	12	7	21.85	21.77	21.80	23	2	
5	16QAM	12	13	21.79	21.80	21.77			
5	16QAM	25	0	21.88	21.80	21.76			
5	64QAM	1	0	21.98	22.11	21.90			
5	64QAM	1	12	21.92	21.84	21.85	23	2	
5	64QAM	1	24	22.00	22.15	21.88			
5	64QAM	12	0	21.07	21.07	20.95			
5	64QAM	12	7	21.09	21.05	20.94	22	3	
5	64QAM	12	13	21.06	20.96	21.02			
5	64QAM	25	0	21.07	20.97	21.10			

Band 25 (1900MHz Band) Part 24E									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel									
Frequency (MHz)									
20	QPSK	1	0	23.75	23.80	23.82			
20	QPSK	1	49	23.63	23.68	23.74	25	0	
20	QPSK	1	99	23.55	23.60	23.66			
20	QPSK	50	0	22.35	22.49	22.56			
20	QPSK	50	24	22.40	22.52	22.59	24	1	
20	QPSK	50	50	22.41	22.52	22.61			
20	QPSK	100	0	22.47	22.52	22.71			
20	16QAM	1	0	22.31	22.41	22.47			
20	16QAM	1	49	22.24	22.34	22.36	24	1	
20	16QAM	1	99	22.08	22.34	22.37			
20	16QAM	50	0	21.11	21.14	21.26			
20	16QAM	50	24	21.17	21.21	21.33	23	2	
20	16QAM	50	50	21.06	21.21	21.28			
20	16QAM	100	0	21.14	21.17	21.33			
20	64QAM	1	0	21.49	21.54	21.68			
20	64QAM	1	49	21.34	21.66	21.74	23	2	
20	64QAM	1	99	21.30	21.65	21.69			
20	64QAM	50	0	20.38	20.41	20.44			
20	64QAM	50	24	20.40	20.61	20.51	22	3	
20	64QAM	50	50	20.37	20.53	20.58			
20	64QAM	100	0	20.36	20.47	20.53			
Channel									
Frequency (MHz)									
15	QPSK	1	0	23.40	23.30	23.47			
15	QPSK	1	37	23.25	23.35	23.49	25	0	
15	QPSK	1	74	23.21	23.32	23.41			
15	QPSK	38	0	22.37	22.42	22.58			
15	QPSK	38	20	22.46	22.53	22.52	24	1	
15	QPSK	38	39	22.38	22.52	22.59			
15	QPSK	75	0	22.44	22.50	22.56			
15	16QAM	1	0	22.35	22.54	22.54			
15	16QAM	1	37	22.28	22.33	22.51	24	1	
15	16QAM	1	74	22.25	22.39	22.53			
15	16QAM	38	0	21.10	21.12	21.22			
15	16QAM	38	20	21.18	21.23	21.25	23	2	
15	16QAM	38	39	21.11	21.23	21.28			
15	16QAM	75	0	21.16	21.22	21.27			
15	64QAM	1	0	21.93	21.79	21.68			
15	64QAM	1	37	21.42	21.89	21.53	23	2	
15	64QAM	1	74	21.59	21.43	21.43			
15	64QAM	38	0	20.37	20.40	20.42			
15	64QAM	38	20	20.41	20.62	20.50	22	3	
15	64QAM	38	39	20.36	20.61	20.48			
15	64QAM	75	0	20.44	20.62	20.47			
Channel									
Frequency (MHz)									
10	QPSK	1	0	23.22	23.19	23.32			
10	QPSK	1	25	23.38	23.23	23.26	25	0	
10	QPSK	1	49	23.36	23.21	23.30			
10	QPSK	25	0	22.61	22.55	22.74			
10	QPSK	25	12	22.59	22.65	22.71	24	1	
10	QPSK	25	25	22.49	22.60	22.78			
10	QPSK	50	0	22.55	22.62	22.72			
10	16QAM	1	0	22.49	22.52	22.67			
10	16QAM	1	25	22.35	22.45	22.58	24	1	
10	16QAM	1	49	22.42	22.48	22.62			
10	16QAM	25	0	21.31	21.25	21.45			
10	16QAM	25	12	21.28	21.40	21.45	23	2	
10	16QAM	25	25	21.24	21.33	21.46			
10	16QAM	50	0	21.28	21.36	21.43			
10	64QAM	1	0	21.85	21.53	21.64			
10	64QAM	1	25	21.50	21.40	21.50	23	2	
10	64QAM	1	49	21.43	21.66	21.77			
10	64QAM	25	0	20.63	20.58	20.61			
10	64QAM	25	12	20.62	20.74	20.58	22	3	
10	64QAM	25	25	20.50	20.56	20.64			
10	64QAM	50	0	20.60	20.59	20.55			
Channel									
Frequency (MHz)									
5	QPSK	1	0	23.28	23.24	23.30			
5	QPSK	1	12	23.19	23.25	23.38	25	0	
5	QPSK	1	24	23.20	23.25	23.33			
5	QPSK	12	0	22.31	22.32	22.47			
5	QPSK	12	7	22.30	22.31	22.48	24	1	
5	QPSK	12	13	22.25	22.34	22.43			
5	QPSK	25	0	22.31	22.33	22.44			
5	16QAM	1	0	22.63	22.65	22.85			
5	16QAM	1	12	22.56	22.56	22.65	24	1	
5	16QAM	1	24	22.52	22.60	22.64			
5	16QAM	12	0	21.34	21.34	21.46			
5	16QAM	12	7	21.33	21.35	21.50	23	2	
5	16QAM	12	13	21.27	21.35	21.49			
5	16QAM	25	0	21.29	21.32	21.50			
5	64QAM	1	0	21.85	21.97	21.56			
5	64QAM	1	12	21.52	21.71	21.71	23	2	
5	64QAM	1	24	21.74	21.74	21.60			
5	64QAM	12	0	20.57	20.64	20.60			
5	64QAM	12	7	20.57	20.72	20.72	22	3	
5	64QAM	12	13	20.50	20.76	20.74			
5	64QAM	25	0	20.59	20.51	20.64			
Channel									
Frequency (MHz)									
3	QPSK	1	0	23.22	23.20	23.34			
3	QPSK	1	8	23.20	23.25	23.35	25	0	
3	QPSK	1	14	23.15	23.27	23.29			
3	QPSK	8	0	22.28	22.31	22.41			
3	QPSK	8	4	22.27	22.35	22.42	24	1	
3	QPSK	8	7	22.24	22.28	22.43			
3	QPSK	15	0	22.23	22.27	22			



Band 66									
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel									
Frequency (MHz)									
20	QPSK	1	0	23.83	23.75	23.64			
20	QPSK	1	49	23.95	23.76	23.67	25	0	
20	QPSK	1	99	23.81	23.73	23.60			
20	QPSK	50	0	22.75	22.73	22.73			
20	QPSK	50	24	22.80	22.75	22.75	24	1	
20	QPSK	50	50	22.85	22.82	22.81			
20	QPSK	100	0	22.78	22.75	22.72			
20	16QAM	1	0	22.72	22.63	22.76			
20	16QAM	1	49	22.60	22.55	22.81	24	1	
20	16QAM	1	99	22.40	22.71	22.45			
20	16QAM	50	0	21.39	21.33	21.47			
20	16QAM	50	24	21.45	21.32	21.52			
20	16QAM	50	50	21.39	21.28	21.54	23	2	
20	16QAM	100	0	21.45	21.35	21.48			
20	64QAM	1	0	21.88	21.63	21.89			
20	64QAM	1	49	21.81	21.81	21.90	23	2	
20	64QAM	1	99	21.83	21.50	21.42			
20	64QAM	50	0	20.99	20.75	20.78			
20	64QAM	50	24	21.05	20.88	20.83			
20	64QAM	50	50	20.85	20.91	20.80	22	3	
20	64QAM	100	0	20.69	20.69	20.61			
Channel									
Frequency (MHz)									
15	QPSK	1	0	23.62	23.55	23.51			
15	QPSK	1	37	23.65	23.62	23.64	25	0	
15	QPSK	1	74	23.63	23.68	23.81			
15	QPSK	36	0	22.50	22.30	22.51			
15	QPSK	36	20	22.46	22.39	22.59	24	1	
15	QPSK	36	39	22.39	22.32	22.54			
15	QPSK	75	0	22.45	22.34	22.51			
15	16QAM	1	0	22.65	22.56	22.83			
15	16QAM	1	37	22.55	22.53	22.75	24	1	
15	16QAM	1	74	22.43	22.82	22.80			
15	16QAM	36	0	21.44	21.32	21.48			
15	16QAM	36	20	21.48	21.40	21.60			
15	16QAM	36	39	21.39	21.31	21.54	23	2	
15	16QAM	75	0	21.47	21.35	21.50			
15	64QAM	1	1	21.81	21.84	21.88			
15	64QAM	1	37	21.73	21.98	21.75	23	2	
15	64QAM	1	74	21.67	21.86	21.79			
15	64QAM	36	0	20.71	20.78	20.72			
15	64QAM	36	20	20.68	20.81	20.76	22	3	
15	64QAM	36	39	20.58	20.71	20.78			
15	64QAM	75	0	20.70	20.94	20.69			
Channel									
Frequency (MHz)									
10	QPSK	1	0	23.54	23.64	23.62			
10	QPSK	1	25	23.40	23.62	23.52	25	0	
10	QPSK	1	49	23.56	23.28	23.61			
10	QPSK	25	0	22.57	22.46	22.66			
10	QPSK	25	12	22.48	22.54	22.67	24	1	
10	QPSK	25	25	22.58	22.47	22.70			
10	QPSK	50	0	22.61	22.52	22.65			
10	16QAM	1	0	22.80	22.70	22.77			
10	16QAM	1	25	22.68	22.48	22.63	24	1	
10	16QAM	1	49	22.32	22.31	22.63			
10	16QAM	25	0	21.66	21.48	21.71			
10	16QAM	25	12	21.56	21.53	21.69			
10	16QAM	25	25	21.61	21.45	21.69	23	2	
10	16QAM	50	0	21.61	21.55	21.70			
10	64QAM	1	0	21.87	21.81	21.83			
10	64QAM	1	25	21.99	21.80	21.84	23	2	
10	64QAM	1	49	21.86	21.85	21.96			
10	64QAM	25	0	21.07	21.27	21.35			
10	64QAM	25	12	21.12	21.23	21.33			
10	64QAM	25	25	21.04	21.27	21.38	22	3	
10	64QAM	50	0	21.07	21.23	21.35			
Channel									
Frequency (MHz)									
5	QPSK	1	0	23.53	23.41	23.52			
5	QPSK	1	12	23.32	23.44	23.55	25	0	
5	QPSK	1	24	23.31	23.61	23.62			
5	QPSK	12	0	22.63	22.44	22.74			
5	QPSK	12	7	22.50	22.52	22.73	24	1	
5	QPSK	12	13	22.42	22.49	22.70			
5	QPSK	25	0	22.52	22.51	22.74			
5	16QAM	1	0	22.87	22.75	23.03			
5	16QAM	1	12	22.78	22.77	22.99	24	1	
5	16QAM	1	24	22.67	22.75	22.97			
5	16QAM	12	0	21.62	21.47	21.75			
5	16QAM	12	7	21.57	21.53	21.78	23	2	
5	16QAM	12	13	21.51	21.49	21.71			
5	16QAM	25	0	21.61	21.52	21.72			
5	64QAM	1	0	21.91	21.81	22.28			
5	64QAM	1	12	21.83	21.78	22.01	23	2	
5	64QAM	1	24	21.94	22.00	22.20			
5	64QAM	12	0	20.69	20.79	20.93			
5	64QAM	12	7	20.83	20.76	21.01	22	3	
5	64QAM	12	13	20.83	20.77	21.01			
5	64QAM	25	0	20.70	20.75	20.90			
Channel									
Frequency (MHz)									
3	QPSK	1	0	23.51	23.40	23.64			
3	QPSK	1	8	23.55	23.47	23.57	25	0	
3	QPSK	1	14	23.51	23.17	23.60			
3	QPSK	8	0	22.58	22.50	22.71			
3	QPSK	8	4	22.62	22.51	22.70	24	1	
3	QPSK	8	7	22.62	22.45	22.69			
3	QPSK	15	0	22.61	22.51	22.68			
3	16QAM	1	0	22.91	22.80	22.96			
3	16QAM	1	8	22.94	22.82	23.03	24	1	
3	16QAM	1	14	22.89	22.81	22.92			
3	16QAM	8	0	21.64	21.57	21.76			
3	16QAM	8	4	21.68	21.53	21.76			
3	16QAM	8	7	21.62	21.53	21.72	23	2	
3	16QAM	15	0	21.65	21.52	21.71			
3	64QAM	1	0	22.13	22.10	22.20			
3	64QAM	1	8	22.26	22.12	22.40	23	2	
3	64QAM	1	14	22.18	22.00	22.11			
3	64QAM	8	0	21.01	20.96	20.89			
3	64QAM	8	4	21.03	20.94	20.91	22	3	
3	64QAM	8	7	20.87	20.98	20.95			
3	64QAM	15	0	20.84	20.87	20.84			
Channel									
Frequency (MHz)									
1.4	QPSK	1	0	23.43	23.32	23.54			
1.4	QPSK	1	3	23.51	23.41	23.62	25	0	
1.4	QPSK	1	5	23.44	23.35	23.57			
1.4	QPSK	3	0	23.48	23.38	23.61			
1.4	QPSK	3	1	23.50	23.39	23.62			
1.4	QPSK	3	3	23.48	23.34	23.55	24	1	
1.4	QPSK	8	0	22.54	22.44	22.62			
1.4	16QAM	1	0	22.81	22.70	22.88			
1.4	16QAM	1	3	22.85	22.75	22.93			
1.4	16QAM	1	5	22.85	22.65	22.87	24	1	
1.4	16QAM	3	0	22.49	22.47	22.66			
1.4	16QAM	3	1	22.61	22.51	22.71			
1.4	16QAM	3	3	22.50	22.43	22.61			
1.4	16QAM	6	0	21.60	21.48	21.71	23	2	
1.4	64QAM	1	0	21.88	21.95	21.88			
1.4	64QAM	1	3	21.82	21.95	22.09			
1.4	64QAM	1	5	21.81	21.94	21.93	23	2	
1.4	64QAM	3	0	21.92	21.95	22.00			
1.4	64QAM	3	1	21.88	21.99	21.99			
1.4	64QAM	3	3	21.82	21.90	21.98			
1.4	64QAM	6	0	20.82	20.89	20.83	22	3	

Band 71									
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel									
Frequency (MHz)									
20	QPSK	1	0	23.75	23.81	23.71			
20	QPSK	1	49	23.67	23.69	23.64	25	0	
20	QPSK	1	99	23.58	23.61	23.58			
20	QPSK	50	0	22.73	22.76	22.71			
20	QPSK	50	24	22.71	22.71	22.69	24	1	
20	QPSK	50	50	22.68	22.69	22.67			
20									



Band 38(only on channel required)									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch / Freq	Power Mid Ch / Freq	Power High Ch / Freq	Tune-up limit (dBm)	MFR (dB)	
Channel									
Frequency (MHz)									
20	QPSK	1	0	21.37	22.22	23.10			
20	QPSK	1	48	23.41	23.20	23.41	25	0	
20	QPSK	50	0	22.04	22.20	22.44			
20	QPSK	50	24	22.64	22.44	22.44	24	1	
20	QPSK	50	48	22.48	22.48	22.48			
20	QPSK	100	0	22.36	22.41	22.34			
20	HQAM	1	0	22.24	22.27	22.31			
20	HQAM	1	48	22.48	22.48	22.48	24	1	
20	HQAM	1	96	22.47	22.45	22.45			
20	HQAM	50	0	21.46	21.30	21.41			
20	HQAM	50	24	21.40	21.45	21.35	23	2	
20	HQAM	50	48	21.44	21.51	21.40			
20	HQAM	100	0	21.42	21.47	21.37			
20	HQAM	100	0	21.08	21.15	21.15			
20	HQAM	1	48	21.33	21.17	21.15	23	2	
20	HQAM	1	96	21.30	21.18	21.20			
20	HQAM	50	0	20.56	20.30	20.40			
20	HQAM	50	24	20.55	20.38	20.38	22	3	
20	HQAM	50	48	20.52	20.43	20.43			
20	HQAM	100	0	20.58	20.38	20.32			
Channel									
Frequency (MHz)									
15	QPSK	1	0	23.35	23.24	23.20			
15	QPSK	1	48	23.37	23.32	23.34	25	0	
15	QPSK	1	96	23.35	23.34	23.32			
15	QPSK	38	0	22.37	22.27	22.33			
15	QPSK	38	20	22.36	22.28	22.28	24	1	
15	QPSK	38	38	22.41	22.45	22.50			
15	QPSK	75	0	22.38	22.48	22.45			
15	HQAM	1	0	22.15	22.17	22.19			
15	HQAM	1	37	22.21	22.28	22.27	24	1	
15	HQAM	1	74	22.37	22.29	22.30			
15	HQAM	38	0	21.22	21.10	21.22			
15	HQAM	38	20	21.27	21.30	21.25	23	2	
15	HQAM	38	38	21.28	21.34	21.32			
15	HQAM	75	0	21.23	21.34	21.34			
15	HQAM	1	0	21.20	21.11	21.19			
15	HQAM	1	37	21.25	21.27	21.25	23	2	
15	HQAM	1	74	21.35	21.33	21.33			
15	HQAM	38	0	20.63	20.25	20.37			
15	HQAM	38	20	20.56	20.31	20.41	22	3	
15	HQAM	38	38	20.61	20.28	20.36			
15	HQAM	75	0	20.58	20.34	20.48			
Channel									
Frequency (MHz)									
10	QPSK	1	0	23.19	23.21	23.13			
10	QPSK	1	25	23.19	23.20	23.20	25	0	
10	QPSK	1	48	23.03	23.29	23.26			
10	QPSK	25	0	22.40	22.40	22.23			
10	QPSK	25	25	22.22	22.31	22.31	24	1	
10	QPSK	50	0	22.37	22.40	22.28			
10	HQAM	1	0	22.30	22.22	22.28			
10	HQAM	1	25	22.38	22.22	22.42	24	1	
10	HQAM	1	48	22.36	22.25	22.36			
10	HQAM	25	0	21.25	21.26	21.30			
10	HQAM	25	12	21.34	21.34	21.28	23	2	
10	HQAM	25	25	21.43	21.33	21.33			
10	HQAM	50	0	21.39	21.40	21.31			
10	HQAM	50	0	21.47	21.30	21.43			
10	HQAM	1	25	21.30	21.11	21.19	23	2	
10	HQAM	1	48	21.50	21.25	21.39			
10	HQAM	38	0	20.83	20.50	20.65			
10	HQAM	38	25	20.82	20.57	20.67	22	3	
10	HQAM	25	25	20.71	20.53	20.66			
10	HQAM	50	0	20.73	20.49	20.60			
Channel									
Frequency (MHz)									
5	QPSK	1	0	23.11	23.02	23.12			
5	QPSK	1	12	23.39	23.20	23.25	25	0	
5	QPSK	1	24	23.35	23.26	23.25			
5	QPSK	12	0	22.34	22.30	22.36			
5	QPSK	12	7	22.37	22.27	22.38	24	1	
5	QPSK	12	14	22.36	22.41	22.38			
5	QPSK	25	0	22.37	22.38	22.31			
5	HQAM	1	0	22.25	22.28	22.31			
5	HQAM	1	12	22.58	22.55	22.45	24	1	
5	HQAM	1	24	22.35	22.83	22.89			
5	HQAM	12	0	21.29	21.31	21.35			
5	HQAM	12	7	21.34	21.39	21.38			
5	HQAM	12	14	21.34	21.32	21.34	23	2	
5	HQAM	25	0	21.41	21.36	21.43			
5	HQAM	1	0	21.56	21.34	21.35			
5	HQAM	1	12	21.43	21.18	21.35	23	2	
5	HQAM	1	24	21.47	21.28	21.46			
5	HQAM	12	0	20.69	20.50	20.64			
5	HQAM	12	7	20.74	20.49	20.63	22	3	
5	HQAM	12	14	20.72	20.49	20.60			
5	HQAM	25	0	20.77	20.51	20.69			

Band 41 (2.6G Band)									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch / Freq	Power Mid Ch / Freq	Power High Ch / Freq	Tune-up limit (dBm)	MFR (dB)	
Channel									
Frequency (MHz)									
20	QPSK	1	0	24.06	23.85	23.93			
20	QPSK	1	48	24.13	23.91	24.27	25	0	
20	QPSK	1	96	24.03	23.70	24.00			
20	QPSK	50	0	23.21	23.01	23.29			
20	QPSK	50	24	23.28	23.08	23.34	24	1	
20	QPSK	50	48	23.26	23.07	23.28			
20	HQAM	1	0	23.08	23.21	23.21			
20	HQAM	1	48	23.05	23.15	23.07	24	1	
20	HQAM	1	96	23.18	23.23	23.36			
20	HQAM	50	0	22.22	22.19	22.28			
20	HQAM	50	24	22.28	22.16	22.31	23	2	
20	HQAM	50	48	22.20	22.11	22.28			
20	HQAM	100	0	22.24	22.21	22.21			
20	HQAM	100	0	21.87	21.85	21.87			
20	HQAM	1	48	21.78	21.87	21.89	23	2	
20	HQAM	1	96	21.86	21.86	21.81			
20	HQAM	50	0	21.14	21.35	21.13			
20	HQAM	50	24	21.18	21.28	21.13	22	3	
20	HQAM	50	48	21.09	21.27	21.09			
20	HQAM	100	0	21.14	21.29	21.21	22	3	
Channel									
Frequency (MHz)									
15	QPSK	1	0	23.61	23.84	23.89			
15	QPSK	1	37	23.67	23.68	23.62	25	0	
15	QPSK	1	74	23.74	23.81	23.89			
15	QPSK	38	0	22.82	22.79	22.88			
15	QPSK	38	20	22.86	22.85	22.86	24	1	
15	QPSK	38	38	22.83	22.84	22.84			
15	QPSK	75	0	22.87	22.80	23.03			
15	HQAM	1	0	22.98	22.94	22.91			
15	HQAM	1	37	22.82	22.88	22.88	24	1	
15	HQAM	1	74	22.84	22.84	22.82			
15	HQAM	38	0	21.86	21.83	21.84			
15	HQAM	38	20	21.81	21.85	21.85	23	2	
15	HQAM	38	38	21.86	21.86	21.86			
15	HQAM	75	0	21.86	21.91	22.04			
15	HQAM	1	0	21.74	22.02	21.70			
15	HQAM	1	37	21.84	21.75	21.87	23	2	
15	HQAM	1	74	21.68	21.82	21.69			
15	HQAM	38	0	21.08	21.28	21.14			
15	HQAM	38	20	21.12	21.24	21.17	22	3	
15	HQAM	38	38	21.16	21.20	21.10			
15	HQAM	75	0	21.14	21.30	21.14	22	3	
Channel									
Frequency (MHz)									
10	QPSK	1	0	23.71	23.78	23.91			
10	QPSK	1	25	23.85	23.91	23.94	25	0	
10	QPSK	1	48	24.03	24.06	24.02			
10	QPSK	25	0	23.13	23.05	23.17			
10	QPSK	25	12	23.13	23.06	23.15	24	1	
10	QPSK	25	25	23.08	23.12	23.21			
10	QPSK	50	0	23.06	23.03	23.00			
10	HQAM	1	0	23.12	23.02	23.15			
10	HQAM	1	25	23.04	23.12	23.28	24	1	
10	HQAM	1	48	23.03	22.94	23.00			
10	HQAM	25	0						



