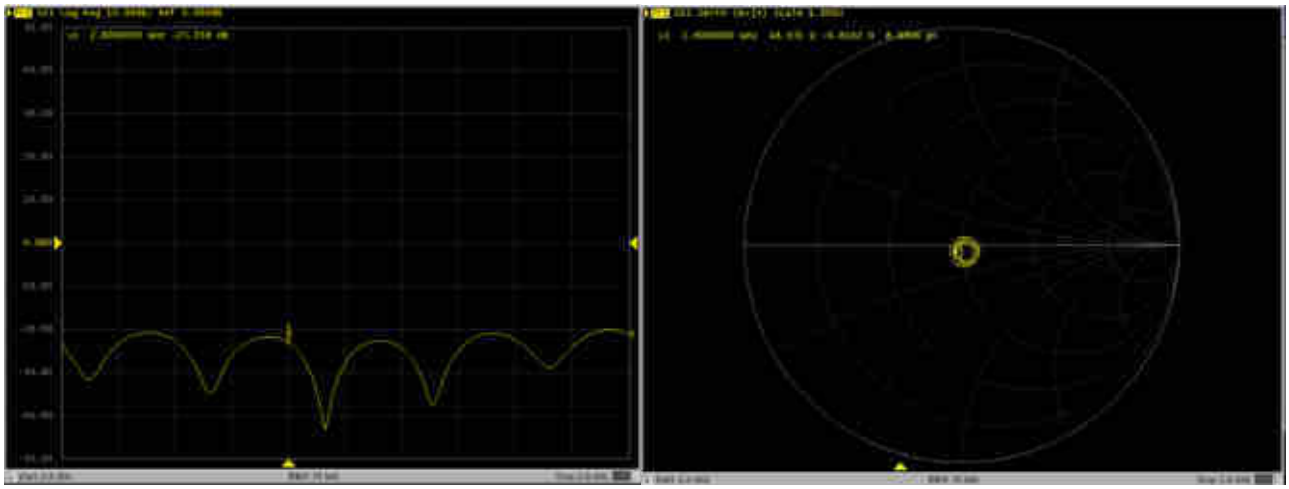
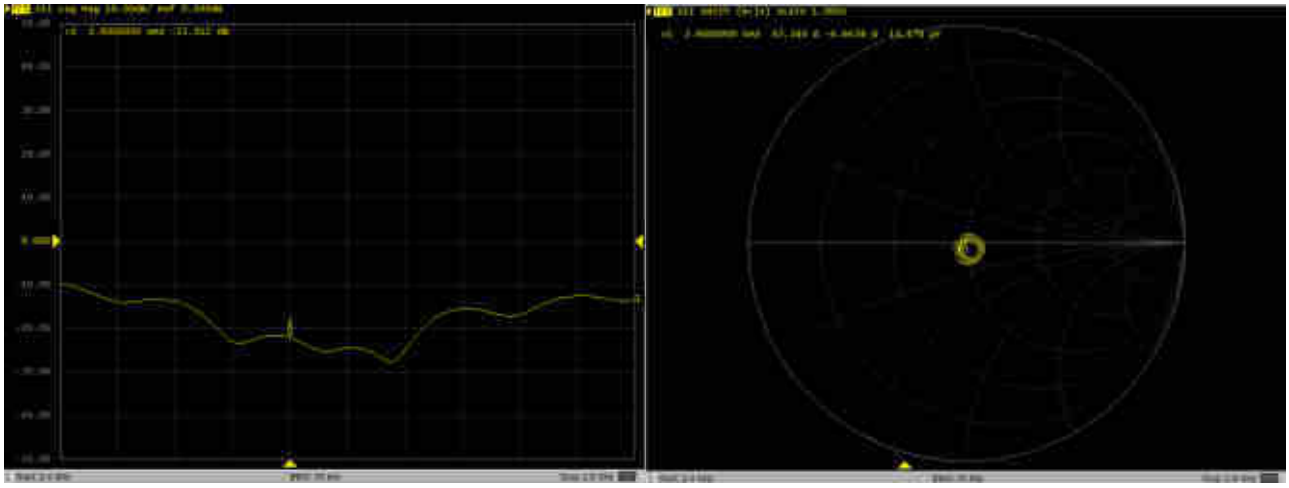
Dipole Verification Data> D2600V2, serial no. 1070

2600MHz - Head



2600MHz – Body



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CNAS L0570

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)℃ 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

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Glossary:

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

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013

b) IEC 62209-1, "Measurement procedure for assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices- Part 1: Device used next to the ear (Frequency range of 300MHz to 6GHz)", July 2016

c) IEC 62209-2, "Procedure to measure the Specific Absorption Rate (SAR) For wireless communication devices used in close proximity to the human body (frequency range of 30MHz to 6GHz)", March 2010

d) KDB865664, SAR Measurement Requirements for 100 MHz to 6 GHz

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

DASY Version	DASY52	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)**

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Head TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.5	5.07 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	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)**