Reduced power for Hotspot on-LAT

GSM1900 TX Channel	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame Average Power (dBm)			Tune-up Limit (dBm)
	512	661	810		1850.2	1880	1909.8	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM 1 Tx slot	28.92	28.92	28.91	30.00	19.92	19.92	19.91	21.00
GPRS 1 Tx slot	28.45	28.72	28.40	30.00	19.45	19.72	19.40	21.00
GPRS 2 Tx slots	25.48	25.09	25.84	29.90	19.48	20.09	19.84	20.90
GPRS 3 Tx slots	24.29	24.17	23.58	25.40	20.03	19.91	19.32	21.14
GPRS 4 Tx slots	22.82	22.61	22.01	23.90	19.82	19.61	19.01	20.90
EDGE 1 Tx slot	25.88	25.81	25.79	27.50	18.88	18.81	18.79	18.50
EDGE 2 Tx slots	23.58	23.30	23.48	25.00	17.58	17.30	17.48	19.00
EDGE 3 Tx slots	22.05	22.00	22.17	24.00	17.79	17.74	17.91	18.74
EDGE 4 Tx slots	20.69	20.65	20.58	22.40	17.69	17.65	17.58	18.40

Band TX Channel	WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)
	9262	9400	9638		1312	1413	1513	
Rx Channel	9662	9800	9638		1537	1638	1738	
Frequency (MHz)	1852.4	1880	1907.6		1722.4	1750.6	1778.2	
3GPP Rel 99 AMR 12.2Kbps	21.28	21.35	21.33	21.80	20.61	20.48	20.45	21.00
3GPP Rel 99 RMC 12.2Kbps	21.33	21.41	21.35	21.80	20.63	20.53	20.48	21.00
3GPP Rel 6 HSDPA Subtest-1	20.15	20.21	20.16	20.80	19.44	19.37	19.27	20.00
3GPP Rel 6 HSDPA Subtest-2	20.19	20.22	20.13	20.80	19.42	19.37	19.28	20.00
3GPP Rel 6 HSDPA Subtest-3	19.71	19.32	19.60	20.30	18.95	18.88	18.76	19.50
3GPP Rel 6 HSDPA Subtest-4	19.67	19.76	19.63	20.30	18.96	18.89	18.79	19.50
3GPP Rel 8 DC-HSDPA Subtest-1	20.11	20.12	20.16	20.80	19.41	19.32	19.24	20.00
3GPP Rel 8 DC-HSDPA Subtest-2	20.16	20.12	20.19	20.80	19.38	19.29	19.22	20.00
3GPP Rel 8 DC-HSDPA Subtest-3	19.76	19.31	19.64	20.30	18.94	18.89	18.78	19.50
3GPP Rel 8 DC-HSDPA Subtest-4	19.61	19.72	19.69	20.30	18.91	18.83	18.72	19.50
3GPP Rel 6 HSUPA Subtest-1	20.20	20.16	20.15	20.80	19.47	19.38	19.25	20.00
3GPP Rel 6 HSUPA Subtest-2	18.17	18.20	18.14	18.80	17.45	17.40	17.34	18.00
3GPP Rel 6 HSUPA Subtest-3	19.17	19.21	19.14	19.80	18.47	18.38	18.29	19.00
3GPP Rel 6 HSUPA Subtest-4	18.13	18.17	18.12	18.80	17.46	17.41	17.30	18.00
3GPP Rel 6 HSUPA Subtest-5	20.10	20.20	20.20	20.80	19.50	19.40	19.30	20.00
3GPP Rel 7 HSPA+ (16QAM) Subtest-1	17.92	17.99	17.77	18.80	17.21	17.19	17.18	18.00



Band 2 (1900MHz Band) Part 24E									
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel									
Frequency (MHz)									
20	QPSK	1	0	20.15	20.22	20.31	21.2	0	
20	QPSK	1	49	20.07	20.11	20.22			
20	QPSK	1	99	20.11	20.15	20.19	21.2	0	
20	QPSK	50	0	20.17	20.20	20.27			
20	QPSK	50	24	20.15	20.16	20.22	21.2	0	
20	QPSK	50	50	20.05	20.13	20.17			
20	QPSK	100	0	20.02	20.10	20.21	21.2	0	
20	16QAM	1	0	20.17	20.23	20.24			
20	16QAM	1	49	20.12	20.15	20.17	21.2	0	
20	16QAM	1	99	20.06	20.10	20.12			
20	16QAM	50	0	20.01	20.04	20.07	21.2	0	
20	16QAM	50	24	20.04	20.05	20.05			
20	16QAM	50	50	19.92	19.95	19.98	21.2	0	
20	16QAM	100	0	20.01	19.92	20.05			
20	64QAM	1	0	20.11	20.15	20.11	21.2	0	
20	64QAM	1	49	20.13	20.14	20.16			
20	64QAM	1	99	20.11	19.95	19.98	21.2	0	
20	64QAM	50	0	20.05	19.99	20.11			
20	64QAM	50	24	20.07	19.96	20.08	21.2	0	
20	64QAM	50	50	20.02	19.97	20.04			
20	64QAM	100	0	20.04	19.95	20.03	21.2	0	
20	64QAM	1	0	20.11	20.15	20.11			
Channel									
Frequency (MHz)									
15	QPSK	1	0	20.16	20.10	20.16	21.2	0	
15	QPSK	1	37	20.07	20.10	20.09			
15	QPSK	1	74	20.03	20.08	20.00	21.2	0	
15	QPSK	36	0	20.24	20.17	20.21			
15	QPSK	36	20	20.22	20.15	20.18	21.2	0	
15	QPSK	36	39	20.15	20.14	20.16			
15	QPSK	75	0	20.21	20.19	20.23	21.2	0	
15	16QAM	1	0	20.21	20.19	20.09			
15	16QAM	1	37	20.11	20.19	20.09	21.2	0	
15	16QAM	1	74	20.11	20.24	19.98			
15	16QAM	36	0	20.02	19.94	19.97	21.2	0	
15	16QAM	36	20	19.98	19.98	19.95			
15	16QAM	36	39	19.89	19.93	19.90	21.2	0	
15	16QAM	75	0	19.97	19.96	19.99			
15	64QAM	1	0	20.02	20.13	20.08	21.2	0	
15	64QAM	1	37	20.01	20.17	19.98			
15	64QAM	1	74	19.96	20.08	19.99	21.2	0	
15	64QAM	36	0	20.28	20.26	20.29			
15	64QAM	36	20	20.27	20.23	20.25	21.2	0	
15	64QAM	36	39	20.24	20.22	20.22			
15	64QAM	75	0	20.24	20.21	20.24	21.2	0	
15	64QAM	1	0	20.24	20.21	20.24			
Channel									
Frequency (MHz)									
10	QPSK	1	0	20.28	20.29	20.27	21.2	0	
10	QPSK	1	25	20.23	20.26	20.29			
10	QPSK	1	49	20.13	20.13	20.12	21.2	0	
10	QPSK	25	0	20.08	20.06	20.07			
10	QPSK	25	12	20.05	20.02	20.06	21.2	0	
10	QPSK	25	25	20.00	19.95	19.96			
10	QPSK	50	0	20.06	20.00	20.04	21.2	0	
10	16QAM	1	0	20.30	20.28	20.27			
10	16QAM	1	25	20.30	20.22	20.17	21.2	0	
10	16QAM	1	49	20.14	20.26	20.09			
10	16QAM	25	0	20.12	20.10	20.07	21.2	0	
10	16QAM	25	12	20.09	20.10	20.10			
10	16QAM	25	25	20.02	20.03	19.99	21.2	0	
10	16QAM	50	0	20.07	20.06	20.08			
10	64QAM	1	0	20.28	20.24	20.28	21.2	0	
10	64QAM	1	25	20.16	20.20	20.15			
10	64QAM	1	49	20.03	20.11	20.14	21.2	0	
10	64QAM	25	0	20.17	20.12	20.17			
10	64QAM	25	12	20.16	20.08	20.12	21.2	0	
10	64QAM	25	25	20.04	20.05	20.05			
10	64QAM	50	0	20.12	20.07	20.06	21.2	0	
10	64QAM	1	0	20.28	20.24	20.28			
Channel									
Frequency (MHz)									
5	QPSK	1	0	20.28	20.23	20.19	21.2	0	
5	QPSK	1	12	20.18	20.12	20.12			
5	QPSK	1	24	20.18	20.20	20.05	21.2	0	
5	QPSK	12	0	20.21	20.22	20.29			
5	QPSK	12	7	20.21	20.25	20.26	21.2	0	
5	QPSK	12	13	20.24	20.29	20.21			
5	QPSK	25	0	20.30	20.29	20.29	21.2	0	
5	16QAM	1	0	20.26	20.20	20.19			
5	16QAM	1	12	20.20	20.27	20.11	21.2	0	
5	16QAM	1	24	20.13	20.23	20.08			
5	16QAM	12	0	20.15	20.14	20.07	21.2	0	
5	16QAM	12	7	20.10	20.15	20.06			
5	16QAM	12	13	20.01	20.09	19.99	21.2	0	
5	16QAM	25	0	20.09	20.07	20.04			
5	64QAM	1	0	20.17	20.24	20.25	21.2	0	
5	64QAM	1	12	20.25	20.30	20.15			
5	64QAM	1	24	20.12	20.21	20.20	21.2	0	
5	64QAM	12	0	20.22	20.14	20.12			
5	64QAM	12	7	20.17	20.22	20.11	21.2	0	
5	64QAM	12	13	20.05	20.10	20.04			
5	64QAM	25	0	20.08	20.10	20.06	21.2	0	
5	64QAM	1	0	20.28	20.10	20.06			
Channel									
Frequency (MHz)									
3	QPSK	1	0	20.25	20.29	20.23	21.2	0	
3	QPSK	1	8	20.18	20.24	20.15			
3	QPSK	1	14	20.12	20.21	20.04	21.2	0	
3	QPSK	8	0	20.13	20.12	20.29			
3	QPSK	8	7	20.24	20.11	20.21	21.2	0	
3	QPSK	8	15	20.23	20.20	20.23			
3	16QAM	1	0	20.24	20.20	20.28	21.2	0	
3	16QAM	1	8	20.28	20.24	20.10			
3	16QAM	1	14	20.17	20.28	20.04	21.2	0	
3	16QAM	8	0	20.13	20.07	20.06			
3	16QAM	8	4	20.08	20.11	19.98	21.2	0	
3	16QAM	8	7	19.98	20.05	19.93			
3	16QAM	15	0	20.02	20.02	20.00	21.2	0	
3	64QAM	1	0	20.23	20.27	20.16			
3	64QAM	1	8	20.25	20.25	20.19	21.2	0	
3	64QAM	1	14	20.18	20.14	20.07			
3	64QAM	8	0	20.18	20.08	20.06	21.2	0	
3	64QAM	8	4	20.14	20.15	20.03			
3	64QAM	8	7	20.02	20.05	19.96	21.2	0	
3	64QAM	15	0	20.04	20.01	20.02			
Channel									
Frequency (MHz)									
1.4	QPSK	1	0	20.10	20.17	20.26	21.2	0	
1.4	QPSK	1	0	20.02	20.16	20.21			
1.4	QPSK	1	5	20.06	20.10	20.14	21.2	0	
1.4	QPSK	3	0	20.12	20.15	20.22			
1.4	QPSK	3	1	20.08	20.13	20.17	21.2	0	
1.4	QPSK	3	3	20.00	20.08	20.12			
1.4	QPSK	6	0	19.97	20.05	20.16	21.2	0	
1.4	16QAM	1	0	20.12	20.18	20.19			
1.4	16QAM	1	3	20.07	20.10	20.12	21.2	0	
1.4	16QAM	1	5	20.01	20.05	20.07			
1.4	16QAM	3	0	19.96	19.99	20.02	21.2	0	
1.4	16QAM	3	1	19.99	20.00	20.00			
1.4	16QAM	3	3	19.87	19.90	19.93	21.2	0	
1.4	16QAM	6	0	19.96	19.99	20.00			
1.4	64QAM	1	0	20.06	20.10	20.06	21.2	0	
1.4	64QAM	1	3	20.08	20.09	20.11			
1.4	64QAM	1	5	20.06	19.90	19.93	21.2	0	
1.4	64QAM	3	0	20.00	19.94	20.06			
1.4	64QAM	3	1	20.02	19.91	20.03	21.2	0	
1.4	64QAM	3	3	19.97	19.92	19.99			
1.4	64QAM	6	0	19.99	19.90	19.98	21.2	0	
1.4	64QAM	1	0	20.04	20.01	20.02			

Band 4 (AWS Band) Part 27L (only on channel required)									
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel									
Frequency (MHz)									
20	QPSK	1	0	20.11	20.29	20.13	21	0	
20	QPSK	1	49	20.18	20.18	20.07			
20	QPSK	1	99	20.10	20.08	19.94	21	0	
20	Q								



Band 25 (1900MHz Band) Part 24E										
BW (MHz)	Modulation	RB Size	RB Offset	Power			Tune-up limit (dBm)	MPR (dB)	Channel	
				Low Ch. / Freq. (MHz)	Middle Ch. / Freq. (MHz)	High Ch. / Freq. (MHz)			132072	132572
Channel										
Frequency (MHz)										
20	QPSK	1	0	20.30	20.33	20.36	21.2	0	Channel	
20	QPSK	1	49	20.27	20.32	20.33			Channel	
20	QPSK	1	99	20.12	20.28	20.29			Channel	
20	QPSK	50	0	20.15	20.20	20.25	21.2	0	Channel	
20	QPSK	50	24	20.16	20.25	20.30			Channel	
20	QPSK	50	50	20.12	20.25	20.25			Channel	
20	QPSK	100	0	20.13	20.21	20.26	21.2	0	Channel	
20	16QAM	1	0	20.21	20.28	20.33			Channel	
20	16QAM	1	49	20.17	20.19	20.23			Channel	
20	16QAM	1	99	20.09	20.15	20.16	21.2	0	Channel	
20	16QAM	50	0	20.03	20.06	20.07			Channel	
20	16QAM	50	24	20.01	20.07	20.14			Channel	
20	16QAM	50	50	20.03	20.08	20.09	21.2	0	Channel	
20	16QAM	100	0	20.07	20.12	20.11			Channel	
20	64QAM	1	0	20.16	20.07	20.21			Channel	
20	64QAM	1	49	20.13	20.21	20.23	21.2	0	Channel	
20	64QAM	1	99	20.04	20.10	20.01			Channel	
20	64QAM	50	0	20.16	20.08	20.06			Channel	
20	64QAM	50	24	20.14	20.08	20.17	21.2	0	Channel	
20	64QAM	50	50	20.07	20.12	20.08			Channel	
20	64QAM	100	0	20.11	20.12	20.14			Channel	
Channel										
Frequency (MHz)										
15	QPSK	1	0	20.25	20.17	20.10	21.2	0	Channel	
15	QPSK	1	37	20.11	20.17	20.11			Channel	
15	QPSK	1	74	20.08	20.12	20.04			Channel	
15	QPSK	36	0	20.29	20.24	20.21	21.2	0	Channel	
15	QPSK	36	20	20.28	20.21	20.24			Channel	
15	QPSK	36	39	20.24	20.31	20.22			Channel	
15	QPSK	75	0	20.26	20.29	20.21	21.2	0	Channel	
15	16QAM	1	0	20.34	20.17	20.26			Channel	
15	16QAM	1	37	20.20	20.21	20.25			Channel	
15	16QAM	1	74	20.12	20.24	20.11	21.2	0	Channel	
15	16QAM	36	0	20.31	20.23	20.21			Channel	
15	16QAM	36	20	20.31	20.25	20.23			Channel	
15	16QAM	36	39	20.26	20.30	20.26	21.2	0	Channel	
15	16QAM	75	0	20.31	20.34	20.23			Channel	
15	64QAM	1	1	20.19	20.12	20.02			Channel	
15	64QAM	1	37	20.10	20.11	20.05	21.2	0	Channel	
15	64QAM	1	74	20.06	20.15	20.24			Channel	
15	64QAM	36	0	20.13	20.05	20.26			Channel	
15	64QAM	36	20	20.34	20.37	20.28	21.2	0	Channel	
15	64QAM	36	39	20.28	20.36	20.30			Channel	
15	64QAM	75	0	20.31	20.32	20.22			Channel	
Channel										
Frequency (MHz)										
10	QPSK	1	0	20.10	19.95	20.06	21.2	0	Channel	
10	QPSK	1	25	20.06	20.11	20.07			Channel	
10	QPSK	1	49	19.89	19.99	19.95			Channel	
10	QPSK	25	0	20.17	20.05	20.05	21.2	0	Channel	
10	QPSK	25	12	20.31	20.16	20.16			Channel	
10	QPSK	25	25	20.10	20.13	20.12			Channel	
10	QPSK	50	0	20.11	20.14	20.04	21.2	0	Channel	
10	16QAM	1	0	20.31	20.23	20.32			Channel	
10	16QAM	1	25	20.21	20.28	20.23			Channel	
10	16QAM	1	49	20.17	20.34	20.29	21.2	0	Channel	
10	16QAM	25	0	20.15	20.10	20.10			Channel	
10	16QAM	25	12	20.22	20.23	20.21			Channel	
10	16QAM	25	25	20.16	20.17	20.13	21.2	0	Channel	
10	16QAM	50	0	20.15	20.18	20.08			Channel	
10	64QAM	1	0	20.28	20.19	20.17			Channel	
10	64QAM	1	25	20.22	20.12	20.24	21.2	0	Channel	
10	64QAM	1	49	20.11	20.28	20.25			Channel	
10	64QAM	25	0	20.24	20.14	20.13			Channel	
10	64QAM	25	12	20.22	20.20	20.22	21.2	0	Channel	
10	64QAM	25	25	20.15	20.20	20.14			Channel	
10	64QAM	50	0	20.17	20.20	20.08			Channel	
Channel										
Frequency (MHz)										
5	QPSK	1	0	20.11	20.08	19.95	21.2	0	Channel	
5	QPSK	1	12	20.01	20.02	20.06			Channel	
5	QPSK	1	24	20.01	20.07	19.94			Channel	
5	QPSK	12	0	20.16	20.15	20.08	21.2	0	Channel	
5	QPSK	12	7	20.12	20.15	20.06			Channel	
5	QPSK	12	13	20.13	20.15	20.05			Channel	
5	QPSK	25	0	20.10	20.15	20.08	21.2	0	Channel	
5	16QAM	1	0	20.22	20.24	20.10			Channel	
5	16QAM	1	12	20.13	20.12	20.07			Channel	
5	16QAM	1	24	20.09	20.14	20.05	21.2	0	Channel	
5	16QAM	12	0	20.17	20.18	20.11			Channel	
5	16QAM	12	7	20.17	20.17	20.10			Channel	
5	16QAM	12	13	20.17	20.16	20.10	21.2	0	Channel	
5	16QAM	25	0	20.13	20.15	20.11			Channel	
5	64QAM	1	1	20.18	20.12	19.98			Channel	
5	64QAM	1	12	20.28	20.25	20.25	21.2	0	Channel	
5	64QAM	1	24	20.29	20.34	20.20			Channel	
5	64QAM	12	0	20.23	20.21	20.15			Channel	
5	64QAM	12	7	20.19	20.20	20.13	21.2	0	Channel	
5	64QAM	12	13	20.17	20.21	20.14			Channel	
5	64QAM	25	0	20.16	20.18	20.12			Channel	
Channel										
Frequency (MHz)										
3	QPSK	1	0	20.06	20.02	19.99	21.2	0	Channel	
3	QPSK	1	8	20.01	20.01	20.01			Channel	
3	QPSK	1	14	20.03	20.08	19.99			Channel	
3	QPSK	8	0	20.13	20.09	20.07	21.2	0	Channel	
3	QPSK	8	4	20.10	20.15	20.09			Channel	
3	QPSK	8	7	20.08	20.09	20.06			Channel	
3	QPSK	15	0	20.12	20.14	20.05	21.2	0	Channel	
3	16QAM	1	0	20.22	20.20	20.05			Channel	
3	16QAM	1	8	20.08	20.11	20.06			Channel	
3	16QAM	1	14	20.17	20.17	20.08	21.2	0	Channel	
3	16QAM	8	0	20.19	20.15	20.14			Channel	
3	16QAM	8	4	20.13	20.21	20.14			Channel	
3	16QAM	8	7	20.13	20.12	20.07	21.2	0	Channel	
3	16QAM	15	0	20.15	20.14	20.11			Channel	
3	64QAM	1	0	20.04	20.11	19.96			Channel	
3	64QAM	1	8	20.33	20.27	20.28	21.2	0	Channel	
3	64QAM	1	14	20.25	20.28	20.23			Channel	
3	64QAM	8	0	20.13	20.16	20.07			Channel	
3	64QAM	8	4	20.17	20.18	20.08	21.2	0	Channel	
3	64QAM	8	7	20.11	20.14	20.10			Channel	
3	64QAM	15	0	20.17	20.16	20.09			Channel	
Channel										
Frequency (MHz)										
1.4	QPSK	1	0	20.22	20.14	20.07	21.2	0	Channel	
1.4	QPSK	1	3	20.08	20.16	20.07			Channel	
1.4	QPSK	1	5	20.05	20.09	20.01			Channel	
1.4	QPSK	3	0	20.28	20.21	20.18	21.2	0	Channel	
1.4	QPSK	3	1	20.25	20.18	20.21			Channel	
1.4	QPSK	3	3	20.21	20.28	20.19			Channel	
1.4	QPSK	8	0	20.23	20.26	20.18	21.2	0	Channel	
1.4	16QAM	1	0	20.31	20.14	20.23			Channel	
1.4	16QAM	1	3	20.17	20.18	20.22			Channel	
1.4	16QAM	1	5	20.09	20.21	20.08	21.2	0	Channel	
1.4	16QAM	3	0	20.28	20.20	20.16			Channel	
1.4	16QAM	3	1	20.28	20.22	20.20			Channel	
1.4	16QAM	3	3	20.23	20.27	20.23	21.2	0	Channel	
1.4	16QAM	6	0	20.28	20.31	20.20			Channel	
1.4	64QAM	1	0	20.16	20.09	19.99			Channel	
1.4	64QAM	1	3	20.07	20.08	20.02	21.2	0	Channel	
1.4	64QAM	1	5	20.03	20.12	20.21			Channel	
1.4	64QAM	3	0	20.10	20.02	20.23			Channel	
1.4	64QAM	3	1	20.31	20.34	20.25	21.2	0	Channel	
1.4	64QAM	3	3	20.25	20.33	20.27			Channel	
1.4	64QAM	6	0	20.28	20.29	20.19			Channel	

Band 66										
BW (MHz)	Modulation	RB Size	RB Offset	Power			Tune-up limit (dBm)	MPR (dB)	Channel	
				Low Ch. / Freq. (MHz)	Middle Ch. / Freq. (MHz)	High Ch. / Freq. (MHz)			132072	132572
Channel										
Frequency (MHz)										
20	QPSK	1	0	20.14	20.12	20.08	21	0	Channel	
20	QPSK	1	49	20.26	20.06	20.05			Channel	
20	QPSK	1	99	20.06	19.9					



Band 38(only on channel required)										
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch / Freq.	Power Mid Ch / Freq.	Power High Ch / Freq.	Tune-up Int. (min)	MFR (dB)		
Channel										
				37650	38650	38150				
30	QPSK	1	0	22.68	22.65	22.50	24.2	0		
30	QPSK	1	49	22.76	22.74	22.64				
30	QPSK	1	99	22.87	22.78	22.66				
30	QPSK	50	0	22.57	22.53	22.44				
30	QPSK	50	24	22.54	22.46	22.44	24	0.2		
30	QPSK	50	99	22.54	22.53	22.44				
30	QPSK	100	0	22.59	22.53	22.52				
30	QPSK	100	24	22.52	22.53	22.46	24	0.2		
30	QPSK	100	99	22.54	22.48	22.46				
30	QPSK	50	24	21.98	21.99	21.89	23	1.2		
30	QPSK	50	99	21.98	22.01	21.91				
30	QPSK	100	0	22.00	22.00	21.90				
30	QPSK	100	24	21.90	21.98	21.93	23	1.2		
30	QPSK	100	99	21.90	21.98	21.91				
30	QPSK	50	0	20.96	20.94	20.88	22	2.2		
30	QPSK	50	24	20.96	20.94	20.88				
30	QPSK	50	99	20.97	21.04	20.93				
30	QPSK	100	0	20.98	21.02	20.91				
Channel										
				37775	38650	38225				
15	QPSK	1	0	22.61	22.44	22.42	24.2	0		
15	QPSK	1	37	22.70	22.56	22.46				
15	QPSK	1	74	22.72	22.61	22.56				
15	QPSK	36	0	22.49	22.42	22.36	24	0.2		
15	QPSK	36	39	22.59	22.43	22.44				
15	QPSK	72	0	22.56	22.44	22.46				
15	QPSK	72	39	22.55	22.33	22.31	24	0.2		
15	QPSK	144	0	22.50	22.36	22.38				
15	QPSK	144	39	22.48	22.46	22.38	24	0.2		
15	QPSK	36	0	21.88	21.78	21.74	23	1.2		
15	QPSK	36	20	21.95	21.78	21.81				
15	QPSK	36	74	21.95	21.89	21.84				
15	QPSK	72	0	21.88	21.89	21.81	23	1.2		
15	QPSK	72	39	21.84	21.89	21.81				
15	QPSK	144	0	21.84	21.82	21.74	23	1.2		
15	QPSK	144	39	21.82	21.82	21.74				
15	QPSK	36	0	20.94	20.84	20.81	22	2.2		
15	QPSK	36	20	21.00	20.81	20.81				
15	QPSK	36	74	20.96	20.79	20.83				
Channel										
				37800	38650	38200				
10	QPSK	1	0	22.43	22.37	22.26	24.2	0		
10	QPSK	1	25	22.57	22.51	22.74				
10	QPSK	1	49	22.57	22.52	22.76				
10	QPSK	25	0	22.37	22.42	22.33				
10	QPSK	25	12	22.47	22.46	22.63	24	0.2		
10	QPSK	25	25	22.45	22.47	22.63				
10	QPSK	50	0	22.45	22.47	22.63				
10	QPSK	50	12	22.44	22.37	22.59	24	0.2		
10	QPSK	100	0	22.38	22.37	22.54				
10	QPSK	100	12	22.39	22.39	22.58	24	0.2		
10	QPSK	200	0	21.75	21.82	21.82				
10	QPSK	200	12	21.82	21.83	21.90	23	1.2		
10	QPSK	200	25	21.84	21.81	22.01				
10	QPSK	100	0	21.85	21.85	22.00				
10	QPSK	100	12	21.84	21.85	21.78	23	1.2		
10	QPSK	100	25	21.84	21.83	21.78				
10	QPSK	200	0	20.92	20.80	20.84	22	2.2		
10	QPSK	200	12	20.97	20.85	20.96				
10	QPSK	200	25	20.94	20.83	21.02				
10	QPSK	100	0	20.94	20.83	21.02				
Channel										
				37775	38650	38225				
5	QPSK	1	0	22.43	22.37	22.62	24.2	0		
5	QPSK	1	12	22.57	22.51	22.71				
5	QPSK	1	24	22.57	22.52	22.73				
5	QPSK	12	0	22.37	22.42	22.50				
5	QPSK	12	7	22.47	22.46	22.60	24	0.2		
5	QPSK	12	13	22.46	22.47	22.60				
5	QPSK	25	0	22.45	22.47	22.57				
5	QPSK	25	7	22.44	22.44	22.59	24	0.2		
5	QPSK	50	0	22.41	22.44	22.60				
5	QPSK	50	7	22.41	22.45	22.60	24	0.2		
5	QPSK	100	0	22.43	22.42	22.63				
5	QPSK	100	7	22.43	22.42	22.60	24	0.2		
5	QPSK	200	0	21.81	21.81	21.96				
5	QPSK	200	7	21.87	21.77	21.83	23	1.2		
5	QPSK	200	13	21.85	21.81	21.96				
5	QPSK	100	0	21.89	21.81	21.83	23	1.2		
5	QPSK	100	7	21.89	21.80	21.80				
5	QPSK	100	13	21.89	21.80	21.80	23	1.2		
5	QPSK	200	0	20.84	20.79	20.82	22	2.2		
5	QPSK	200	7	20.89	20.80	20.85				
5	QPSK	200	13	20.86	20.82	20.97				
5	QPSK	100	0	20.87	20.80	20.91	22	2.2		

Band 41 (2.6G Band)										
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch / Freq.	Power Mid Ch / Freq.	Power High Ch / Freq.	Tune-up Int. (min)	MFR (dB)		
Channel										
				39750	40185	40600	41065	41490		
20	QPSK	1	0	22.52	22.56	22.65	22.77	22.81	24.2	0
20	QPSK	1	49	22.66	22.68	22.64	22.65	22.77		
20	QPSK	1	99	22.67	22.63	22.63	22.68	22.81		
20	QPSK	50	0	22.57	22.54	22.54	22.65	22.65		
20	QPSK	50	24	22.61	22.56	22.56	22.75	22.67	24	0.2
20	QPSK	50	99	22.62	22.55	22.59	22.75	22.73		
20	QPSK	100	0	22.62	22.58	22.74	22.72	22.65		
20	QPSK	100	24	22.59	22.45	22.71	22.78	22.78	24	0.2
20	QPSK	100	99	22.52	22.48	22.67	22.68	22.71		
20	QPSK	1	99	22.54	22.83	22.74	22.80	22.78		
20	QPSK	50	0	21.97	21.88	21.88	22.04	22.03	23	1.2
20	QPSK	50	24	21.98	21.90	22.04	22.11	22.05		
20	QPSK	50	99	21.96	21.92	22.07	22.13	22.10		
20	QPSK	100	0	22.00	21.92	22.04	22.12	22.05		
20	QPSK	100	24	21.90	21.36	21.52	21.70	21.71	23	1.2
20	QPSK	100	99	21.89	21.51	21.60	21.70	21.76		
20	QPSK	50	0	21.89	21.54	21.71	21.80	21.79		
20	QPSK	50	24	20.95	20.90	20.93	21.06	21.07	22	2.2
20	QPSK	50	99	20.92	20.95	21.08	21.10	21.10		
20	QPSK	100	0	20.97	20.93	21.05	21.15	21.10		
20	QPSK	100	24	20.88	20.91	21.02	21.14	21.02	23	1.2
Channel										
				39800	40185	40600	41065	41490		
15	QPSK	1	0	22.40	22.44	22.53	22.65	22.69	24.2	0
15	QPSK	1	37	22.54	22.56	22.62	22.74	22.65		
15	QPSK	1	74	22.55	22.51	22.81	22.78	22.69		
15	QPSK	36	0	22.45	22.42	22.42	22.53	22.53	24	0.2
15	QPSK	36	20	22.49	22.44	22.64	22.63	22.67		
15	QPSK	36	39	22.50	22.43	22.57	22.63	22.61		
15	QPSK	72	0	22.49	22.44	22.63	22.60	22.63		
15	QPSK	72	39	22.42	22.33	22.43	22.59	22.57	24	0.2
15	QPSK	144	0	22.42	22.38	22.48	22.54	22.59		
15	QPSK	144	39	22.40	22.46	22.56	22.62	22.61	24	0.2
15	QPSK	36	0	21.85	21.76	21.77	21.84	21.87	23	1.2
15	QPSK	36	20	21.89	21.78	21.92	21.99	21.93		
15	QPSK	36	74	21.84	21.80	21.92	22.01	21.95		
15	QPSK	72	0	21.88	21.85	21.92	22.00	21.93	23	1.2
15	QPSK	72	39	21.88	21.84	21.90	21.98	21.90		
15	QPSK	144	0	21.88	21.84	21.90	21.98	21.90	23	1.2
15	QPSK	144	39	21.84	21.82	21.88	21.94	21.84		
15	QPSK									



Reduced power for Sensor on-LAT

Band	WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)
	9262	9650	9638		1312	1413	1513	
Tx Channel	9662	9800	9638		1537	1638	1738	
Rx Channel								
Frequency (MHz)	1852.4	1880	1907.6		1712.4	1732.6	1752.6	
3GPP Rel 99 AMR 12.2Kbps	21.28	21.35	21.33	21.80	20.61	20.48	20.45	21.00
3GPP Rel 99 RMC 12.2Kbps	21.33	21.41	21.35	21.80	20.63	20.53	20.48	21.00
3GPP Rel 6 HSDPA Subtest-1	20.15	20.21	20.15	20.80	19.44	19.37	19.27	20.00
3GPP Rel 6 HSDPA Subtest-2	20.19	20.22	20.13	20.80	19.42	19.37	19.26	20.00
3GPP Rel 6 HSDPA Subtest-3	19.71	19.32	19.60	20.30	18.96	18.88	18.76	19.50
3GPP Rel 6 HSDPA Subtest-4	19.67	19.76	19.63	20.30	18.96	18.89	18.79	19.50
3GPP Rel 6 DC-HSDPA Subtest-1	20.11	20.12	20.18	20.80	19.41	19.32	19.24	20.00
3GPP Rel 6 DC-HSDPA Subtest-2	20.16	20.12	20.19	20.80	19.38	19.29	19.22	20.00
3GPP Rel 6 DC-HSDPA Subtest-3	19.76	19.31	19.64	20.30	18.94	18.89	18.78	19.50
3GPP Rel 6 DC-HSDPA Subtest-4	19.61	19.72	19.69	20.30	18.91	18.83	18.72	19.50
3GPP Rel 6 HSUPA Subtest-1	20.20	20.18	20.15	20.80	19.47	19.38	19.25	20.00
3GPP Rel 6 HSUPA Subtest-2	18.17	18.20	18.14	18.80	17.45	17.40	17.34	18.00
3GPP Rel 6 HSUPA Subtest-3	18.17	18.21	18.14	18.80	18.47	18.38	18.29	19.00
3GPP Rel 6 HSUPA Subtest-4	18.13	18.17	18.12	18.80	17.48	17.41	17.30	18.00
3GPP Rel 6 HSUPA Subtest-5	20.10	20.20	20.20	20.80	19.50	19.40	19.30	20.00
3GPP Rel 7 HSPA+ (16QAM) Subtest-1	17.82	17.89	17.77	18.80	17.21	17.19	17.18	18.00



Band 2 (1900MHz Band) Part 24E										
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch./Freq.	Power Middle Ch./Freq.	Power High Ch./Freq.	Tune-up limit (dBm)	MPR (dB)		
Channel										
Frequency (MHz)										
20	QPSK	1	0	20.15	20.22	20.31				
20	QPSK	1	49	20.07	20.11	20.22	21.2	0		
20	QPSK	1	99	20.11	20.15	20.19				
20	QPSK	50	0	20.17	20.20	20.27				
20	QPSK	50	24	20.15	20.16	20.22	21.2	0		
20	QPSK	50	50	20.05	20.13	20.17				
20	QPSK	100	0	20.02	20.10	20.21				
20	16QAM	1	0	20.17	20.23	20.24				
20	16QAM	1	49	20.12	20.15	20.17	21.2	0		
20	16QAM	1	99	20.06	20.10	20.12				
20	16QAM	50	0	20.01	20.04	20.07				
20	16QAM	50	24	20.04	20.05	20.05	21.2	0		
20	16QAM	50	50	19.92	19.95	19.98				
20	16QAM	100	0	20.01	19.92	20.05				
20	64QAM	1	0	20.11	20.15	20.11				
20	64QAM	1	49	20.13	20.14	20.16	21.2	0		
20	64QAM	1	99	20.11	19.95	19.98				
20	64QAM	50	0	20.05	19.99	20.11				
20	64QAM	50	24	20.07	19.96	20.08	21.2	0		
20	64QAM	50	50	20.02	19.97	20.04				
20	64QAM	100	0	20.04	19.95	20.03				
Channel										
Frequency (MHz)										
15	QPSK	1	0	20.16	20.10	20.16				
15	QPSK	1	37	20.07	20.10	20.09	21.2	0		
15	QPSK	1	74	20.03	20.08	20.00				
15	QPSK	36	0	20.24	20.17	20.21				
15	QPSK	36	20	20.22	20.15	20.18	21.2	0		
15	QPSK	36	39	20.15	20.14	20.16				
15	QPSK	75	0	20.21	20.19	20.23				
15	16QAM	1	0	20.21	20.19	20.09				
15	16QAM	1	37	20.11	20.19	20.09	21.2	0		
15	16QAM	1	74	20.11	20.24	19.98				
15	16QAM	36	0	20.02	19.94	19.97				
15	16QAM	36	20	19.98	19.98	19.95	21.2	0		
15	16QAM	36	39	19.89	19.93	19.90				
15	16QAM	75	0	19.97	19.96	19.99				
15	64QAM	1	0	20.02	20.13	20.08				
15	64QAM	1	37	20.01	20.17	19.98	21.2	0		
15	64QAM	1	74	19.96	20.08	19.99				
15	64QAM	36	0	20.28	20.26	20.29				
15	64QAM	36	20	20.27	20.23	20.25	21.2	0		
15	64QAM	36	39	20.24	20.22	20.22				
15	64QAM	75	0	20.24	20.21	20.24				
Channel										
Frequency (MHz)										
10	QPSK	1	0	20.28	20.29	20.27				
10	QPSK	1	25	20.23	20.26	20.29	21.2	0		
10	QPSK	1	49	20.13	20.13	20.12				
10	QPSK	25	0	20.08	20.06	20.07				
10	QPSK	25	12	20.05	20.02	20.08	21.2	0		
10	QPSK	25	25	20.00	19.95	19.96				
10	QPSK	50	0	20.06	20.00	20.04				
10	16QAM	1	0	20.30	20.28	20.27				
10	16QAM	1	25	20.30	20.22	20.17	21.2	0		
10	16QAM	1	49	20.14	20.26	20.09				
10	16QAM	25	0	20.10	19.94	19.97	21.2	0		
10	16QAM	25	12	20.09	20.10	20.10				
10	16QAM	25	25	20.02	20.03	19.99				
10	16QAM	50	0	20.07	20.06	20.08				
10	64QAM	1	0	20.28	20.24	20.28				
10	64QAM	1	25	20.16	20.20	20.15	21.2	0		
10	64QAM	1	49	20.03	20.11	20.14				
10	64QAM	25	0	20.17	20.12	20.17				
10	64QAM	25	12	20.16	20.08	20.12	21.2	0		
10	64QAM	25	25	20.04	20.05	20.05				
10	64QAM	50	0	20.12	20.07	20.06				
Channel										
Frequency (MHz)										
5	QPSK	1	0	20.28	20.23	20.19				
5	QPSK	1	12	20.12	20.12	20.12	21.2	0		
5	QPSK	1	24	20.18	20.20	20.05				
5	QPSK	12	0	20.21	20.22	20.29				
5	QPSK	12	7	20.21	20.25	20.26	21.2	0		
5	QPSK	12	13	20.24	20.29	20.21				
5	QPSK	25	0	20.30	20.29	20.25				
5	16QAM	1	0	20.20	20.19	20.19				
5	16QAM	1	12	20.20	20.27	20.11	21.2	0		
5	16QAM	1	24	20.13	20.23	20.08				
5	16QAM	12	0	20.15	20.14	20.07				
5	16QAM	12	7	20.10	20.15	20.06	21.2	0		
5	16QAM	12	13	20.01	20.09	19.99				
5	16QAM	25	0	20.09	20.07	20.03				
5	64QAM	1	0	20.17	20.24	20.25				
5	64QAM	1	12	20.25	20.30	20.15	21.2	0		
5	64QAM	1	24	20.12	20.21	20.20				
5	64QAM	12	0	20.22	20.14	20.12				
5	64QAM	12	7	20.17	20.22	20.11	21.2	0		
5	64QAM	12	13	20.05	20.02	20.04				
5	64QAM	25	0	20.08	20.10	20.06				
Channel										
Frequency (MHz)										
3	QPSK	1	0	20.25	20.29	20.23				
3	QPSK	1	8	20.18	20.24	20.15	21.2	0		
3	QPSK	1	14	20.12	20.21	20.04				
3	QPSK	8	0	20.13	20.12	20.29				
3	QPSK	8	7	20.24	20.11	20.21	21.2	0		
3	QPSK	8	7	20.24	20.29	20.16				
3	QPSK	15	0	20.23	20.30	20.23				
3	16QAM	1	0	20.24	20.20	20.28				
3	16QAM	1	8	20.28	20.24	20.10	21.2	0		
3	16QAM	1	14	20.17	20.28	20.04				
3	16QAM	8	0	20.13	20.07	20.08				
3	16QAM	8	4	20.08	20.11	19.98	21.2	0		
3	16QAM	8	7	19.98	20.05	19.93				
3	16QAM	15	0	20.02	20.02	20.00				
3	64QAM	1	0	20.23	20.27	20.16				
3	64QAM	1	8	20.25	20.25	20.19	21.2	0		
3	64QAM	1	14	20.18	20.14	20.07				
3	64QAM	8	0	20.18	20.08	20.06				
3	64QAM	8	4	20.14	20.15	20.03	21.2	0		
3	64QAM	8	7	20.02	20.05	19.96				
3	64QAM	15	0	20.04	20.01	20.02				
Channel										
Frequency (MHz)										
1.4	QPSK	1	0	20.10	20.17	20.26				
1.4	QPSK	1	0	20.02	20.06	20.17				
1.4	QPSK	1	5	20.06	20.10	20.14	21.2	0		
1.4	QPSK	3	0	20.12	20.15	20.22				
1.4	QPSK	3	1	20.08	20.13	20.17				
1.4	QPSK	3	3	20.00	20.08	20.12	21.2	0		
1.4	QPSK	6	0	19.97	20.05	20.16				
1.4	16QAM	1	0	20.12	20.19	20.19				
1.4	16QAM	1	3	20.07	20.10	20.12	21.2	0		
1.4	16QAM	1	5	20.01	20.05	20.07				
1.4	16QAM	3	0	19.96	19.99	20.02				
1.4	16QAM	3	1	19.99	20.00	20.00	21.2	0		
1.4	16QAM	3	3	19.87	19.90	19.93				
1.4	16QAM	6	0	19.96	19.94	20.00				
1.4	64QAM	1	0	20.06	20.10	20.06				
1.4	64QAM	1	3	20.08	20.09	20.11	21.2	0		
1.4	64QAM	1	5	20.06	19.90	19.93				
1.4	64QAM	3	0	20.00	19.94	20.06				
1.4	64QAM	3	1	20.02	19.91	20.03	21.2	0		
1.4	64QAM	3	3	19.97	19.92	19.99				
1.4	64QAM	6	0	19.99	19.90	19.98				