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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 cm^3 (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 cm^3 (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 cm^3 (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 cm^3 (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)**

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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 cm^3 (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 cm^3 (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)**

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Appendix (Additional assessments outside the scope of CNAS L0570)

Antenna Parameters with Head TSL at 5250 MHz

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

Antenna Parameters with Head TSL at 5600 MHz

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

Antenna Parameters with Head TSL at 5750 MHz

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

Antenna Parameters with Body TSL at 5250 MHz

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

Antenna Parameters with Body TSL at 5600 MHz

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

Antenna Parameters with Body TSL at 5750 MHz

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

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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

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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; σ = 4.822 S/m; εr = 35.92; ρ = 1000 kg/m3, Medium parameters used: f = 5600 MHz; σ = 5.184 S/m; εr = 35.14; ρ = 1000 kg/m3, Medium parameters used: f = 5750 MHz; σ = 5.365 S/m; εr = 34.88; ρ = 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

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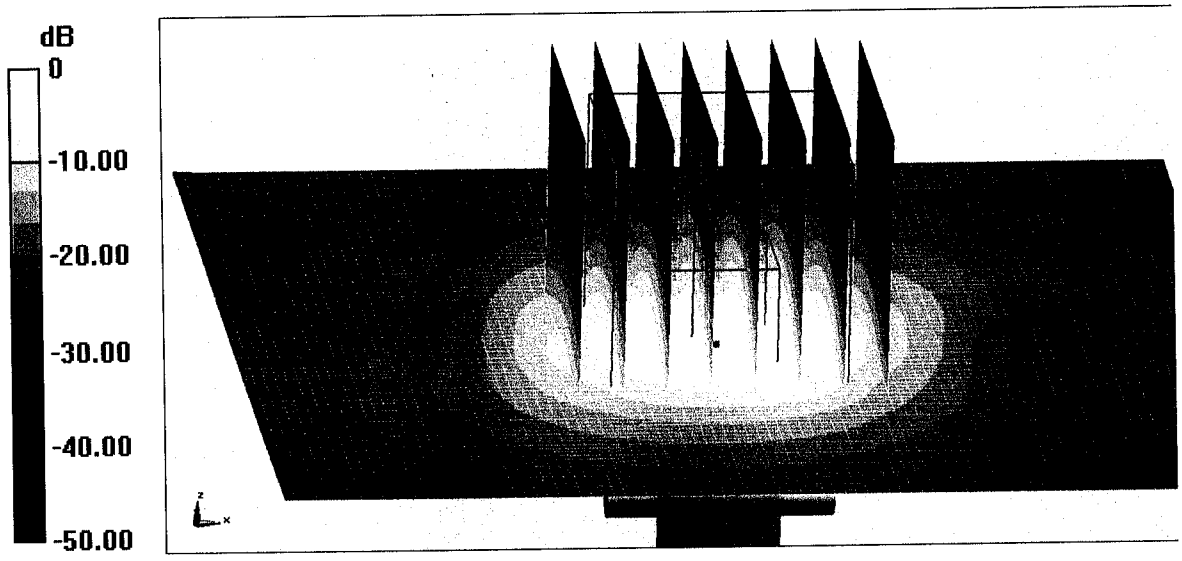