|--|--|--|--|--|--|--|--|--|--|--|



Band 66									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				132072	132232	132572			
Frequency (MHz)				1721	1745				
20	QPSK	1	0	20.14	20.12	20.08			
20	QPSK	1	49	20.20	20.06	20.05	21	0	
20	QPSK	1	99	20.06	19.95	19.86			
20	QPSK	50	0	20.13	20.04	20.01			
20	QPSK	50	24	20.11	20.03	20.00	21	0	
20	QPSK	50	50	20.15	19.99	19.92			
20	QPSK	100	0	20.08	19.97	19.92			
20	16QAM	1	0	20.07	20.05	19.94			
20	16QAM	1	49	20.01	19.99	19.96	21	0	
20	16QAM	1	99	20.05	20.04	20.01			
20	16QAM	50	0	20.08	19.97	19.97			
20	16QAM	50	24	20.08	20.04	20.00	21	0	
20	16QAM	50	50	20.02	19.97	19.87			
20	16QAM	100	0	20.07	19.95	19.90			
20	64QAM	1	0	20.07	20.08	20.01			
20	64QAM	1	49	20.07	20.01	19.96	21	0	
20	64QAM	1	99	20.07	20.06	19.99			
20	64QAM	50	0	20.08	20.04	20.00			
20	64QAM	50	24	20.12	19.98	19.99	21	0	
20	64QAM	50	50	20.05	19.99	20.01			
20	64QAM	100	0	20.09	19.99	19.95			
Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1717.5	1745	1772.5			
15	QPSK	1	0	19.95	19.94	19.97			
15	QPSK	1	37	20.01	19.95	19.95	21	0	
15	QPSK	1	74	19.93	19.85	19.91			
15	QPSK	36	0	20.12	20.01	20.00			
15	QPSK	36	20	20.13	19.99	19.99	21	0	
15	QPSK	36	39	20.07	20.03	20.01			
15	QPSK	75	0	20.08	19.98	19.94			
15	16QAM	1	0	20.08	20.13	20.17			
15	16QAM	1	37	20.08	20.08	20.04	21	0	
15	16QAM	1	74	19.98	19.98	19.97			
15	16QAM	36	0	19.94	19.83	19.81			
15	16QAM	36	20	19.96	19.83	19.82	21	0	
15	16QAM	36	39	20.07	19.99	19.96			
15	16QAM	75	0	20.14	19.99	19.96			
15	64QAM	1	0	20.11	20.13	20.18			
15	64QAM	1	37	20.08	20.06	20.01	21	0	
15	64QAM	1	74	20.18	20.09	20.14			
15	64QAM	36	0	20.15	20.06	20.07			
15	64QAM	36	20	20.17	20.05	20.02	21	0	
15	64QAM	36	39	20.10	20.07	20.03			
15	64QAM	75	0	20.12	20.03	19.98			
Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1715	1745	1775			
10	QPSK	1	0	20.17	20.10	20.06			
10	QPSK	1	25	20.11	20.15	20.07	21	0	
10	QPSK	1	49	20.09	19.98	19.89			
10	QPSK	25	0	20.21	20.13	20.18			
10	QPSK	25	12	20.21	20.08	20.17	21	0	
10	QPSK	25	25	20.21	20.13	20.09			
10	QPSK	50	0	20.21	20.08	20.11			
10	16QAM	1	0	20.20	20.18	20.15			
10	16QAM	1	25	20.14	20.07	20.01	21	0	
10	16QAM	1	49	20.11	20.11	20.01			
10	16QAM	25	0	20.07	19.95	19.95			
10	16QAM	25	12	20.09	19.95	19.96	21	0	
10	16QAM	25	25	20.04	19.96	19.91			
10	16QAM	50	0	20.03	19.91	19.91			
10	64QAM	1	0	20.12	20.03	20.11			
10	64QAM	1	25	20.15	20.00	20.05	21	0	
10	64QAM	1	49	20.13	19.99	19.90			
10	64QAM	25	0	20.08	19.97	20.03			
10	64QAM	25	12	20.09	19.93	19.98	21	0	
10	64QAM	25	25	20.06	19.98	19.90			
10	64QAM	50	0	20.08	19.95	19.94			
Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1712.5	1745	1777.5			
5	QPSK	1	0	20.16	20.08	20.03			
5	QPSK	1	12	20.13	20.10	20.01	21	0	
5	QPSK	1	24	20.08	20.04	19.93			
5	QPSK	12	0	20.04	19.95	19.95			
5	QPSK	12	7	20.03	19.98	19.95	21	0	
5	QPSK	12	13	20.01	19.97	19.89			
5	QPSK	25	0	20.04	19.87	19.93			
5	16QAM	1	0	20.04	20.04	20.07			
5	16QAM	1	12	20.04	20.02	20.03	21	0	
5	16QAM	1	24	20.07	20.01	19.90			
5	16QAM	12	0	20.01	19.93	19.96			
5	16QAM	12	7	20.00	19.97	19.96	21	0	
5	16QAM	12	13	19.98	19.96	19.90			
5	16QAM	25	0	20.02	19.89	19.93			
5	64QAM	1	0	20.21	20.06	20.21			
5	64QAM	1	12	20.16	20.12	20.23	21	0	
5	64QAM	1	24	20.19	20.16	20.01			
5	64QAM	12	0	20.10	19.99	19.97			
5	64QAM	12	7	20.10	20.07	19.98	21	0	
5	64QAM	12	13	20.08	20.02	19.93			
5	64QAM	25	0	20.19	20.11	20.07			
Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1711.5	1745	1778.5			
3	QPSK	1	0	20.12	20.08	19.98			
3	QPSK	1	8	20.09	20.06	19.94	21	0	
3	QPSK	1	14	20.10	20.06	19.96			
3	QPSK	8	0	20.01	19.96	20.08			
3	QPSK	8	4	20.01	19.98	20.06	21	0	
3	QPSK	8	7	20.03	19.94	20.03			
3	QPSK	15	0	20.01	19.90	20.06			
3	16QAM	1	0	20.08	19.97	20.12			
3	16QAM	1	8	20.14	20.09	20.10	21	0	
3	16QAM	1	14	20.23	20.17	20.16			
3	16QAM	8	0	20.05	20.04	19.94			
3	16QAM	8	4	20.07	20.03	19.98	21	0	
3	16QAM	8	7	20.05	20.01	19.90			
3	16QAM	15	0	20.02	19.99	19.87			
3	64QAM	1	0	20.04	19.99	20.02			
3	64QAM	1	8	20.08	20.07	20.08	21	0	
3	64QAM	1	14	20.16	20.20	20.15			
3	64QAM	8	0	20.03	20.00	20.14			
3	64QAM	8	4	20.11	20.05	20.17	21	0	
3	64QAM	8	7	20.03	20.00	20.10			
3	64QAM	15	0	20.04	19.96	20.15			
Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1710.7	1745	1779.3			
1.4	QPSK	1	0	20.09	20.07	20.03			
1.4	QPSK	1	3	20.21	20.01	20.00	21	0	
1.4	QPSK	1	5	20.01	19.90	19.81			
1.4	QPSK	3	0	20.08	19.99	19.96			
1.4	QPSK	3	1	20.06	19.98	19.95			
1.4	QPSK	3	3	20.10	19.94	19.87	21	0	
1.4	QPSK	6	0	20.03	19.92	19.87			
1.4	16QAM	1	0	20.02	20.00	19.89			
1.4	16QAM	1	3	19.96	19.94	19.91	21	0	
1.4	16QAM	1	5	20.00	19.99	19.96			
1.4	16QAM	3	0	20.03	19.92	19.92			
1.4	16QAM	3	1	20.03	19.90	19.87			
1.4	16QAM	3	3	19.97	19.92	19.82	21	0	
1.4	16QAM	6	0	20.02	19.90	19.85			
1.4	64QAM	1	0	20.02	20.03	19.96			
1.4	64QAM	1	3	20.02	19.96	19.91	21	0	
1.4	64QAM	1	5	20.02	20.01	19.94			
1.4	64QAM	3	0	20.03	19.99	19.95			
1.4	64QAM	3	1	20.07	19.93	19.94			
1.4	64QAM	3	3	20.00	19.94	19.96	21	0	
1.4	64QAM	6	0	20.04	19.94	19.90			



Intra Band UL CA Power for UAT

CA_41C											
Combination 20MHz+20MHz (100RB+100RB)											
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Power Reduction	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset					
39750	39948	QPSK	1	49	0	0	1	0	Full	23.61	25.00
40185	40383	QPSK	1	49	0	0	1	0	Full	23.39	25.00
40620	40422	QPSK	1	49	0	0	1	0	Full	23.68	25.00
41055	40857	QPSK	1	49	0	0	1	0	Full	23.69	25.00
41490	41292	QPSK	1	49	0	0	1	0	Full	23.64	25.00
39750	39948	QPSK	1	99	1	0	2	0	Reduced Level 1/2	18.25	19.20
40185	40383	QPSK	1	99	1	0	2	0	Reduced Level 1/2	18.37	19.20
40620	40422	QPSK	1	0	1	99	2	0	Reduced Level 1/2	18.43	19.20
41055	40857	QPSK	1	0	1	99	2	0	Reduced Level 1/2	18.45	19.20
41490	41292	QPSK	1	0	1	99	2	0	Reduced Level 1/2	18.42	19.20
39750	39948	QPSK	1	99	1	0	2	0	Hotspot on	20.24	21.50
40185	40383	QPSK	1	99	1	0	2	0	Hotspot on	20.33	21.50
40620	40422	QPSK	1	0	1	99	2	0	Hotspot on	20.29	21.50
41055	40857	QPSK	1	0	1	99	2	0	Hotspot on	20.36	21.50
41490	41292	QPSK	1	0	1	99	2	0	Hotspot on	20.29	21.50
39750	39948	QPSK	1	99	1	0	2	0	Sensor on	22.39	23.70
40185	40383	QPSK	1	99	1	0	2	0	Sensor on	22.53	23.70
40620	40422	QPSK	1	0	1	99	2	0	Sensor on	22.48	23.70
41055	40857	QPSK	1	0	1	99	2	0	Sensor on	22.55	23.70
41490	41292	QPSK	1	0	1	99	2	0	Sensor on	22.48	23.70

Intra Band UL CA Power for LAT

CA_41C											
Combination 20MHz+20MHz (100RB+100RB)											
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Power Reduction	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset					
39750	39948	QPSK	1	49	0	0	1	0	Full	23.94	25.00
40185	40383	QPSK	1	49	0	0	1	0	Full	23.73	25.00
40620	40422	QPSK	1	49	0	0	1	0	Full	23.78	25.00
41055	40857	QPSK	1	49	0	0	1	0	Full	24.15	25.00
41490	41292	QPSK	1	49	0	0	1	0	Full	23.99	25.00
39750	39948	QPSK	1	99	1	0	2	0	Hotspot on	22.84	24.20
40185	40383	QPSK	1	99	1	0	2	0	Hotspot on	22.75	24.20
40620	40422	QPSK	1	0	1	99	2	0	Hotspot on	22.88	24.20
41055	40857	QPSK	1	0	1	99	2	0	Hotspot on	22.92	24.20
41490	41292	QPSK	1	0	1	99	2	0	Hotspot on	22.90	24.20



DL CA Power

Full Power		2CC															
Configure	CA Configuration (BCS)	PCC							SCC				Power				
		LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx.Power (dBm)	W/O CA Tx.Power (dBm)			
	CA_25A-41A	25	20	1905	26590	QPSK	1	0	41	20	2593	40620	23.82	23.84			
	CA_26A-41A	26	15	84.5	26965	QPSK	1	0	41	20	2593	40620	23.60	23.94			
Inter-Band	Non-Contiguous	CA_41A-41A	41	20	2593	40620	QPSK	1	49	41	5	2498.5	39675	23.33	23.95		
	Contiguous	CA_66B	66	15	1717.5	132047	QPSK	1	49	66	5	2126.80	66604	23.60	23.85		

3CC		3CC																	
Configure	CA Configuration (BCS)	PCC							SCC1				SCC2				Power		
		LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx.Power (dBm)	W/O CA Tx.Power (dBm)	
Inter-Band	CA_2A-2A-4A	2	20	1880	18900	QPSK	1	49	2	5	1987.5	1175	4	20	2132.5	2175	23.52	23.83	
	CA_2A-2A-12A	2	20	1880	18900	QPSK	1	49	2	5	1987.5	1175	12	10	737.5	5095	23.42	23.83	
	CA_2A-2A-66A	2	20	1880	18900	QPSK	1	49	2	5	1987.5	1175	66	20	2155	66886	23.58	23.83	
	CA_2A-2A-71A	2	20	1880	18900	QPSK	1	49	2	5	1987.5	1175	71	20	637	68786	23.62	23.83	
	CA_2A-4A-4A	2	20	1880	18900	QPSK	1	49	4	20	2132.5	2175	4	5	2152.5	2375	23.82	23.83	
	CA_2A-4A-5A	2	20	1880	18900	QPSK	1	49	4	20	2132.5	2175	5	10	881.5	2525	23.77	23.83	
	CA_2A-4A-12A	2	20	1880	18900	QPSK	1	49	4	20	2132.5	2175	12	10	737.5	5095	23.79	23.83	
	CA_2A-4A-71A	2	20	1880	18900	QPSK	1	49	4	20	2132.5	2175	71	20	637	68786	23.73	23.83	
	CA_2A-5A-66A	2	20	1880	18900	QPSK	1	49	5	10	881.5	2525	66	20	2155	66886	23.80	23.83	
	CA_2A-12A-66A	2	20	1880	18900	QPSK	1	49	12	10	737.5	5095	66	20	2155	66886	23.66	23.83	
	CA_2A-66A-66A	2	20	1880	18900	QPSK	1	49	66	20	2155	66886	66	5	2197.5	67311	23.76	23.83	
	CA_2A-66A-71A	2	20	1880	18900	QPSK	1	49	66	20	2155	66886	71	20	637	68786	23.78	23.83	
	CA_2A-66C	2	20	1880	18900	QPSK	1	49	66	20	2155	66886	66	20	2174.8	67084	23.81	23.83	
	CA_2C-66A	2	20	1880	18900	QPSK	1	49	2	20	1979.8	1098	66	20	2155	66886	23.71	23.83	
	CA_4A-4A-12A	4	20	1720	20050	QPSK	1	0	4	5	2152.5	2375	12	10	737.5	5095	23.70	23.82	
	CA_4A-4A-71A	4	20	1720	20050	QPSK	1	0	4	5	2152.5	2375	71	20	637	68786	23.77	23.82	
	CA_12A-66A-66A	12	10	707.5	23095	QPSK	1	0	66	20	2155	66886	66	5	2197.5	67311	24.16	24.08	
	CA_12A-66C	12	10	707.5	23095	QPSK	1	0	66	20	2155	66886	66	20	2174.8	67084	24.26	24.08	
	CA_25A-25A-26A	25	20	1905	26590	QPSK	1	0	25	5	1932.5	8065	26	5	876.5	8865	23.55	23.84	
	CA_25A-41C	25	20	1905	26590	QPSK	1	0	41	20	2660.2	41292	41	20	2680	41490	23.77	23.84	
CA_66A-66A-71A	66	20	1720	132072	QPSK	1	49	66	5	2177.5	67111	71	20	637	68786	23.82	23.85		
CA_66C-71A	66	20	1720	132072	QPSK	1	49	66	20	2189.8	67234	71	20	637	68786	23.74	23.85		
Intra-Band	Non-Contiguous	CA_41A-41C	41	20	2593	40620	QPSK	1	49	41	5	2498.2	39675	41	20	2509.9	39792	23.95	23.95
	Contiguous	CA_41D	41	20	2593	40620	QPSK	1	49	41	20	2525.8	39948	41	20	2545.6	40146	23.87	23.95



Full Power Mode -UAT

n2_Ant 1									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				375000	376000	380000			
Frequency (MHz)				1860	1880	1900			
20	PI2 BPSK	1	1	23.78	23.63	23.66			
20	PI2 BPSK	1	53	23.67	23.57	23.63	25.2	0.0	
20	PI2 BPSK	1	104	23.62	23.52	23.59			
20	PI2 BPSK	50	0	23.13	23.08	23.10	24.7	0.5	
20	PI2 BPSK	50	28	23.62	23.59	23.61	25.2	0.0	
20	PI2 BPSK	50	56	23.17	23.09	23.12			
20	PI2 BPSK	100	0	23.15	23.12	23.13	24.7	0.5	
20	QPSK	1	1	23.65	23.58	23.59			
20	QPSK	1	53	23.58	23.56	23.41	25.2	0.0	
20	QPSK	1	104	23.47	23.57	23.07			
20	QPSK	50	0	22.51	22.46	22.50	24.2	1.0	
20	QPSK	50	28	23.36	23.52	23.26	25.2	0.0	
20	QPSK	50	56	22.22	22.56	22.59	24.2	1.0	
20	QPSK	100	0	22.56	22.57	22.41	24.2	1.0	
20	16QAM	1	1	22.68	22.57	22.69	24.2	1.0	
20	64QAM	1	1	21.17	21.16	21.18	22.7	2.5	
20	256QAM	1	1	19.06	19.08	19.05	20.7	4.5	
Channel				371500	376000	380500			
Frequency (MHz)				1857.5	1880	1902.5			
15	PI2 BPSK	1	1	22.71	23.81	23.63	25.2	0.0	
Channel				371500	376000	381000			
Frequency (MHz)				1855	1880	1905			
10	PI2 BPSK	1	1	23.72	23.64	23.65	25.2	0.0	
Channel				376500	376000	381500			
Frequency (MHz)				1862.5	1880	1902.5			
5	PI2 BPSK	1	1	23.70	23.61	23.65	25.2	0.0	

n5_Ant 1									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				166800	167300	167800			
Frequency (MHz)				834	836.5	839			
20	PI2 BPSK	1	1	24.55	24.38	24.41			
20	PI2 BPSK	1	53	24.41	24.35	24.32	25.2	0.0	
20	PI2 BPSK	1	104	24.23	24.18	24.16			
20	PI2 BPSK	50	0	23.98	23.83	23.91	24.7	0.5	
20	PI2 BPSK	50	28	24.35	24.28	24.32	25.2	0.0	
20	PI2 BPSK	50	56	23.83	23.88	23.72			
20	PI2 BPSK	100	0	23.91	23.83	23.85	24.7	0.5	
20	QPSK	1	1	24.42	24.31	24.32			
20	QPSK	1	53	24.26	24.16	24.18	25.2	0.0	
20	QPSK	1	104	24.11	24.11	24.06			
20	QPSK	50	0	23.33	23.32	23.29	24.2	1.0	
20	QPSK	50	28	24.28	24.23	24.22	25.2	0.0	
20	QPSK	50	56	23.21	23.19	23.11	24.2	1.0	
20	QPSK	100	0	23.29	23.26	23.26	24.2	1.0	
20	16QAM	1	1	23.39	23.41	23.39	24.2	1.0	
20	64QAM	1	1	21.98	21.94	21.92	22.7	2.5	
20	256QAM	1	1	19.95	19.88	19.86	20.7	4.5	
Channel				166800	167300	168300			
Frequency (MHz)				831.5	836.5	841.5			
15	PI2 BPSK	1	1	24.51	24.32	24.37	25.2	0.0	
Channel				169300	167300	169300			
Frequency (MHz)				839	836.5	844			
10	PI2 BPSK	1	1	24.50	24.35	24.42	25.2	0.0	
Channel				165300	167300	169300			
Frequency (MHz)				828.5	836.5	842.5			
5	PI2 BPSK	1	1	24.52	24.34	24.31	25.2	0.0	

n25_Ant 1									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				372000	375000	381000			
Frequency (MHz)				1860	1862.5	1905			
20	PI2 BPSK	1	1	23.81	23.66	23.70			
20	PI2 BPSK	1	53	23.67	23.62	23.66	25.2	0.0	
20	PI2 BPSK	1	104	23.66	23.54	23.57			
20	PI2 BPSK	50	0	23.21	23.14	23.19	24.7	0.5	
20	PI2 BPSK	50	28	23.66	23.62	23.64	25.2	0.0	
20	PI2 BPSK	50	56	23.17	23.11	23.14			
20	PI2 BPSK	100	0	23.21	23.18	23.20	24.7	0.5	
20	QPSK	1	1	23.67	23.66	23.69			
20	QPSK	1	53	23.30	23.63	23.80	25.2	0.0	
20	QPSK	1	104	23.20	23.64	23.39			
20	QPSK	50	0	22.92	22.57	22.85	24.2	1.0	
20	QPSK	50	28	23.56	23.59	23.39	25.2	0.0	
20	QPSK	50	56	22.81	22.56	22.53	24.2	1.0	
20	QPSK	100	0	22.98	22.83	22.65	24.2	1.0	
20	16QAM	1	1	22.61	22.59	22.74	24.2	1.0	
20	64QAM	1	1	21.19	21.12	21.23	22.7	2.5	
20	256QAM	1	1	19.16	19.10	19.06	20.7	4.5	
Channel				371500	376500	381500			
Frequency (MHz)				1857.5	1862.5	1907.5			
15	PI2 BPSK	1	1	23.82	23.61	23.64	25.2	0.0	
Channel				371500	375500	380500			
Frequency (MHz)				1855	1862.5	1910			
10	PI2 BPSK	1	1	23.81	23.66	23.69	25.2	0.0	
Channel				376500	376500	382500			
Frequency (MHz)				1862.5	1862.5	1912.5			
5	PI2 BPSK	1	1	23.89	23.62	23.61	25.2	0.0	



n66_Ant 1									
BW [MHz]	Modulation	RB Size	RB Offset	Power	Power	Power	Tune-up limit (dBm)	MPR (dB)	
				Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.			
Channel				344000	349000	354000			
Frequency (MHz)				1740	1745	1770			
20	PI2 BPSK	1	1	23.38	23.52	23.44			
20	PI2 BPSK	1	53	23.32	23.46	23.39	25.2	0.0	
20	PI2 BPSK	1	104	23.35	23.48	23.42			
20	PI2 BPSK	50	0	22.86	23.01	22.96	24.7	0.5	
20	PI2 BPSK	50	28	23.36	23.46	23.43	25.2	0.0	
20	PI2 BPSK	50	56	22.88	23.03	23.01			
20	PI2 BPSK	100	0	22.86	23.01	22.94	24.7	0.5	
20	QPSK	1	1	23.29	23.46	23.38			
20	QPSK	1	53	23.26	23.43	23.32	25.2	0.0	
20	QPSK	1	104	23.28	23.44	23.35			
20	QPSK	50	0	22.85	22.44	22.86	24.2	1.0	
20	QPSK	50	28	23.26	23.25	23.24	25.2	0.0	
20	QPSK	50	56	22.32	22.46	22.36	24.2	1.0	
20	QPSK	100	0	22.27	22.40	22.37			
20	16QAM	1	1	22.27	22.46	22.28	24.2	1.0	
20	64QAM	1	1	20.83	20.96	20.84	22.7	2.5	
20	256QAM	1	1	18.76	18.83	18.83	20.7	4.5	
Channel				343500	348000	354000			
Frequency (MHz)				1717.5	1745	1772.5			
15	PI2 BPSK	1	1	23.25	23.30	23.22	25.2	0.0	
Channel				343000	348000	355000			
Frequency (MHz)				1715	1745	1775			
10	PI2 BPSK	1	1	23.34	23.47	23.44	25.2	0.0	
Channel				342500	349000	355000			
Frequency (MHz)				1712.5	1745	1775.5			
5	PI2 BPSK	1	1	23.31	23.50	23.42	25.2	0.0	

n71_Ant 1									
BW [MHz]	Modulation	RB Size	RB Offset	Power	Power	Power	Tune-up limit (dBm)	MPR (dB)	
				Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.			
Channel				134000	136100	137600			
Frequency (MHz)				673	680.5	688			
20	PI2 BPSK	1	1	24.46	24.36	24.34			
20	PI2 BPSK	1	53	24.35	24.53	24.21	25.2	0.0	
20	PI2 BPSK	1	104	24.26	24.16	24.06			
20	PI2 BPSK	50	0	23.78	23.73	23.71	24.7	0.5	
20	PI2 BPSK	50	28	24.36	24.26	24.18	25.2	0.0	
20	PI2 BPSK	50	56	23.76	23.70	23.51			
20	PI2 BPSK	100	0	23.67	23.84	23.71	24.7	0.5	
20	QPSK	1	1	24.38	24.31	24.26			
20	QPSK	1	53	24.23	24.26	23.98	25.2	0.0	
20	QPSK	1	104	24.25	24.06	23.82			
20	QPSK	50	0	22.60	23.10	23.14	24.2	1.0	
20	QPSK	50	28	23.76	24.16	23.74	25.2	0.0	
20	QPSK	50	56	23.16	23.01	22.84	24.2	1.0	
20	QPSK	100	0	23.00	22.98	22.82			
20	16QAM	1	1	23.31	23.09	23.28	24.2	1.0	
20	64QAM	1	1	21.80	21.72	21.84	22.7	2.5	
20	256QAM	1	1	19.65	19.64	19.49	20.7	4.5	
Channel				134100	136100	138100			
Frequency (MHz)				670.5	680.5	690.5			
15	PI2 BPSK	1	1	24.40	24.82	24.29	25.2	0.0	
Channel				133600	136100	138600			
Frequency (MHz)				668	680.5	693			
10	PI2 BPSK	1	1	24.44	24.42	24.41	25.2	0.0	
Channel				133100	136100	139100			
Frequency (MHz)				665.5	680.5	695.5			
5	PI2 BPSK	1	1	24.45	24.42	24.36	25.2	0.0	



n41_FCC_Ant 4								
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				50200	51898	52600		
Frequency (MHz)				2546.01	2592.99	2640		
100	PI2 BPSK	1	1	23.91	24.27	24.29	25.2	0.0
100	PI2 BPSK	1	137	23.94	24.31	24.47		
100	PI2 BPSK	1	271	24.00	24.35	24.62		
100	PI2 BPSK	135	0	23.95	24.26	24.41	25.2	0.0
100	PI2 BPSK	135	69	23.97	24.37	24.51		
100	PI2 BPSK	135	138	23.87	24.35	24.49		
100	PI2 BPSK	270	0	23.96	24.32	24.47	25.2	0.0
100	QPSK	1	1	24.04	24.55	24.36		
100	QPSK	1	137	23.90	24.37	24.43		
100	QPSK	1	271	23.86	24.45	24.61	25.2	0.0
100	QPSK	135	0	24.02	24.34	24.37		
100	QPSK	135	69	23.83	24.37	24.51		
100	QPSK	135	138	23.91	24.37	24.51	25.2	0.0
100	QPSK	270	0	23.98	24.33	24.46		
100	16QAM	1	1	23.88	24.01	24.03		
100	64QAM	1	1	23.57	23.99	23.61	24.2	1.0
100	256QAM	1	1	21.40	21.57	21.58	22.2	3.0
Channel				50800	51898	52898	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2541	2592.99	2644.98		
90	PI2 BPSK	1	1	23.85	23.99	24.17	25.2	0.0
Channel				51200	51898	52298	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2536.02	2592.99	2649.99		
80	PI2 BPSK	1	1	23.85	24.16	24.15	25.2	0.0
Channel				50500	51898	53198	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2529	2592.99	2659.98		
60	PI2 BPSK	1	1	23.43	24.34	24.23	25.2	0.0
Channel				50400	51898	52998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2521.02	2592.99	2664.99		
50	PI2 BPSK	1	1	23.95	23.99	24.15	25.2	0.0
Channel				50300	51898	53000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2516.01	2592.99	2670		
40	PI2 BPSK	1	1	23.83	24.11	24.29	25.2	0.0
Channel				50200	51898	53498	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2511	2592.99	2674.98		
30	PI2 BPSK	1	1	23.99	24.22	24.12	25.2	0.0
Channel				50100	51898	53598	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2506.02	2592.99	2679.99		
20	PI2 BPSK	1	1	23.83	24.24	24.28	25.2	0.0

n41_FCC(HPUE)_Ant 4								
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				50200	51898	52600		
Frequency (MHz)				2546.01	2592.99	2640		
100	PI2 BPSK	1	1	25.91	26.21	26.29	27.2	0.0
100	PI2 BPSK	1	137	25.94	26.25	26.33		
100	PI2 BPSK	1	271	25.98	26.30	26.37		
100	PI2 BPSK	135	0	25.41	25.68	25.75	27.2	0.0
100	PI2 BPSK	135	69	26.01	26.24	26.37		
100	PI2 BPSK	135	138	25.54	25.79	25.85		
100	PI2 BPSK	270	0	25.43	25.78	25.83	27.2	0.5
100	QPSK	1	1	26.03	26.17	26.21		
100	QPSK	1	137	25.84	26.24	26.30		
100	QPSK	1	271	25.95	26.35	26.41	27.2	0.0
100	QPSK	135	0	25.01	25.15	25.27		
100	QPSK	135	69	25.97	26.29	26.33		
100	QPSK	135	138	25.21	25.28	25.36	27.2	0.0
100	QPSK	270	0	25.01	25.23	25.31		
100	16QAM	1	1	24.84	24.91	24.95		
100	64QAM	1	1	23.84	23.72	23.77	24.7	2.5
100	256QAM	1	1	21.60	21.71	21.76	22.7	4.5
Channel				50800	51898	52898	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2541	2592.99	2644.98		
90	PI2 BPSK	1	1	25.97	26.04	26.18	27.2	0.0
Channel				51200	51898	52298	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2536.02	2592.99	2649.99		
80	PI2 BPSK	1	1	25.88	26.01	26.06	27.2	0.0
Channel				50500	51898	53198	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2529	2592.99	2659.98		
60	PI2 BPSK	1	1	25.82	26.16	26.32	27.2	0.0
Channel				50400	51898	52998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2521.02	2592.99	2664.99		
50	PI2 BPSK	1	1	25.93	26.04	26.20	27.2	0.0
Channel				50300	51898	53000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2516.01	2592.99	2670		
40	PI2 BPSK	1	1	25.82	26.25	26.15	27.2	0.0
Channel				50200	51898	53498	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2511	2592.99	2674.98		
30	PI2 BPSK	1	1	26.01	26.27	26.02	27.2	0.0
Channel				50100	51898	53598	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2506.02	2592.99	2679.99		
20	PI2 BPSK	1	1	25.95	25.98	26.12	27.2	0.0



Full Power Mode -LAT

n2_Ant 0									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				375000	376000	380000			
Frequency (MHz)				1860	1880	1900			
20	PI2 BPSK	1	1	24.14	24.08	24.13			
20	PI2 BPSK	1	53	24.10	23.99	24.09	25.2	0.0	
20	PI2 BPSK	1	104	24.08	24.04	24.06			
20	PI2 BPSK	50	0	23.68	22.78	23.62	24.7	0.5	
20	PI2 BPSK	50	28	24.10	24.07	24.09	25.2	0.0	
20	PI2 BPSK	50	56	23.62	23.51	23.57	24.7	0.5	
20	PI2 BPSK	100	0	23.80	23.52	23.86			
20	QPSK	1	1	24.06	24.01	24.05			
20	QPSK	1	53	24.03	23.98	24.00	25.2	0.0	
20	QPSK	1	104	24.00	23.93	23.41			
20	QPSK	50	0	22.67	22.88	22.91	24.2	1.0	
20	QPSK	50	28	23.51	23.59	23.73	25.2	0.0	
20	QPSK	50	56	22.74	22.73	22.66	24.2	1.0	
20	QPSK	100	0	22.81	22.74	22.66			
20	16QAM	1	1	23.08	23.03	22.98	24.2	1.0	
20	16QAM	1	1	21.51	21.53	21.46	22.7	2.5	
20	256QAM	1	1	19.59	19.83	19.78	20.7	4.5	
Channel				371500	376000	380500			
Frequency (MHz)				1857.5	1880	1902.5			
15	PI2 BPSK	1	1	24.03	23.97	23.93	25.2	0.0	
Channel				371500	376000	381000			
Frequency (MHz)				1855	1880	1905			
10	PI2 BPSK	1	1	24.02	23.95	24.06	25.2	0.0	
Channel				376500	376000	381500			
Frequency (MHz)				1892.5	1880	1902.5			
5	PI2 BPSK	1	1	24.05	24.08	24.03	25.2	0.0	

n5_Ant 0									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				166800	167300	167800			
Frequency (MHz)				834	836.5	839			
20	PI2 BPSK	1	1	24.30	24.13	24.19			
20	PI2 BPSK	1	53	24.10	24.07	24.08	25.2	0.0	
20	PI2 BPSK	1	104	23.98	23.97	23.98			
20	PI2 BPSK	50	0	23.66	23.63	23.64	24.7	0.5	
20	PI2 BPSK	50	28	24.13	24.08	24.11	25.2	0.0	
20	PI2 BPSK	50	56	23.61	23.49	23.52	24.7	0.5	
20	PI2 BPSK	100	0	23.71	23.58	23.60			
20	QPSK	1	1	24.15	24.16	24.11			
20	QPSK	1	53	24.00	24.01	23.98	25.2	0.0	
20	QPSK	1	104	23.84	23.92	23.84			
20	QPSK	50	0	23.08	23.11	23.07	24.2	1.0	
20	QPSK	50	28	24.04	24.12	24.01	25.2	0.0	
20	QPSK	50	56	23.00	22.98	22.94	24.2	1.0	
20	QPSK	100	0	23.07	23.10	23.04			
20	16QAM	1	1	23.11	23.09	23.08	24.2	1.0	
20	16QAM	1	1	21.56	21.58	21.48	22.7	2.5	
20	256QAM	1	1	20.03	19.95	19.94	20.7	4.5	
Channel				166800	167300	168300			
Frequency (MHz)				831.5	836.5	841.5			
15	PI2 BPSK	1	1	24.28	24.25	24.15	25.2	0.0	
Channel				166800	167300	169300			
Frequency (MHz)				829	836.5	844			
10	PI2 BPSK	1	1	24.27	24.22	24.28	25.2	0.0	
Channel				165300	167300	169300			
Frequency (MHz)				826.5	836.5	842.5			
5	PI2 BPSK	1	1	24.28	24.28	24.18	25.2	0.0	

n25_Ant 0									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				372000	375000	381000			
Frequency (MHz)				1860	1862.5	1905			
20	PI2 BPSK	1	1	24.23	24.10	24.11			
20	PI2 BPSK	1	53	24.07	24.03	24.05	25.2	0.0	
20	PI2 BPSK	1	104	24.09	23.97	24.01			
20	PI2 BPSK	50	0	23.84	23.60	23.82	24.7	0.5	
20	PI2 BPSK	50	28	24.16	24.06	24.08	25.2	0.0	
20	PI2 BPSK	50	56	23.63	23.59	23.61	24.7	0.5	
20	PI2 BPSK	100	0	23.84	23.56	23.80			
20	QPSK	1	1	24.09	24.02	24.04			
20	QPSK	1	53	24.04	23.99	23.86	25.2	0.0	
20	QPSK	1	104	24.03	23.97	23.33			
20	QPSK	50	0	22.87	22.54	22.50	24.2	1.0	
20	QPSK	50	28	23.41	23.45	23.50	25.2	0.0	
20	QPSK	50	56	22.88	22.51	22.53	24.2	1.0	
20	QPSK	100	0	22.87	22.71	22.74			
20	16QAM	1	1	22.71	22.77	22.89	24.2	1.0	
20	16QAM	1	1	21.18	21.23	21.42	22.7	2.5	
20	256QAM	1	1	19.94	19.88	19.90	20.7	4.5	
Channel				371500	378500	381500			
Frequency (MHz)				1857.5	1862.5	1907.5			
15	PI2 BPSK	1	1	24.02	24.00	23.87	25.2	0.0	
Channel				371500	375500	380000			
Frequency (MHz)				1855	1862.5	1910			
10	PI2 BPSK	1	1	23.98	24.08	24.08	25.2	0.0	
Channel				376500	376500	382500			
Frequency (MHz)				1892.5	1892.5	1912.5			
5	PI2 BPSK	1	1	24.08	24.12	23.98	25.2	0.0	



n66_Ant 0									
BW [MHz]	Modulation	RB Size	RB Offset	Power	Power	Power	Tune-up limit (dBm)	MPR (dB)	
				Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.			
Channel				345000	349000	354000			
Frequency (MHz)				1745	1745	1770			
20	PI2 BPSK	1	1	24.00	24.02	23.99			
20	PI2 BPSK	1	53	23.96	23.97	23.94	25.2	0.0	
20	PI2 BPSK	1	104	23.97	23.99	23.93			
20	PI2 BPSK	50	0	23.46	23.51	23.44	24.7	0.5	
20	PI2 BPSK	50	28	23.93	23.97	23.90	25.2	0.0	
20	PI2 BPSK	50	56	23.46	23.52	23.42			
20	PI2 BPSK	100	0	23.46	23.51	23.44	24.7	0.5	
20	QPSK	1	1	23.96	23.94	23.94			
20	QPSK	1	53	23.88	23.89	23.88	25.2	0.0	
20	QPSK	1	104	23.92	23.92	23.90			
20	QPSK	50	0	22.56	22.74	22.81	24.2	1.0	
20	QPSK	50	28	23.92	23.88	23.89	25.2	0.0	
20	QPSK	50	56	22.75	22.86	22.84	24.2	1.0	
20	QPSK	100	0	22.88	22.76	22.90			
20	16QAM	1	1	22.81	22.83	22.76	24.2	1.0	
20	64QAM	1	1	21.85	21.73	21.67	22.7	2.5	
20	256QAM	1	1	19.84	19.34	19.35	20.7	4.5	
Channel				343500	349000	354500			
Frequency (MHz)				1717.5	1745	1772.5			
15	PI2 BPSK	1	1	23.93	23.90	23.89	25.2	0.0	
Channel				345500	349000	355500			
Frequency (MHz)				1715	1745	1775			
10	PI2 BPSK	1	1	23.96	23.96	23.97	25.2	0.0	
Channel				342500	349000	355500			
Frequency (MHz)				1712.5	1745	1777.5			
5	PI2 BPSK	1	1	24.01	23.99	23.91	25.2	0.0	

n71_Ant 0									
BW [MHz]	Modulation	RB Size	RB Offset	Power	Power	Power	Tune-up limit (dBm)	MPR (dB)	
				Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.			
Channel				134500	136100	137600			
Frequency (MHz)				673	680.5	688			
20	PI2 BPSK	1	1	24.20	24.18	24.16			
20	PI2 BPSK	1	53	24.12	24.10	23.91	25.2	0.0	
20	PI2 BPSK	1	104	24.10	23.91	23.86			
20	PI2 BPSK	50	0	22.80	23.51	23.47	24.7	0.5	
20	PI2 BPSK	50	28	24.07	24.01	23.86	25.2	0.0	
20	PI2 BPSK	50	56	23.58	23.47	23.39			
20	PI2 BPSK	100	0	23.60	23.51	23.46	24.7	0.5	
20	QPSK	1	1	24.13	24.08	24.11			
20	QPSK	1	53	24.04	24.01	23.84	25.2	0.0	
20	QPSK	1	104	24.02	23.88	23.40			
20	QPSK	50	0	22.49	22.73	22.86	24.2	1.0	
20	QPSK	50	28	23.43	23.92	23.59	25.2	0.0	
20	QPSK	50	56	22.89	22.81	22.28	24.2	1.0	
20	QPSK	100	0	22.76	22.78	22.48			
20	16QAM	1	1	23.02	22.96	22.99	24.2	1.0	
20	64QAM	1	1	21.89	21.81	21.83	22.7	2.5	
20	256QAM	1	1	19.53	19.46	19.32	20.7	4.5	
Channel				134100	136100	138100			
Frequency (MHz)				670.5	680.5	690.5			
15	PI2 BPSK	1	1	24.17	24.07	24.12	25.2	0.0	
Channel				133500	136100	138500			
Frequency (MHz)				668	680.5	693			
10	PI2 BPSK	1	1	24.15	24.16	24.14	25.2	0.0	
Channel				133100	136100	139100			
Frequency (MHz)				665.5	680.5	695.5			
5	PI2 BPSK	1	1	24.13	24.18	24.04	25.2	0.0	



n2_Ant 1

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel								
Frequency (MHz)				1860	1860	1900		
20	PI2 BPSK	1	1	12.53	12.44	12.40	13.5	0.0
20	PI2 BPSK	1	53	12.48	12.41	12.39		
20	PI2 BPSK	1	104	12.46	12.42	12.38		
20	PI2 BPSK	50	0	12.43	12.35	12.32	13.5	0.0
20	PI2 BPSK	50	28	12.45	12.38	12.39	13.5	0.0
20	PI2 BPSK	50	56	12.44	12.37	12.29	13.5	0.0
20	PI2 BPSK	100	0	12.49	12.36	12.28		
20	QPSK	1	1	12.28	12.20	12.21		
20	QPSK	1	53	12.29	12.27	12.15	13.5	0.0
20	QPSK	1	104	12.34	12.33	12.15		
20	QPSK	50	0	12.20	12.18	12.17		
20	QPSK	50	28	12.23	12.22	12.11	13.5	0.0
20	QPSK	50	56	12.23	12.22	12.10	13.5	0.0
20	QPSK	100	0	12.28	12.15	12.07		
20	16QAM	1	1	12.08	11.95	11.97		
20	16QAM	1	1	12.43	12.37	12.37	13.5	0.0
20	256QAM	1	1	12.12	12.05	12.05	13.5	0.0
Channel								
Frequency (MHz)				371500	376000	380500	Tune-up limit	MPR
Frequency (MHz)				1857.5	1860	1902.5	(dBm)	(dB)
15	PI2 BPSK	1	1	12.46	12.30	12.30	13.5	0.0
Channel								
Frequency (MHz)				371500	376000	381000	Tune-up limit	MPR
Frequency (MHz)				1855	1860	1905	(dBm)	(dB)
10	PI2 BPSK	1	1	12.47	12.39	12.40	13.5	0.0
Channel								
Frequency (MHz)				376500	376000	381500	Tune-up limit	MPR
Frequency (MHz)				1852.5	1860	1902.5	(dBm)	(dB)
5	PI2 BPSK	1	1	12.45	12.36	12.40	13.5	0.0

Reduced Power level 1 for Head - UAT

n5_Ant 1

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel								
Frequency (MHz)				166800	167300	167800		
20	PI2 BPSK	1	1	22.57	22.46	22.45	23.0	0.0
20	PI2 BPSK	1	53	22.50	22.43	22.41		
20	PI2 BPSK	1	104	22.37	22.30	22.27		
20	PI2 BPSK	50	0	22.44	22.33	22.32	23.0	0.0
20	PI2 BPSK	50	28	22.50	22.43	22.42	23.0	0.0
20	PI2 BPSK	50	56	22.42	22.35	22.36	23.0	0.0
20	PI2 BPSK	100	0	22.52	22.50	22.36		
20	QPSK	1	1	22.54	22.48	22.50		
20	QPSK	1	53	22.48	22.43	22.38	23.0	0.0
20	QPSK	1	104	22.38	22.35	22.36		
20	QPSK	50	0	22.49	22.47	22.42		
20	QPSK	50	28	22.41	22.44	22.37	23.0	0.0
20	QPSK	50	56	22.40	22.37	22.38	23.0	0.0
20	QPSK	100	0	22.44	22.41	22.39		
20	16QAM	1	1	22.56	22.50	22.48		
20	16QAM	1	1	22.15	22.11	22.07	22.5	0.5
20	256QAM	1	1	19.98	19.90	19.83	20.5	2.5
Channel								
Frequency (MHz)				166800	167300	168300	Tune-up limit	MPR
Frequency (MHz)				831.5	836.5	841.5	(dBm)	(dB)
15	PI2 BPSK	1	1	22.46	22.27	22.32	23.0	0.0
Channel								
Frequency (MHz)				166800	167300	168800	Tune-up limit	MPR
Frequency (MHz)				829	836.5	844	(dBm)	(dB)
10	PI2 BPSK	1	1	22.45	22.30	22.37	23.0	0.0
Channel								
Frequency (MHz)				165300	167300	169300	Tune-up limit	MPR
Frequency (MHz)				826.5	836.5	846.5	(dBm)	(dB)
5	PI2 BPSK	1	1	22.47	22.29	22.26	23.0	0.0

n25_Ant 1

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel								
Frequency (MHz)				1860	1862.5	1905		
20	PI2 BPSK	1	1	12.62	12.54	12.50	13.5	0.0
20	PI2 BPSK	1	53	12.56	12.52	12.41		
20	PI2 BPSK	1	104	12.58	12.44	12.47		
20	PI2 BPSK	50	0	12.52	12.46	12.40	13.5	0.0
20	PI2 BPSK	50	28	12.58	12.50	12.45	13.5	0.0
20	PI2 BPSK	50	56	12.54	12.48	12.43	13.5	0.0
20	PI2 BPSK	100	0	12.57	12.50	12.39		
20	QPSK	1	1	12.48	12.30	12.37		
20	QPSK	1	53	12.49	12.43	12.42	13.5	0.0
20	QPSK	1	104	12.48	12.49	12.44		
20	QPSK	50	0	12.45	12.32	12.39		
20	QPSK	50	28	12.46	12.37	12.38	13.5	0.0
20	QPSK	50	56	12.50	12.44	12.38	13.5	0.0
20	QPSK	100	0	12.48	12.41	12.45		
20	16QAM	1	1	12.52	12.30	12.40		
20	16QAM	1	1	12.56	12.46	12.51	13.5	0.0
20	256QAM	1	1	12.34	12.21	12.48	13.5	0.0
Channel								
Frequency (MHz)				371500	376500	381500	Tune-up limit	MPR
Frequency (MHz)				1857.5	1862.5	1907.5	(dBm)	(dB)
15	PI2 BPSK	1	1	12.48	12.36	12.30	13.5	0.0
Channel								
Frequency (MHz)				371500	376500	382000	Tune-up limit	MPR
Frequency (MHz)				1855	1862.5	1910	(dBm)	(dB)
10	PI2 BPSK	1	1	12.47	12.39	12.40	13.5	0.0
Channel								
Frequency (MHz)				376500	376500	382500	Tune-up limit	MPR
Frequency (MHz)				1852.5	1862.5	1912.5	(dBm)	(dB)
5	PI2 BPSK	1	1	12.45	12.36	12.40	13.5	0.0



n66_Ant 1								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. Freq.	Power Middle Ch. Freq.	Power High Ch. Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				344000	349000	354000		
Frequency (MHz)				1720	1745	1770		
20	PI2 BPSK	1	1	14.79	14.90	14.74		
20	PI2 BPSK	1	53	14.67	14.69	14.59	18.0	0.0
20	PI2 BPSK	1	104	14.72	14.74	14.64		
20	PI2 BPSK	50	0	14.57	14.60	14.57	18.0	0.0
20	PI2 BPSK	50	28	14.70	14.65	14.72	18.0	0.0
20	PI2 BPSK	50	56	14.55	14.63	14.60	18.0	0.0
20	PI2 BPSK	100	0	14.58	14.76	14.60		
20	QPSK	1	1	14.84	14.68	14.64		
20	QPSK	1	53	14.62	14.64	14.62	18.0	0.0
20	QPSK	1	104	14.70	14.72	14.66		
20	QPSK	50	0	14.60	14.68	14.58	18.0	0.0
20	QPSK	50	28	14.56	14.63	14.52	18.0	0.0
20	QPSK	50	56	14.84	14.66	14.61	18.0	0.0
20	QPSK	100	0	14.58	14.62	14.55		
20	16QAM	1	1	14.76	14.79	14.71	18.0	0.0
20	16QAM	1	1	14.73	14.78	14.60	18.0	0.0
20	256QAM	1	1	14.50	14.57	14.33	18.0	0.0
Channel				343500	349000	354500		
Frequency (MHz)				1717.5	1745	1772.5		
15	PI2 BPSK	1	1	14.68	14.69	14.54	18.0	0.0
Channel				343000	349000	355000		
Frequency (MHz)				1715	1745	1775		
10	PI2 BPSK	1	1	14.67	14.72	14.59	18.0	0.0
Channel				342500	349000	355500		
Frequency (MHz)				1712.5	1745	1777.5		
5	PI2 BPSK	1	1	14.69	14.71	14.48	18.0	0.0



n41_FCC_Ant 4								
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq	Power Middle Ch. / Freq	Power High Ch. / Freq	Tune-up limit (dBm)	MPR (dB)
Channel				50200	51898	52900		
Frequency (MHz)				2546.01	2592.99	2640		
100	PI2 BPSK	1	1	21.58	21.89	21.84		
100	PI2 BPSK	1	137	21.58	21.80	21.94	22.7	0.0
100	PI2 BPSK	1	271	21.66	21.92	22.04		
100	PI2 BPSK	135	0	21.58	21.75	21.86		
100	PI2 BPSK	135	69	21.60	21.92	21.96	22.7	0.0
100	PI2 BPSK	135	138	21.53	21.89	21.94		
100	PI2 BPSK	270	0	21.56	21.87	21.91	22.7	0.0
100	QPSK	1	1	21.70	21.84	21.87		
100	QPSK	1	137	21.58	21.92	21.96	22.7	0.0
100	QPSK	1	271	21.64	21.91	21.97		
100	QPSK	135	0	21.61	21.78	21.92		
100	QPSK	135	69	21.59	21.90	21.96	22.7	0.0
100	QPSK	135	138	21.52	21.96	21.96		
100	QPSK	270	0	21.57	21.92	21.93	22.7	0.0
100	16QAM	1	1	21.71	21.82	21.87	22.7	0.0
100	64QAM	1	1	21.60	21.73	21.77	22.7	0.0
100	256QAM	1	1	21.74	21.90	21.97	22.5	0.2
Channel				508200	518998	528996	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2541	2592.99	2644.98		
90	PI2 BPSK	1	1	21.52	21.46	21.64	22.7	0.0
Channel				510204	518998	529998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2536.02	2592.99	2649.99		
80	PI2 BPSK	1	1	21.46	21.63	21.62	22.7	0.0
Channel				505200	518998	531998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2529	2592.99	2659.98		
60	PI2 BPSK	1	1	21.50	21.81	21.70	22.7	0.0
Channel				504204	518998	532998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2521.02	2592.99	2664.99		
50	PI2 BPSK	1	1	21.62	21.46	21.62	22.7	0.0
Channel				503200	518998	534000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2516.01	2592.99	2670		
40	PI2 BPSK	1	1	21.50	21.58	21.76	22.7	0.0
Channel				502200	518998	534998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2511	2592.99	2674.98		
30	PI2 BPSK	1	1	21.68	21.69	21.70	22.7	0.0
Channel				501204	518998	535998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2506.02	2592.99	2679.99		
20	PI2 BPSK	1	1	21.50	21.71	21.75	22.7	0.0

n41_FCC(HPUE)_Ant 4								
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq	Power Middle Ch. / Freq	Power High Ch. / Freq	Tune-up limit (dBm)	MPR (dB)
Channel				50200	51898	52900		
Frequency (MHz)				2546.01	2592.99	2640		
100	PI2 BPSK	1	1	21.56	21.69	21.84		
100	PI2 BPSK	1	137	21.58	21.80	21.94	22.7	0.0
100	PI2 BPSK	1	271	21.66	21.92	22.04		
100	PI2 BPSK	135	0	21.58	21.75	21.86		
100	PI2 BPSK	135	69	21.60	21.92	21.96	22.7	0.0
100	PI2 BPSK	135	138	21.53	21.89	21.94		
100	PI2 BPSK	270	0	21.56	21.87	21.91	22.7	0.0
100	QPSK	1	1	21.70	21.84	21.87		
100	QPSK	1	137	21.58	21.92	21.96	22.7	0.0
100	QPSK	1	271	21.64	21.91	21.97		
100	QPSK	135	0	21.61	21.78	21.92		
100	QPSK	135	69	21.59	21.90	21.96	22.7	0.0
100	QPSK	135	138	21.52	21.96	21.96		
100	QPSK	270	0	21.57	21.92	21.93	22.7	0.0
100	16QAM	1	1	21.71	21.82	21.87	22.7	0.0
100	64QAM	1	1	21.60	21.73	21.77	22.7	0.0
100	256QAM	1	1	21.74	21.90	21.97	22.5	0.2
Channel				508200	518998	528996	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2541	2592.99	2644.98		
90	PI2 BPSK	1	1	21.52	21.46	21.64	22.7	0.0
Channel				510204	518998	529998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2536.02	2592.99	2649.99		
80	PI2 BPSK	1	1	21.46	21.63	21.62	22.7	0.0
Channel				505200	518998	531998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2529	2592.99	2659.98		
60	PI2 BPSK	1	1	21.50	21.81	21.70	22.7	0.0
Channel				504204	518998	532998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2521.02	2592.99	2664.99		
50	PI2 BPSK	1	1	21.62	21.46	21.62	22.7	0.0
Channel				503200	518998	534000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2516.01	2592.99	2670		
40	PI2 BPSK	1	1	21.50	21.58	21.76	22.7	0.0
Channel				502200	518998	534998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2511	2592.99	2674.98		
30	PI2 BPSK	1	1	21.68	21.69	21.70	22.7	0.0
Channel				501204	518998	535998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2506.02	2592.99	2679.99		
20	PI2 BPSK	1	1	21.50	21.71	21.75	22.7	0.0



Reduced Power level 2 for Head - UAT

n2_Ant 1									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				375000	376000	380000			
Frequency (MHz)				1860	1880	1900			
20	PI2 BPSK	1	1	12.53	12.44	12.40	13.5	0.0	
20	PI2 BPSK	1	53	12.48	12.41	12.39			
20	PI2 BPSK	1	104	12.46	12.42	12.38			
20	PI2 BPSK	50	0	12.43	12.35	12.32	13.5	0.0	
20	PI2 BPSK	50	28	12.45	12.38	12.39	13.5	0.0	
20	PI2 BPSK	50	56	12.44	12.37	12.29			
20	PI2 BPSK	100	0	12.49	12.36	12.28	13.5	0.0	
20	QPSK	1	1	12.28	12.20	12.21			
20	QPSK	1	53	12.29	12.27	12.15	13.5	0.0	
20	QPSK	1	104	12.34	12.33	12.15			
20	QPSK	50	0	12.20	12.16	12.17	13.5	0.0	
20	QPSK	50	28	12.23	12.22	12.11	13.5	0.0	
20	QPSK	50	56	12.23	12.22	12.10			
20	QPSK	100	0	12.28	12.15	12.07	13.5	0.0	
20	16QAM	1	1	12.08	11.95	11.97	13.5	0.0	
20	16QAM	1	1	12.43	12.37	12.37	13.5	0.0	
20	256QAM	1	1	12.12	12.05	12.05	13.5	0.0	
Channel				371500	376000	380500			
Frequency (MHz)				1857.5	1880	1902.5			
15	PI2 BPSK	1	1	12.46	12.30	12.28	13.5	0.0	
Channel				371500	376000	381000			
Frequency (MHz)				1855	1880	1905			
10	PI2 BPSK	1	1	12.47	12.39	12.40	13.5	0.0	
Channel				376500	376000	381500			
Frequency (MHz)				1892.5	1880	1890.5			
5	PI2 BPSK	1	1	12.45	12.36	12.40	13.5	0.0	

n5_Ant 1									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				166800	167300	167800			
Frequency (MHz)				834	836.5	839			
20	PI2 BPSK	1	1	20.56	20.50	20.50			
20	PI2 BPSK	1	53	20.51	20.46	20.44	21.0	0.0	
20	PI2 BPSK	1	104	20.38	20.35	20.30			
20	PI2 BPSK	50	0	20.48	20.45	20.39	21.0	0.0	
20	PI2 BPSK	50	28	20.50	20.46	20.44	21.0	0.0	
20	PI2 BPSK	50	56	20.45	20.43	20.40			
20	PI2 BPSK	100	0	20.54	20.50	20.41	21.0	0.0	
20	QPSK	1	1	20.55	20.53	20.52			
20	QPSK	1	53	20.48	20.47	20.49	21.0	0.0	
20	QPSK	1	104	20.42	20.37	20.41			
20	QPSK	50	0	20.49	20.45	20.44	21.0	0.0	
20	QPSK	50	28	20.53	20.50	20.38	21.0	0.0	
20	QPSK	50	56	20.46	20.41	20.40			
20	QPSK	100	0	20.46	20.45	20.36	21.0	0.0	
20	16QAM	1	1	20.45	20.42	20.41	21.0	0.0	
20	16QAM	1	1	20.47	20.46	20.43	21.0	0.0	
20	256QAM	1	1	19.97	19.93	19.87	20.5	0.5	
Channel				166300	167300	168300			
Frequency (MHz)				831.5	836.5	841.5			
15	PI2 BPSK	1	1	20.46	20.27	20.32	21.0	0.0	
Channel				166300	167300	168900			
Frequency (MHz)				829	836.5	844			
10	PI2 BPSK	1	1	20.45	20.30	20.37	21.0	0.0	
Channel				165300	167300	169300			
Frequency (MHz)				826.5	836.5	846.5			
5	PI2 BPSK	1	1	20.47	20.29	20.26	21.0	0.0	

n25_Ant 1									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				372500	375500	381000			
Frequency (MHz)				1860	1862.5	1905			
20	PI2 BPSK	1	1	12.62	12.54	12.50			
20	PI2 BPSK	1	53	12.56	12.52	12.41	13.5	0.0	
20	PI2 BPSK	1	104	12.58	12.44	12.47			
20	PI2 BPSK	50	0	12.52	12.46	12.40	13.5	0.0	
20	PI2 BPSK	50	28	12.58	12.50	12.45	13.5	0.0	
20	PI2 BPSK	50	56	12.54	12.48	12.43			
20	PI2 BPSK	100	0	12.57	12.50	12.39	13.5	0.0	
20	QPSK	1	1	12.48	12.30	12.37			
20	QPSK	1	53	12.49	12.43	12.42	13.5	0.0	
20	QPSK	1	104	12.48	12.49	12.44			
20	QPSK	50	0	12.45	12.32	12.39	13.5	0.0	
20	QPSK	50	28	12.46	12.37	12.38	13.5	0.0	
20	QPSK	50	56	12.50	12.44	12.38	13.5	0.0	
20	QPSK	100	0	12.48	12.41	12.45			
20	16QAM	1	1	12.52	12.30	12.40	13.5	0.0	
20	16QAM	1	1	12.56	12.46	12.51	13.5	0.0	
20	256QAM	1	1	12.34	12.21	12.48	13.5	0.0	
Channel				371500	376500	381500			
Frequency (MHz)				1857.5	1862.5	1907.5			
15	PI2 BPSK	1	1	12.48	12.36	12.30	13.5	0.0	
Channel				371500	375500	380000			
Frequency (MHz)				1855	1862.5	1910			
10	PI2 BPSK	1	1	12.47	12.39	12.40	13.5	0.0	
Channel				376500	376500	382500			
Frequency (MHz)				1892.5	1892.5	1912.5			
5	PI2 BPSK	1	1	12.45	12.36	12.40	13.5	0.0	



n66_Ant 1									
BW [MHz]	Modulation	RB Size	RB Offset	Power	Power	Power	Tune-up limit (dBm)	MPR (dB)	
				Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.			
Channel				345000	349000	354000			
Frequency (MHz)				1745	1745	1770			
20	PI2 BPSK	1	1	14.79	14.90	14.74			
20	PI2 BPSK	1	53	14.67	14.69	14.69	16.0	0.0	
20	PI2 BPSK	1	104	14.72	14.74	14.64			
20	PI2 BPSK	50	0	14.57	14.60	14.57	16.0	0.0	
20	PI2 BPSK	50	28	14.70	14.85	14.72	16.0	0.0	
20	PI2 BPSK	50	56	14.55	14.63	14.60			
20	PI2 BPSK	100	0	14.56	14.76	14.60	16.0	0.0	
20	QPSK	1	1	14.64	14.66	14.64			
20	QPSK	1	53	14.62	14.64	14.62	16.0	0.0	
20	QPSK	1	104	14.70	14.72	14.66			
20	QPSK	50	0	14.50	14.66	14.58	16.0	0.0	
20	QPSK	50	28	14.56	14.63	14.59	16.0	0.0	
20	QPSK	50	56	14.64	14.66	14.61			
20	QPSK	100	0	14.56	14.62	14.55	16.0	0.0	
20	16QAM	1	1	14.76	14.79	14.71	16.0	0.0	
20	64QAM	1	1	14.73	14.76	14.60	16.0	0.0	
20	256QAM	1	1	14.50	14.57	14.33	16.0	0.0	
Channel				343500	349000	354500			
Frequency (MHz)				1717.5	1745	1772.5			
15	PI2 BPSK	1	1	14.88	14.60	14.54	16.0	0.0	
Channel				353500	349000	355500			
Frequency (MHz)				1715	1745	1775			
10	PI2 BPSK	1	1	14.67	14.72	14.59	16.0	0.0	
Channel				342500	349000	355500			
Frequency (MHz)				1712.5	1745	1772.5			
5	PI2 BPSK	1	1	14.69	14.71	14.48	16.0	0.0	

n71_Ant 1									
BW [MHz]	Modulation	RB Size	RB Offset	Power	Power	Power	Tune-up limit (dBm)	MPR (dB)	
				Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.			
Channel				134500	136000	137600			
Frequency (MHz)				673	680.5	688			
20	PI2 BPSK	1	1	22.45	22.34	22.33			
20	PI2 BPSK	1	53	22.38	22.31	22.29	23.0	0.0	
20	PI2 BPSK	1	104	22.26	22.18	22.15			
20	PI2 BPSK	50	0	22.32	22.21	22.20	23.0	0.0	
20	PI2 BPSK	50	28	22.38	22.31	22.30	23.0	0.0	
20	PI2 BPSK	50	56	22.30	22.23	22.24			
20	PI2 BPSK	100	0	22.40	22.38	22.23	23.0	0.0	
20	QPSK	1	1	22.42	22.36	22.38			
20	QPSK	1	53	22.38	22.31	22.24	23.0	0.0	
20	QPSK	1	104	22.26	22.23	22.24			
20	QPSK	50	0	22.37	22.36	22.30	23.0	0.0	
20	QPSK	50	28	22.36	22.32	22.25	23.0	0.0	
20	QPSK	50	56	22.28	22.25	22.26			
20	QPSK	100	0	22.32	22.29	22.27	23.0	0.0	
20	16QAM	1	1	22.44	22.38	22.36	23.0	0.0	
20	64QAM	1	1	22.03	21.99	21.95	22.5	0.5	
20	256QAM	1	1	19.86	19.78	19.71	20.5	2.5	
Channel				134100	136100	138100			
Frequency (MHz)				670.5	680.5	690.5			
15	PI2 BPSK	1	1	22.41	22.30	22.23	23.0	0.0	
Channel				133600	136100	138600			
Frequency (MHz)				668	680.5	693			
10	PI2 BPSK	1	1	22.35	22.33	22.21	23.0	0.0	
Channel				133100	136100	139100			
Frequency (MHz)				665.5	680.5	695.5			
5	PI2 BPSK	1	1	22.34	22.30	22.26	23.0	0.0	



n41_FCC_Ant 4								
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq	Power Middle Ch. / Freq	Power High Ch. / Freq	Tune-up limit (dBm)	MPR (dB)
Channel				50200	51898	52900		
Frequency (MHz)				2546.01	2592.99	2640		
100	PI2 BPSK	1	1	21.58	21.89	21.84		
100	PI2 BPSK	1	137	21.58	21.80	21.94	22.7	0.0
100	PI2 BPSK	1	271	21.66	21.92	22.04		
100	PI2 BPSK	135	0	21.58	21.75	21.86		
100	PI2 BPSK	135	69	21.60	21.92	21.96	22.7	0.0
100	PI2 BPSK	135	138	21.53	21.89	21.94		
100	PI2 BPSK	270	0	21.56	21.87	21.91	22.7	0.0
100	QPSK	1	1	21.70	21.84	21.87		
100	QPSK	1	137	21.58	21.92	21.96	22.7	0.0
100	QPSK	1	271	21.64	21.91	21.97		
100	QPSK	135	0	21.61	21.78	21.92		
100	QPSK	135	69	21.59	21.90	21.96	22.7	0.0
100	QPSK	135	138	21.52	21.96	21.96		
100	QPSK	270	0	21.57	21.92	21.93	22.7	0.0
100	16QAM	1	1	21.71	21.82	21.87	22.7	0.0
100	64QAM	1	1	21.60	21.73	21.77	22.7	0.0
100	256QAM	1	1	21.74	21.93	21.97	22.5	0.2
Channel				508200	518998	528996	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2541	2592.99	2644.98		
90	PI2 BPSK	1	1	21.52	21.46	21.64	22.7	0.0
Channel				512004	518998	529998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2536.02	2592.99	2649.99		
80	PI2 BPSK	1	1	21.46	21.63	21.62	22.7	0.0
Channel				505200	518998	531998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2524	2592.99	2658.98		
60	PI2 BPSK	1	1	21.50	21.81	21.70	22.7	0.0
Channel				504204	518998	532998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2521.02	2592.99	2664.99		
50	PI2 BPSK	1	1	21.62	21.46	21.62	22.7	0.0
Channel				503200	518998	534000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2516.01	2592.99	2670		
40	PI2 BPSK	1	1	21.50	21.58	21.76	22.7	0.0
Channel				502200	518998	534998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2511	2592.99	2674.98		
30	PI2 BPSK	1	1	21.68	21.69	21.70	22.7	0.0
Channel				501204	518998	535998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2506.02	2592.99	2679.99		
20	PI2 BPSK	1	1	21.50	21.71	21.75	22.7	0.0

n41_FCC(HPUE)_Ant 4								
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq	Power Middle Ch. / Freq	Power High Ch. / Freq	Tune-up limit (dBm)	MPR (dB)
Channel				50200	51898	52900		
Frequency (MHz)				2546.01	2592.99	2640		
100	PI2 BPSK	1	1	21.56	21.69	21.84		
100	PI2 BPSK	1	137	21.58	21.80	21.94	22.7	0.0
100	PI2 BPSK	1	271	21.66	21.92	22.04		
100	PI2 BPSK	135	0	21.58	21.75	21.86		
100	PI2 BPSK	135	69	21.60	21.92	21.96	22.7	0.0
100	PI2 BPSK	135	138	21.53	21.89	21.94		
100	PI2 BPSK	270	0	21.56	21.87	21.91	22.7	0.0
100	QPSK	1	1	21.70	21.84	21.87		
100	QPSK	1	137	21.58	21.92	21.96	22.7	0.0
100	QPSK	1	271	21.64	21.91	21.97		
100	QPSK	135	0	21.61	21.78	21.92		
100	QPSK	135	69	21.59	21.90	21.96	22.7	0.0
100	QPSK	135	138	21.52	21.96	21.96		
100	QPSK	270	0	21.57	21.92	21.93	22.7	0.0
100	16QAM	1	1	21.71	21.82	21.87	22.7	0.0
100	64QAM	1	1	21.60	21.73	21.77	22.7	0.0
100	256QAM	1	1	21.74	21.93	21.97	22.5	0.2
Channel				508200	518998	528996	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2541	2592.99	2644.98		
90	PI2 BPSK	1	1	21.52	21.46	21.64	22.7	0.0
Channel				512004	518998	529998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2536.02	2592.99	2649.99		
80	PI2 BPSK	1	1	21.46	21.63	21.62	22.7	0.0
Channel				505200	518998	531998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2524	2592.99	2658.98		
60	PI2 BPSK	1	1	21.50	21.81	21.70	22.7	0.0
Channel				504204	518998	532998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2521.02	2592.99	2664.99		
50	PI2 BPSK	1	1	21.62	21.46	21.62	22.7	0.0
Channel				503200	518998	534000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2516.01	2592.99	2670		
40	PI2 BPSK	1	1	21.50	21.58	21.76	22.7	0.0
Channel				502200	518998	534998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2511	2592.99	2674.98		
30	PI2 BPSK	1	1	21.68	21.69	21.70	22.7	0.0
Channel				501204	518998	535998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2506.02	2592.99	2679.99		
20	PI2 BPSK	1	1	21.50	21.71	21.75	22.7	0.0



Reduced power for Hotspot on-UAT

n2_Ant 1									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				375000	376000	380000			
Frequency (MHz)				1860	1880	1900			
20	PI2 BPSK	1	1	17.97	17.84	17.88			
20	PI2 BPSK	1	53	17.92	17.81	17.85	18.8	0.0	
20	PI2 BPSK	1	104	17.94	17.82	17.83			
20	PI2 BPSK	50	0	17.88	17.70	17.81	18.8	0.0	
20	PI2 BPSK	50	28	17.94	17.80	17.90	18.8	0.0	
20	PI2 BPSK	50	56	17.91	17.80	17.86			
20	PI2 BPSK	100	0	17.92	17.74	17.89	18.8	0.0	
20	QPSK	1	1	17.93	17.77	17.80			
20	QPSK	1	53	17.95	17.80	17.89	18.8	0.0	
20	QPSK	1	104	17.94	17.84	17.86			
20	QPSK	50	0	17.89	17.77	17.85	18.8	0.0	
20	QPSK	50	28	17.90	17.79	17.82	18.8	0.0	
20	QPSK	50	56	17.91	17.77	17.83			
20	QPSK	100	0	17.90	17.78	17.82	18.8	0.0	
20	16QAM	1	1	17.75	17.58	17.62	18.8	0.0	
20	16QAM	1	1	17.95	17.83	17.92	18.8	0.0	
20	256QAM	1	1	17.82	17.63	17.75	18.8	0.0	
Channel				371500	376000	380500			
Frequency (MHz)				1857.5	1880	1902.5			
15	PI2 BPSK	1	1	17.76	17.60	17.63	18.8	0.0	
Channel				371500	376000	381000			
Frequency (MHz)				1855	1880	1905			
10	PI2 BPSK	1	1	17.77	17.69	17.70	18.8	0.0	
Channel				376500	376000	381500			
Frequency (MHz)				1892.5	1880	1897.5			
5	PI2 BPSK	1	1	17.75	17.66	17.70	18.8	0.0	

n25_Ant 1									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				372000	376500	381000			
Frequency (MHz)				1860	1882.5	1905			
20	PI2 BPSK	1	1	18.04	17.85	17.84			
20	PI2 BPSK	1	53	17.91	17.72	17.82	18.8	0.0	
20	PI2 BPSK	1	104	17.90	17.82	17.83			
20	PI2 BPSK	50	0	17.89	17.80	17.80	18.8	0.0	
20	PI2 BPSK	50	28	17.94	17.84	17.82	18.8	0.0	
20	PI2 BPSK	50	56	17.90	17.81	17.79			
20	PI2 BPSK	100	0	17.90	17.77	17.78	18.8	0.0	
20	QPSK	1	1	17.89	17.82	17.82			
20	QPSK	1	53	17.93	17.87	17.87	18.8	0.0	
20	QPSK	1	104	17.92	17.90	17.84			
20	QPSK	50	0	17.88	17.78	17.85	18.8	0.0	
20	QPSK	50	28	17.90	17.79	17.80	18.8	0.0	
20	QPSK	50	56	17.92	17.79	17.78			
20	QPSK	100	0	17.88	17.80	17.79	18.8	0.0	
20	16QAM	1	1	17.89	17.86	17.76	18.8	0.0	
20	16QAM	1	1	18.01	17.89	17.80	18.8	0.0	
20	256QAM	1	1	17.84	17.66	17.70	18.8	0.0	
Channel				371500	376500	381500			
Frequency (MHz)				1857.5	1882.5	1907.5			
15	PI2 BPSK	1	1	17.50	17.46	17.49	18.8	0.0	
Channel				371500	376500	382000			
Frequency (MHz)				1855	1882.5	1910			
10	PI2 BPSK	1	1	17.58	17.51	17.54	18.8	0.0	
Channel				376500	376500	382500			
Frequency (MHz)				1892.5	1882.5	1912.5			
5	PI2 BPSK	1	1	17.54	17.47	17.48	18.8	0.0	

n66_Ant 1									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				344000	345000	346000			
Frequency (MHz)				1720	1745	1770			
20	PI2 BPSK	1	1	18.88	19.30	19.05			
20	PI2 BPSK	1	53	18.86	18.97	18.95	20.0	0.0	
20	PI2 BPSK	1	104	18.92	19.07	19.02			
20	PI2 BPSK	50	0	18.85	19.00	18.92	20.0	0.0	
20	PI2 BPSK	50	28	18.89	19.29	18.97	20.0	0.0	
20	PI2 BPSK	50	56	18.87	18.95	18.94			
20	PI2 BPSK	100	0	18.88	19.00	18.91	20.0	0.0	
20	QPSK	1	1	18.88	18.94	18.93			
20	QPSK	1	53	18.91	18.92	18.86	20.0	0.0	
20	QPSK	1	104	18.98	19.00	18.96			
20	QPSK	50	0	18.85	18.88	18.81	20.0	0.0	
20	QPSK	50	28	18.86	18.89	18.83	20.0	0.0	
20	QPSK	50	56	18.88	18.90	18.82	20.0	0.0	
20	QPSK	100	0	18.86	18.88	18.85	20.0	0.0	
20	16QAM	1	1	18.97	19.04	19.00	20.0	0.0	
20	16QAM	1	1	18.99	19.06	18.94	20.0	0.0	
20	256QAM	1	1	18.78	18.80	18.68	20.0	0.0	
Channel				343500	349000	349500			
Frequency (MHz)				1717.5	1745	1772.5			
15	PI2 BPSK	1	1	18.75	18.88	18.82	20.0	0.0	
Channel				343500	345000	350000			
Frequency (MHz)				1715	1745	1775			
10	PI2 BPSK	1	1	18.94	18.97	18.94	20.0	0.0	
Channel				342500	349000	355500			
Frequency (MHz)				1712.5	1745	1772.5			
5	PI2 BPSK	1	1	18.91	19.00	18.92	20.0	0.0	



n41_FCC_Ant 4								
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				50200	51898	52800		
Frequency (MHz)				2546.01	2592.99	2640		
100	PI2 BPSK	1	1	14.90	15.21	15.20		
100	PI2 BPSK	1	137	14.96	15.31	15.32	16.0	0.0
100	PI2 BPSK	1	271	15.06	15.39	15.43		
100	PI2 BPSK	135	0	14.93	15.22	15.27		
100	PI2 BPSK	135	69	14.98	15.37	15.40	16.0	0.0
100	PI2 BPSK	135	138	14.78	15.29	15.36		
100	PI2 BPSK	270	0	14.88	15.31	15.32	16.0	0.0
100	QPSK	1	1	15.03	15.31	15.28		
100	QPSK	1	137	14.88	15.30	15.38	16.0	0.0
100	QPSK	1	271	14.95	15.41	15.40		
100	QPSK	135	0	15.06	15.22	15.26		
100	QPSK	135	69	14.88	15.30	15.36	16.0	0.0
100	QPSK	135	138	14.85	15.27	15.36		
100	QPSK	270	0	14.88	15.28	15.37	16.0	0.0
100	16QAM	1	1	15.01	15.22	15.30	16.0	0.0
100	64QAM	1	1	14.95	15.10	15.16	16.0	0.0
100	256QAM	1	1	15.10	15.24	15.28	16.0	0.0
Channel				508200	518998	528996	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2541	2592.99	2644.98		
90	PI2 BPSK	1	1	14.82	14.76	14.94	16.0	0.0
Channel				512204	518998	529998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2536.02	2592.99	2649.99		
80	PI2 BPSK	1	1	14.82	14.93	14.92	16.0	0.0
Channel				505200	518998	531998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2521	2592.99	2658.98		
60	PI2 BPSK	1	1	14.80	15.11	15.00	16.0	0.0
Channel				504204	518998	532998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2521.02	2592.99	2664.99		
50	PI2 BPSK	1	1	14.92	14.76	14.92	16.0	0.0
Channel				503202	518998	533000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2516.01	2592.99	2670		
40	PI2 BPSK	1	1	14.80	14.88	15.06	16.0	0.0
Channel				502200	518998	534998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2511	2592.99	2674.98		
30	PI2 BPSK	1	1	14.95	14.99	14.89	16.0	0.0
Channel				501204	518998	535998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2506.02	2592.99	2679.99		
20	PI2 BPSK	1	1	14.80	15.01	15.05	16.0	0.0

n41(HPUE)_FCC_Ant 4								
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				50200	51898	52800		
Frequency (MHz)				2546.01	2592.99	2640		
100	PI2 BPSK	1	1	14.90	15.21	15.20		
100	PI2 BPSK	1	137	14.96	15.31	15.32	16.0	0.0
100	PI2 BPSK	1	271	15.06	15.39	15.43		
100	PI2 BPSK	135	0	14.93	15.22	15.27		
100	PI2 BPSK	135	69	14.98	15.37	15.40	16.0	0.0
100	PI2 BPSK	135	138	14.78	15.29	15.36		
100	PI2 BPSK	270	0	14.88	15.31	15.32	16.0	0.0
100	QPSK	1	1	15.03	15.31	15.28		
100	QPSK	1	137	14.88	15.30	15.38	16.0	0.0
100	QPSK	1	271	14.95	15.41	15.40		
100	QPSK	135	0	15.06	15.22	15.26		
100	QPSK	135	69	14.88	15.30	15.36	16.0	0.0
100	QPSK	135	138	14.85	15.27	15.36		
100	QPSK	270	0	14.88	15.28	15.37	16.0	0.0
100	16QAM	1	1	15.01	15.22	15.30	16.0	0.0
100	64QAM	1	1	14.95	15.10	15.16	16.0	0.0
100	256QAM	1	1	15.10	15.24	15.28	16.0	0.0
Channel				508200	518998	528996	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2541	2592.99	2644.98		
90	PI2 BPSK	1	1	14.82	14.76	14.94	16.0	0.0
Channel				512204	518998	529998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2536.02	2592.99	2649.99		
80	PI2 BPSK	1	1	14.82	14.93	14.92	16.0	0.0
Channel				505200	518998	531998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2521	2592.99	2658.98		
60	PI2 BPSK	1	1	14.80	15.11	15.00	16.0	0.0
Channel				504204	518998	532998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2521.02	2592.99	2664.99		
50	PI2 BPSK	1	1	14.92	14.76	14.92	16.0	0.0
Channel				503202	518998	533000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2516.01	2592.99	2670		
40	PI2 BPSK	1	1	14.80	14.88	15.06	16.0	0.0
Channel				502200	518998	534998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2511	2592.99	2674.98		
30	PI2 BPSK	1	1	14.95	14.99	14.89	16.0	0.0
Channel				501204	518998	535998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2506.02	2592.99	2679.99		
20	PI2 BPSK	1	1	14.80	15.01	15.05	16.0	0.0



Reduced power for Sensor on-UAT

n2_Ant 1									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				375000	376000	380000			
Frequency (MHz)				1860	1880	1900			
20	PI2 BPSK	1	1	19.57	19.41	19.35	20.3	0.0	
20	PI2 BPSK	1	53	19.47	19.38	19.42			
20	PI2 BPSK	1	104	19.49	19.41	19.33			
20	PI2 BPSK	50	0	19.44	19.40	19.38	20.3	0.0	
20	PI2 BPSK	50	28	19.46	19.38	19.37	20.3	0.0	
20	PI2 BPSK	50	56	19.42	19.30	19.35			
20	PI2 BPSK	100	0	19.44	19.39	19.33	20.3	0.0	
20	QPSK	1	1	19.55	19.35	19.38			
20	QPSK	1	53	19.51	19.40	19.39	20.3	0.0	
20	QPSK	1	104	19.50	19.48	19.41			
20	QPSK	50	0	19.47	19.37	19.34	20.3	0.0	
20	QPSK	50	28	19.48	19.47	19.36	20.3	0.0	
20	QPSK	50	56	19.50	19.36	19.34	20.3	0.0	
20	QPSK	100	0	19.47	19.34	19.34			
20	16QAM	1	1	19.32	19.18	19.13	20.3	0.0	
20	16QAM	1	1	19.42	19.45	19.34	20.3	0.0	
20	256QAM	1	1	19.31	19.20	19.24	20.3	0.0	
Channel				371500	376000	380500	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1857.5	1880	1902.5			
15	PI2 BPSK	1	1	19.47	19.37	19.29	20.3	0.0	
Channel				371000	376500	381000	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1855	1880	1905			
10	PI2 BPSK	1	1	19.48	19.40	19.41	20.3	0.0	
Channel				376500	376000	381500	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1892.5	1880	1902.5			
5	PI2 BPSK	1	1	19.46	19.37	19.41	20.3	0.0	

n25_Ant 1									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				372000	376500	381000			
Frequency (MHz)				1860	1882.5	1905			
20	PI2 BPSK	1	1	19.62	19.54	19.48			
20	PI2 BPSK	1	53	19.57	19.50	19.44	20.3	0.0	
20	PI2 BPSK	1	104	19.56	19.40	19.46			
20	PI2 BPSK	50	0	19.53	19.43	19.43	20.3	0.0	
20	PI2 BPSK	50	28	19.54	19.47	19.44	20.3	0.0	
20	PI2 BPSK	50	56	19.52	19.42	19.38			
20	PI2 BPSK	100	0	19.53	19.42	19.38	20.3	0.0	
20	QPSK	1	1	19.60	19.47	19.42			
20	QPSK	1	53	19.55	19.54	19.48	20.3	0.0	
20	QPSK	1	104	19.58	19.55	19.46			
20	QPSK	50	0	19.52	19.43	19.36	20.3	0.0	
20	QPSK	50	28	19.53	19.45	19.50	20.3	0.0	
20	QPSK	50	56	19.50	19.46	19.40	20.3	0.0	
20	QPSK	100	0	19.50	19.43	19.45			
20	16QAM	1	1	19.55	19.53	19.48	20.3	0.0	
20	16QAM	1	1	19.57	19.50	19.57	20.3	0.0	
20	256QAM	1	1	19.44	19.37	19.35	20.3	0.0	
Channel				371500	376500	381500	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1857.5	1882.5	1907.5			
15	PI2 BPSK	1	1	19.38	19.37	19.40	20.3	0.0	
Channel				371000	376500	382000	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1855	1882.5	1910			
10	PI2 BPSK	1	1	19.37	19.42	19.45	20.3	0.0	
Channel				376500	376500	382500	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1892.5	1882.5	1912.5			
5	PI2 BPSK	1	1	19.45	19.38	19.37	20.3	0.0	

n66_Ant 1									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				344000	345000	346000			
Frequency (MHz)				1720	1745	1770			
20	PI2 BPSK	1	1	20.57	20.64	20.45			
20	PI2 BPSK	1	53	20.42	20.50	20.31	21.3	0.0	
20	PI2 BPSK	1	104	20.33	20.56	20.36			
20	PI2 BPSK	50	0	20.39	20.50	20.37	21.3	0.0	
20	PI2 BPSK	50	28	20.33	20.57	20.36	21.3	0.0	
20	PI2 BPSK	50	56	20.37	20.41	20.33			
20	PI2 BPSK	100	0	20.32	20.50	20.32	21.3	0.0	
20	QPSK	1	1	20.35	20.53	20.44			
20	QPSK	1	53	20.43	20.41	20.36	21.3	0.0	
20	QPSK	1	104	20.57	20.51	20.46			
20	QPSK	50	0	20.40	20.42	20.31	21.3	0.0	
20	QPSK	50	28	20.36	20.41	20.33	21.3	0.0	
20	QPSK	50	56	20.38	20.38	20.38	21.3	0.0	
20	QPSK	100	0	20.34	20.35	20.37			
20	16QAM	1	1	20.50	20.51	20.45	21.3	0.0	
20	16QAM	1	1	20.46	20.54	20.52	21.3	0.0	
20	256QAM	1	1	19.73	19.46	19.70	21.3	0.0	
Channel				343500	348000	348500	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1717.5	1745	1772.5			
15	PI2 BPSK	1	1	20.29	20.33	20.27	21.3	0.0	
Channel				343000	345000	345500	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1715	1745	1775			
10	PI2 BPSK	1	1	20.29	20.42	20.39	21.3	0.0	
Channel				342500	345000	355500	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1712.5	1745	1772.5			
5	PI2 BPSK	1	1	20.28	20.45	20.37	21.3	0.0	



n41_FCC_Ant 4							
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	MPR (dB)
Channel				50200	51898	52900	
Frequency (MHz)				2546.01	2592.99	2640	
100	PI2 BPSK	1	1	17.40	17.71	17.70	
100	PI2 BPSK	1	137	17.46	17.81	17.82	18.5
100	PI2 BPSK	1	271	17.56	17.89	17.93	
100	PI2 BPSK	135	0	17.43	17.72	17.77	
100	PI2 BPSK	135	69	17.48	17.87	17.90	18.5
100	PI2 BPSK	135	138	17.28	17.79	17.86	
100	PI2 BPSK	270	0	17.36	17.81	17.82	18.5
100	QPSK	1	1	17.50	17.78	17.75	
100	QPSK	1	137	17.35	17.77	17.85	18.5
100	QPSK	1	271	17.42	17.88	17.87	
100	QPSK	135	0	17.53	17.69	17.73	
100	QPSK	135	69	17.35	17.77	17.83	18.5
100	QPSK	135	138	17.32	17.74	17.83	
100	QPSK	270	0	17.36	17.75	17.84	18.5
100	16QAM	1	1	17.48	17.69	17.77	18.5
100	64QAM	1	1	17.42	17.57	17.65	18.5
100	256QAM	1	1	17.57	17.71	17.75	18.5
Channel				508200	518998	528998	
Frequency (MHz)				2541	2592.99	2644.98	
90	PI2 BPSK	1	1	17.32	17.28	17.44	18.5
Channel				512204	518998	528998	
Frequency (MHz)				2536.02	2592.99	2649.99	
80	PI2 BPSK	1	1	17.32	17.43	17.42	18.5
Channel				505200	518998	531998	
Frequency (MHz)				2529	2592.99	2658.98	
60	PI2 BPSK	1	1	17.30	17.11	17.50	18.5
Channel				504204	518998	532998	
Frequency (MHz)				2521.02	2592.99	2664.99	
50	PI2 BPSK	1	1	17.42	17.28	17.42	18.5
Channel				503202	518998	533000	
Frequency (MHz)				2516.01	2592.99	2670	
40	PI2 BPSK	1	1	17.30	17.38	17.56	18.5
Channel				502200	518998	534998	
Frequency (MHz)				2511	2592.99	2674.98	
30	PI2 BPSK	1	1	17.48	17.49	17.39	18.5
Channel				501204	518998	535998	
Frequency (MHz)				2506.02	2592.99	2679.99	
20	PI2 BPSK	1	1	17.30	17.51	17.55	18.5

n41(HPUUE_FCC_Ant 4							
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	MPR (dB)
Channel				50200	51898	52900	
Frequency (MHz)				2546.01	2592.99	2640	
100	PI2 BPSK	1	1	17.40	17.71	17.70	
100	PI2 BPSK	1	137	17.46	17.81	17.82	18.5
100	PI2 BPSK	1	271	17.56	17.89	17.93	
100	PI2 BPSK	135	0	17.43	17.72	17.77	
100	PI2 BPSK	135	69	17.48	17.87	17.90	18.5
100	PI2 BPSK	135	138	17.28	17.79	17.86	
100	PI2 BPSK	270	0	17.36	17.81	17.82	18.5
100	QPSK	1	1	17.50	17.78	17.75	
100	QPSK	1	137	17.35	17.77	17.85	18.5
100	QPSK	1	271	17.42	17.88	17.87	
100	QPSK	135	0	17.53	17.69	17.73	
100	QPSK	135	69	17.35	17.77	17.83	18.5
100	QPSK	135	138	17.32	17.74	17.83	
100	QPSK	270	0	17.36	17.75	17.84	18.5
100	16QAM	1	1	17.48	17.69	17.77	18.5
100	64QAM	1	1	17.42	17.57	17.65	18.5
100	256QAM	1	1	17.57	17.71	17.75	18.5
Channel				508200	518998	528998	
Frequency (MHz)				2541	2592.99	2644.98	
90	PI2 BPSK	1	1	17.32	17.28	17.44	18.5
Channel				512204	518998	528998	
Frequency (MHz)				2536.02	2592.99	2649.99	
80	PI2 BPSK	1	1	17.32	17.43	17.42	18.5
Channel				505200	518998	531998	
Frequency (MHz)				2529	2592.99	2658.98	
60	PI2 BPSK	1	1	17.30	17.11	17.50	18.5
Channel				504204	518998	532998	
Frequency (MHz)				2521.02	2592.99	2664.99	
50	PI2 BPSK	1	1	17.42	17.28	17.42	18.5
Channel				503202	518998	533000	
Frequency (MHz)				2516.01	2592.99	2670	
40	PI2 BPSK	1	1	17.30	17.38	17.56	18.5
Channel				502200	518998	534998	
Frequency (MHz)				2511	2592.99	2674.98	
30	PI2 BPSK	1	1	17.48	17.49	17.39	18.5
Channel				501204	518998	535998	
Frequency (MHz)				2506.02	2592.99	2679.99	
20	PI2 BPSK	1	1	17.30	17.51	17.55	18.5



Reduced power for Hotspot on/Sensor on-LAT

n2_Ant 0									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				372000	376000	380000			
Frequency (MHz)				1860	1880	1900			
20	PI2 BPSK	1	1	21.39	21.33	21.37			
20	PI2 BPSK	1	53	21.34	21.32	21.35	22.2	0.0	
20	PI2 BPSK	1	104	21.34	21.32	21.34			
20	PI2 BPSK	50	0	21.35	21.31	21.32	22.2	0.0	
20	PI2 BPSK	50	28	21.38	21.32	21.34	22.2	0.0	
20	PI2 BPSK	50	56	21.37	21.30	21.31			
20	PI2 BPSK	100	0	21.29	21.26	21.23	22.2	0.0	
20	QPSK	1	1	21.35	21.27	21.24			
20	QPSK	1	53	21.28	21.25	21.22	22.2	0.0	
20	QPSK	1	104	21.29	21.27	21.17			
20	QPSK	50	0	21.36	21.24	21.23	22.2	0.0	
20	QPSK	50	28	21.34	21.25	21.26	22.2	0.0	
20	QPSK	50	56	21.27	21.21	21.17	22.2	0.0	
20	QPSK	100	0	21.30	21.24	21.22	22.2	0.0	
20	16QAM	1	1	21.32	21.33	21.35	22.2	0.0	
20	16QAM	1	1	21.28	21.36	21.33	22.2	0.0	
20	256QAM	1	1	19.89	19.79	19.75	20.5	1.7	
Channel				371500	376000	380500	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1857.5	1880	1902.5			
15	PI2 BPSK	1	1	21.21	21.15	21.11	22.2	0.0	
Channel				371000	375500	381000	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1855	1880	1905			
10	PI2 BPSK	1	1	21.20	21.13	21.24	22.2	0.0	
Channel				370500	376000	381500	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1852.5	1880	1907.5			
5	PI2 BPSK	1	1	21.23	21.26	21.21	22.2	0.0	

n25_Ant 0									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				372000	376500	381000			
Frequency (MHz)				1860	1882.5	1905			
20	PI2 BPSK	1	1	21.41	21.30	21.32			
20	PI2 BPSK	1	53	21.34	21.26	21.27	22.2	0.0	
20	PI2 BPSK	1	104	21.34	21.27	21.19			
20	PI2 BPSK	50	0	21.35	21.30	21.27	22.2	0.0	
20	PI2 BPSK	50	28	21.37	21.33	21.34	22.2	0.0	
20	PI2 BPSK	50	56	21.32	21.32	21.30			
20	PI2 BPSK	100	0	21.36	21.31	21.28	22.2	0.0	
20	QPSK	1	1	21.33	21.21	21.24			
20	QPSK	1	53	21.28	21.21	21.17	22.2	0.0	
20	QPSK	1	104	21.26	21.20	21.16			
20	QPSK	50	0	21.36	21.29	21.32	22.2	0.0	
20	QPSK	50	28	21.37	21.30	21.28	22.2	0.0	
20	QPSK	50	56	21.31	21.30	21.22	22.2	0.0	
20	QPSK	100	0	21.34	21.30	21.23	22.2	0.0	
20	16QAM	1	1	21.39	21.31	21.33	22.2	0.0	
20	16QAM	1	1	21.36	21.32	21.35	22.2	0.0	
20	256QAM	1	1	20.01	19.89	19.88	20.5	1.7	
Channel				371500	376500	381500	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1857.5	1882.5	1907.5			
15	PI2 BPSK	1	1	21.17	21.15	21.02	22.2	0.0	
Channel				371000	376500	382000	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1855	1882.5	1910			
10	PI2 BPSK	1	1	21.11	21.23	21.23	22.2	0.0	
Channel				370500	376500	382500	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1852.5	1882.5	1912.5			
5	PI2 BPSK	1	1	21.21	21.27	21.13	22.2	0.0	

n66_Ant 0									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)	
Channel				344000	349000	354000			
Frequency (MHz)				1720	1745	1770			
20	PI2 BPSK	1	1	21.14	21.21	21.01			
20	PI2 BPSK	1	53	21.08	21.10	20.94	22.0	0.0	
20	PI2 BPSK	1	104	21.12	21.16	20.98			
20	PI2 BPSK	50	0	21.11	21.14	21.06	22.0	0.0	
20	PI2 BPSK	50	28	21.10	21.18	21.03	22.0	0.0	
20	PI2 BPSK	50	56	21.05	21.17	20.97			
20	PI2 BPSK	100	0	21.03	21.09	21.02	22.0	0.0	
20	QPSK	1	1	21.08	21.17	20.94			
20	QPSK	1	53	21.01	21.11	20.98	22.0	0.0	
20	QPSK	1	104	21.13	21.15	21.03			
20	QPSK	50	0	21.11	21.18	20.96	22.0	0.0	
20	QPSK	50	28	21.07	21.15	21.01	22.0	0.0	
20	QPSK	50	56	21.13	21.13	21.07	22.0	0.0	
20	QPSK	100	0	21.10	21.17	20.99	22.0	0.0	
20	16QAM	1	1	21.11	21.20	21.11	22.0	0.0	
20	16QAM	1	1	21.12	21.15	21.07	22.0	0.0	
20	256QAM	1	1	19.85	19.70	19.51	20.5	1.5	
Channel				343500	349000	354500	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1717.5	1745	1772.5			
15	PI2 BPSK	1	1	21.12	21.09	20.99	22.0	0.0	
Channel				343000	349000	355000	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1715	1745	1775			
10	PI2 BPSK	1	1	21.17	21.15	21.16	22.0	0.0	
Channel				342500	349000	355500	Tune-up limit (dBm)	MPR (dB)	
Frequency (MHz)				1712.5	1745	1772.5			
5	PI2 BPSK	1	1	21.20	21.18	21.10	22.0	0.0	



Full Power

BT BR/EDR

Mode	Channel	Frequency (MHz)	Average power (dBm)									Tune-up Limit
			Packet Type									
			DH1	DH3	DH5	2DH1	2DH3	2DH5	3DH1	3DH3	3DH5	
Bluetooth	CH 0	2402	16.60	16.30	16.10	12.30	12.00	11.90	12.30	12.00	11.90	18
	CH 39	2441	17.30	16.90	16.80	13.10	12.70	12.60	13.10	12.80	12.60	
	CH 78	2480	17.00	16.40	16.20	13.20	12.70	12.50	13.20	12.70	12.50	

BT LE

Mode	Channel	Frequency (MHz)	Average power (dBm)	
			GFSK	
LE	CH 00	2402	10.60	
	CH 19	2440	11.10	
	CH 39	2480	10.00	
Tune-up Limit			12	

BT LE 5.0

Mode	Channel	Frequency (MHz)	Average power (dBm)	
			1Mbps	2Mbps
LE	CH 00	2402	10.60	9.90
	CH 19	2440	11.10	10.50
	CH 39	2480	10.00	9.70
Tune-up Limit			12	12

Ant+

Mode	Channel	Frequency (MHz)	Average power (dBm)	
			GFSK	
Ant+	CH 02	2402	-4.60	
	CH 41	2441	-3.40	
	CH 80	2480	-2.00	
Tune-up Limit			0	

Reduced Power Level 1/2 for Head

BT BR/EDR

Mode	Channel	Frequency (MHz)	Average power (dBm)									Tune-up Limit
			Packet Type									
			DH1	DH3	DH5	2DH1	2DH3	2DH5	3DH1	3DH3	3DH5	
Bluetooth	CH 0	2402	9.10	8.60	9.00	6.40	6.30	6.20	6.40	6.30	6.20	11
	CH 39	2441	9.40	9.30	9.20	7.10	7.00	6.90	7.10	7.00	6.90	
	CH 78	2480	9.10	8.90	9.00	7.10	7.00	6.90	7.10	7.00	6.90	

Reduced Power Level 2 for Hotspot&Body-worn

BT BR/EDR

Mode	Channel	Frequency (MHz)	Average power (dBm)									Tune-up Limit
			Packet Type									
			DH1	DH3	DH5	2DH1	2DH3	2DH5	3DH1	3DH3	3DH5	
Bluetooth	CH 0	2402	14.90	14.60	14.50	9.80	9.70	9.60	9.90	9.80	9.70	16
	CH 39	2441	15.80	15.40	15.20	10.60	10.50	10.40	10.60	10.50	10.40	
	CH 78	2480	15.80	15.30	15.00	11.00	10.70	10.50	11.00	10.70	10.40	



Full Power

2.4GHz WLAN					Ant 1	
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
802.11b 1Mbps	1	2412	19.70	21.00	100.00	
	6	2437	20.60	22.00		
	11	2462	19.80	21.00		
802.11g 6Mbps	1	2412	18.90	20.00	98.28	
	6	2437	19.90	21.00		
	11	2462	18.10	19.00		
802.11n-HT20 MCS0	1	2412	18.00	19.00	98.16	
	6	2437	20.00	21.00		
	11	2462	18.30	19.00		
802.11n-HT40 MCS0	3	2422	16.00	17.00	94.91	
	6	2437	17.10	18.00		
	9	2452	15.80	17.00		
802.11ac-VHT20 MCS0	1	2412	17.90	19.00	97.80	
	6	2437	19.90	21.00		
	11	2462	18.10	19.00		
802.11ac-VHT40 MCS0	3	2422	15.80	17.00	94.93	
	6	2437	17.00	18.00		
	9	2452	15.70	17.00		

Reduced Power level 1 for Head

2.4GHz WLAN					Ant 1	
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
802.11b 1Mbps	1	2412	14.70	16.00	100.00	
	6	2437	15.60	17.00		
	11	2462	14.80	16.00		
802.11g 6Mbps	1	2412	13.90	15.00	98.28	
	6	2437	14.90	16.00		
	11	2462	13.00	14.00		
802.11n-HT20 MCS0	1	2412	12.90	14.00	98.16	
	6	2437	15.00	16.00		
	11	2462	13.10	14.00		
802.11n-HT40 MCS0	3	2422	10.90	12.00	94.91	
	6	2437	12.10	13.00		
	9	2452	10.80	12.00		
802.11ac-VHT20 MCS0	1	2412	12.80	14.00	97.80	
	6	2437	14.90	16.00		
	11	2462	13.00	14.00		
802.11ac-VHT40 MCS0	3	2422	10.80	12.00	94.93	
	6	2437	12.00	13.00		
	9	2452	10.70	12.00		

Reduced Power level 2 for Head

2.4GHz WLAN					Ant 1	
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
802.11b 1Mbps	1	2412	12.70	14.00	100.00	
	6	2437	13.60	15.00		
	11	2462	12.80	14.00		
802.11g 6Mbps	1	2412	11.90	13.00	98.28	
	6	2437	12.90	14.00		
	11	2462	11.00	12.00		
802.11n-HT20 MCS0	1	2412	10.90	12.00	98.16	
	6	2437	13.00	14.00		
	11	2462	11.10	12.00		
802.11n-HT40 MCS0	3	2422	8.90	10.00	94.91	
	6	2437	10.10	11.00		
	9	2452	8.80	10.00		
802.11ac-VHT20 MCS0	1	2412	10.80	12.00	97.80	
	6	2437	12.90	14.00		
	11	2462	11.00	12.00		
802.11ac-VHT40 MCS0	3	2422	8.80	10.00	94.93	
	6	2437	10.00	11.00		
	9	2452	8.70	10.00		

5.2GHz WLAN					Ant 1	
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
802.11a 6Mbps	36	5180	16.07	17.50	98.28	
	40	5200	16.13	17.50		
	44	5220	16.33	17.50		
	48	5240	16.24	17.50		
802.11n-HT20 MCS0	36	5180	15.79	17.50	99.30	
	40	5200	15.98	17.50		
	44	5220	16.13	17.50		
	48	5240	16.03	17.50		
802.11n-HT40 MCS0	38	5190	16.45	17.50	97.73	
	46	5230	16.88	17.50		
	36	5180	15.78	17.50		
	40	5200	15.90	17.50		
802.11ac-VHT20 MCS0	44	5220	16.11	17.50	98.88	
	48	5240	16.02	17.50		
	38	5190	16.44	17.50		
	46	5230	16.86	17.50		
802.11ac-VHT80 MCS0	42	5210	16.86	17.30	95.29	

5.2GHz WLAN					Ant 1	
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
802.11a 6Mbps	36	5180	15.03	16.50	98.28	
	40	5200	14.98	16.50		
	44	5220	15.41	16.50		
	48	5240	15.16	16.50		
802.11n-HT20 MCS0	36	5180	14.84	16.50	99.30	
	40	5200	14.80	16.50		
	44	5220	15.24	16.50		
	48	5240	14.96	16.50		
802.11n-HT40 MCS0	38	5190	15.34	16.50	97.73	
	46	5230	15.48	16.50		
	36	5180	14.80	16.50		
	40	5200	14.79	16.50		
802.11ac-VHT20 MCS0	44	5220	15.21	16.50	98.88	
	48	5240	14.94	16.50		
	38	5190	15.33	16.50		
	46	5230	15.40	16.50		
802.11ac-VHT80 MCS0	42	5210	15.83	16.30	95.29	

5.3GHz WLAN					Ant 1	
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
802.11a 6Mbps	52	5290	16.25	17.50	98.28	
	56	5280	16.26	17.50		
	60	5300	16.38	17.50		
	64	5320	16.23	17.50		
802.11n-HT20 MCS0	52	5290	15.93	17.50	99.30	
	56	5280	16.00	17.50		
	60	5300	16.10	17.50		
	64	5320	16.05	17.50		
802.11n-HT40 MCS0	54	5270	16.46	17.50	97.73	
	62	5310	15.80	17.50		
	52	5290	15.91	17.50		
	56	5280	15.99	17.50		
802.11ac-VHT20 MCS0	60	5300	16.03	17.50	98.88	
	64	5320	16.00	17.50		
	54	5270	16.43	17.50		
	62	5310	15.76	17.50		
802.11ac-VHT80 MCS0	58	5290	14.15	15.00	95.29	

5.3GHz WLAN					Ant 1	
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
802.11a 6Mbps	52	5290	15.22	16.50	98.28	
	56	5280	15.26	16.50		
	60	5300	15.31	16.50		
	64	5320	15.38	16.50		
802.11n-HT20 MCS0	52	5290	14.97	16.50	99.30	
	56	5280	15.10	16.50		
	60	5300	15.13	16.50		
	64	5320	15.18	16.50		
802.11n-HT40 MCS0	54	5270	15.48	16.50	97.73	
	62	5310	14.63	16.50		
	52	5290	14.96	16.50		
	56	5280	15.08	16.50		
802.11ac-VHT20 MCS0	60	5300	15.10	16.50	98.88	
	64	5320	15.16	16.50		
	54	5270	15.41	16.50		
	62	5310	14.62	16.50		
802.11ac-VHT80 MCS0	58	5290	12.93	14.00	95.29	

5.5GHz WLAN					Ant 1	
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
802.11a 6Mbps	100	5500	13.70	15.00	98.28	
	116	5580	13.40	15.00		
	124	5620	13.35	15.00		
	132	5660	13.30	15.00		
	140	5700	13.20	15.00		
	144	5720	13.18	15.00		
802.11n-HT20 MCS0	100	5500	13.45	14.80	99.30	
	116	5580	13.19	14.80		
	124	5620	13.17	14.80		
	132	5660	13.05	14.80		
	140	5700	12.93	14.80		
	144	5720	12.85	14.80		
802.11n-HT40 MCS0	102	5510	14.05	15.50	97.73	
	110	5550	14.23	15.50		
	126	5630	13.65	15.50		
	134	5670	13.72	15.50		
	142	5710	13.52	15.50		
	100	5500	13.44	14.80		
802.11ac-VHT20 MCS0	116	5580	13.17	14.80	98.88	
	124	5620	13.15	14.80		
	132	5660	13.00	14.80		
	140	5700	12.92	14.80		
	144	5720	12.83	14.80		
	102	5510	14.00	15.00		
802.11ac-VHT40 MCS0	110	5550	14.11	15.00	97.73	
	126	5630	13.64	15.00		
	134	5670	13.70	15.00		
	142	5710	13.50	15.00		
	106	5530	14.19	15.30		
	122	5610	14.21	15.30		
802.11ac-VHT80 MCS0	138	5690	13.97	15.30	95.29	

5.8GHz WLAN					Ant 1	
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
802.11a 6Mbps	149	5745	13.33	15.00	98.28	
	157	5785	13.34	15.00		
	165	5825	13.53	15.00		
	149	5745	13.16	15.00		
802.11n-HT20 MCS0	157	5785	13.11	15.00	99.30	
	165	5825	13.31	15.00		
	151	5755	13.56	15.50		
	159	5795	13.89	15.50		
802.11n-HT40 MCS0	149	5745	13.15	14.90	98.88	
	157	5785	13.09	14.90		
	165	5825	13.33	14.90		
	151	5755	13.50	15.50		
802.11ac-VHT20 MCS0	159	5795	13.56	15.50	97.73	
	155	5775	13.95	15.30		
	149	5745	13.15	14.90		
	157	5785	13.09	14.90		
802.11ac-VHT80 MCS0	155	5775	13.95	15.30	95.29	

5.8GHz WLAN					Ant 1	
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
802.11a 6Mbps	149	5745	15.27	17.00	98.28	
	157	5785	15.28	17.00		
	165	5825	15.33	17.00		
802.11n-HT20 MCS0	149	5745	15.00	17.00	99.30	
	157	5785	15.06	17.00		
	165	5825	15.13	17.00		
802.11n-HT40 MCS0	151	5755	15.56	17.50	97.73	
	159	5795	15.89	17.50		
	149	5745	14.95	16.90		
802.11ac-VHT20 MCS0	157	5785	15.03	16.90	98.88	
	165	5825	15.10	16.90		
	151	5755	15.55	17.50		
802.11ac-VHT40 MCS0	159	5795	15.77	17.50	97.73	
	155	5775	15.87	17.30		



Reduced Power level 1 for Hotspot

5.8GHz WLAN				Art 1		
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
5.8GHz WLAN	802.11a 6Mbps	149	5745	13.33	15.00	98.28
		157	5785	13.34	15.00	
		165	5825	13.53	15.00	
	802.11n-HT20 MCS0	149	5745	13.16	15.00	99.30
		157	5785	13.11	15.00	
		165	5825	13.31	15.00	
	802.11n-HT40 MCS0	151	5755	13.85	15.50	97.73
		159	5795	13.95	15.50	
	802.11ac- VHT20 MCS0	149	5745	13.15	14.90	98.88
		157	5785	13.09	14.90	
		165	5825	13.33	14.90	
	802.11ac- VHT40 MCS0	151	5755	13.50	15.50	97.73
159		5795	13.56	15.50		
802.11ac- VHT80 MCS0	155	5775	13.95	15.30	95.29	



Reduced Power level 2 for Hotspot

2.4GHz WLAN				Ant 1		
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
802.11b 1Mbps	1	2412	14.70	16.00	100.00	
	6	2437	15.60	17.00		
	11	2462	14.80	16.00		
802.11g 6Mbps	1	2412	13.90	15.00	98.28	
	6	2437	14.90	16.00		
	11	2462	13.00	14.00		
802.11n-HT20 MCS0	1	2412	12.90	14.00	98.16	
	6	2437	15.00	16.00		
	11	2462	13.10	14.00		
802.11n-HT40 MCS0	3	2422	10.90	12.00	94.91	
	6	2437	12.10	13.00		
	9	2452	10.80	12.00		
802.11ac-VHT20 MCS0	1	2412	12.80	14.00	97.80	
	6	2437	14.90	16.00		
	11	2462	13.00	14.00		
802.11ac-VHT40 MCS0	3	2422	10.80	12.00	94.93	
	6	2437	12.00	13.00		
	9	2452	10.70	12.00		

5.2GHz WLAN				Ant 1		
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
802.11a 6Mbps	36	5180	13.03	14.50	98.28	
	40	5200	12.98	14.50		
	44	5220	13.41	14.50		
	48	5240	13.16	14.50		
802.11n-HT20 MCS0	36	5180	12.84	14.50	99.30	
	40	5200	12.80	14.50		
	44	5220	13.24	14.50		
	48	5240	12.96	14.50		
802.11n-HT40 MCS0	38	5190	13.34	14.50	97.73	
	46	5230	13.88	14.50		
	36	5180	12.80	14.50		
802.11ac-VHT20 MCS0	40	5200	12.79	14.50	98.88	
	44	5220	13.21	14.50		
	48	5240	12.94	14.50		
802.11ac-VHT40 MCS0	38	5190	13.33	14.50	97.73	
	46	5230	13.40	14.50		
802.11ac-VHT20 MCS0	42	5210	13.83	14.30	95.29	

5.8GHz WLAN				Ant 1		
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
802.11a 6Mbps	149	5745	10.33	12.00	98.28	
	157	5785	10.34	12.00		
	165	5825	10.53	12.00		
802.11n-HT20 MCS0	149	5745	10.16	12.00	99.30	
	157	5785	10.11	12.00		
	165	5825	10.31	12.00		
802.11n-HT40 MCS0	151	5755	10.52	12.50	97.73	
	159	5795	10.57	12.50		
802.11ac-VHT20 MCS0	149	5745	10.15	11.90	98.88	
	157	5785	10.09	11.90		
	165	5825	10.33	11.90		
802.11ac-VHT40 MCS0	151	5755	10.50	12.50	97.73	
	159	5795	10.56	12.50		
802.11ac-VHT20 MCS0	155	5775	10.95	12.30	95.29	



Reduced Power level 2 for Body-worn&Handheld on

2.4GHz WLAN						Ant 1
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
802.11b 1Mbps	1	2412	17.60	19.00	100.00	
	6	2437	18.60	20.00		
	11	2462	17.70	19.00		
802.11g 6Mbps	1	2412	16.90	18.00	98.28	
	6	2437	17.90	19.00		
	11	2462	16.00	17.00		
802.11n-HT20 MCS0	1	2412	15.90	17.00	98.16	
	6	2437	18.00	19.00		
	11	2462	16.10	17.00		
802.11n-HT40 MCS0	3	2422	13.90	15.00	94.91	
	6	2437	15.10	16.00		
	9	2452	13.80	15.00		
802.11ac-VHT20 MCS0	1	2412	15.80	17.00	97.80	
	6	2437	17.90	19.00		
	11	2462	16.00	17.00		
802.11ac-VHT40 MCS0	3	2422	13.80	15.00	94.93	
	6	2437	15.00	16.00		
	9	2452	13.70	15.00		

5.2GHz WLAN						Ant 1
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
802.11a 6Mbps	36	5180	10.03	11.50	98.28	
	40	5200	9.98	11.50		
	44	5220	10.41	11.50		
	48	5240	10.16	11.50		
802.11n-HT20 MCS0	36	5180	9.84	11.50	99.30	
	40	5200	9.80	11.50		
	44	5220	10.24	11.50		
	48	5240	9.96	11.50		
802.11n-HT40 MCS0	38	5190	10.34	11.50	97.73	
	46	5230	10.48	11.50		
802.11ac-VHT20 MCS0	36	5180	9.80	11.50	98.88	
	40	5200	9.79	11.50		
	44	5220	10.21	11.50		
	48	5240	9.94	11.50		
802.11ac-VHT40 MCS0	38	5190	10.33	11.50	97.73	
	46	5230	10.40	11.50		
802.11ac-VHT80 MCS0	42	5210	10.83	11.30	95.29	

5.3GHz WLAN						Ant 1
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
802.11a 6Mbps	52	5290	10.22	11.50	98.28	
	56	5380	10.28	11.50		
	60	5300	10.31	11.50		
	64	5320	10.38	11.50		
802.11n-HT20 MCS0	52	5290	9.97	11.50	99.30	
	56	5290	10.10	11.50		
	60	5300	10.13	11.50		
	64	5320	10.18	11.50		
802.11n-HT40 MCS0	54	5270	10.53	11.50	97.73	
	62	5310	9.63	11.50		
802.11ac-VHT20 MCS0	52	5290	9.96	11.50	98.88	
	56	5290	10.08	11.50		
	60	5300	10.10	11.50		
	64	5320	10.16	11.50		
802.11ac-VHT40 MCS0	54	5270	10.41	11.50	97.73	
	62	5310	9.62	11.50		
802.11ac-VHT80 MCS0	58	5290	7.93	9.00	95.29	

5.5GHz WLAN						Ant 1
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
802.11a 6Mbps	100	5500	7.94	9.00	98.28	
	116	5580	7.66	9.00		
	124	5620	7.50	9.00		
	132	5660	7.38	9.00		
	140	5700	7.36	9.00		
	144	5720	7.33	9.00		
802.11n-HT20 MCS0	100	5500	7.75	8.80	99.30	
	116	5580	7.48	8.80		
	124	5620	7.40	8.80		
	132	5660	7.32	8.80		
	140	5700	7.15	8.80		
	144	5720	7.10	8.80		
802.11n-HT40 MCS0	102	5510	8.23	9.50	97.73	
	110	5550	8.24	9.50		
	126	5630	7.80	9.50		
	134	5670	7.64	9.50		
	142	5710	7.55	9.50		
	100	5500	7.73	8.80		98.88
116	5580	7.47	8.80			
124	5620	7.38	8.80			
132	5660	7.25	8.80			
140	5700	7.13	8.80			
144	5720	7.07	8.80			
802.11ac-VHT20 MCS0	102	5510	8.20	9.00	97.73	
	110	5550	7.94	9.00		
	126	5630	7.78	9.00		
	134	5670	7.61	9.00		
	142	5710	7.52	9.00		
	106	5530	8.44	9.30		95.29
122	5610	8.14	9.30			
138	5690	8.03	9.30			

5.8GHz WLAN						Ant 1
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
802.11a 6Mbps	149	5745	9.33	11.00	98.28	
	157	5785	9.34	11.00		
	165	5825	9.53	11.00		
802.11n-HT20 MCS0	149	5745	9.16	11.00	99.30	
	157	5785	9.11	11.00		
	165	5825	9.31	11.00		
802.11n-HT40 MCS0	151	5755	9.52	11.50	97.73	
	159	5795	9.57	11.50		
802.11ac-VHT20 MCS0	149	5745	9.15	10.90	98.88	
	157	5785	9.09	10.90		
	165	5825	9.33	10.90		
802.11ac-VHT40 MCS0	151	5755	9.50	11.50	97.73	
	159	5795	9.56	11.50		
802.11ac-VHT80 MCS0	155	5775	9.95	11.30	95.29	