0 dB = 19.0 W/kg = 12.79 dBW/kg

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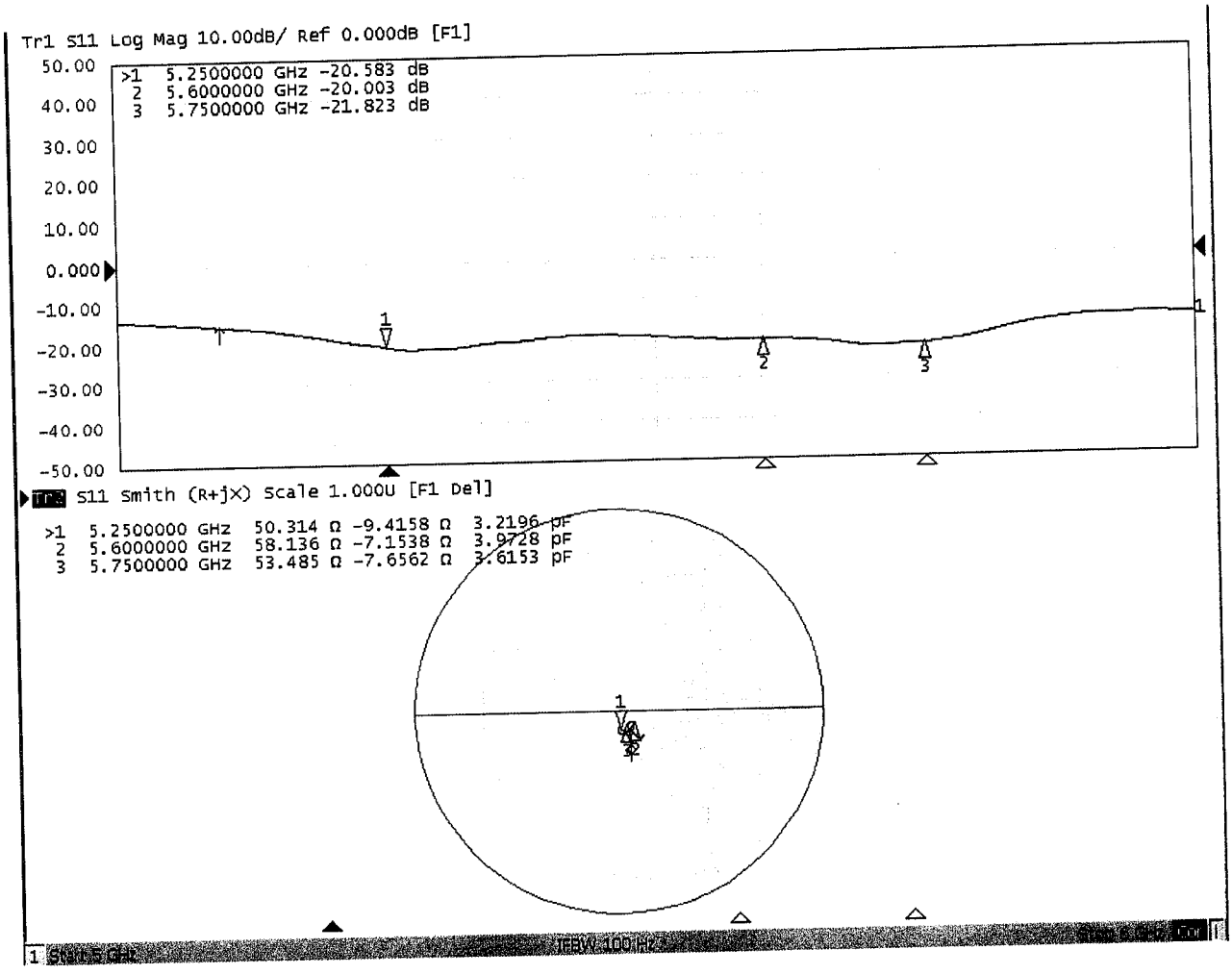
Impedance Measurement Plot for Head TSL



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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; σ = 5.316 S/m; εr = 48.42; ρ = 1000 kg/m3, Medium parameters used: f = 5600 MHz; σ = 5.789 S/m; εr = 47.7; ρ = 1000 kg/m3, Medium parameters used: f = 5750 MHz; σ = 5.926 S/m; εr = 48.45; ρ = 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

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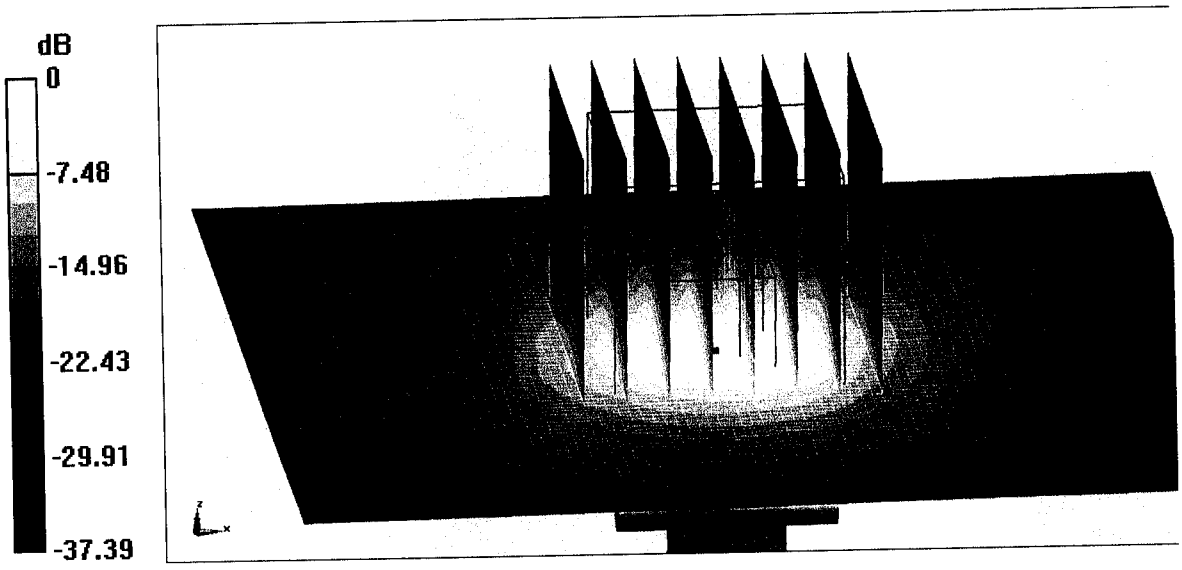

0 dB = 18.0 W/kg = 12.55 dBW/kg

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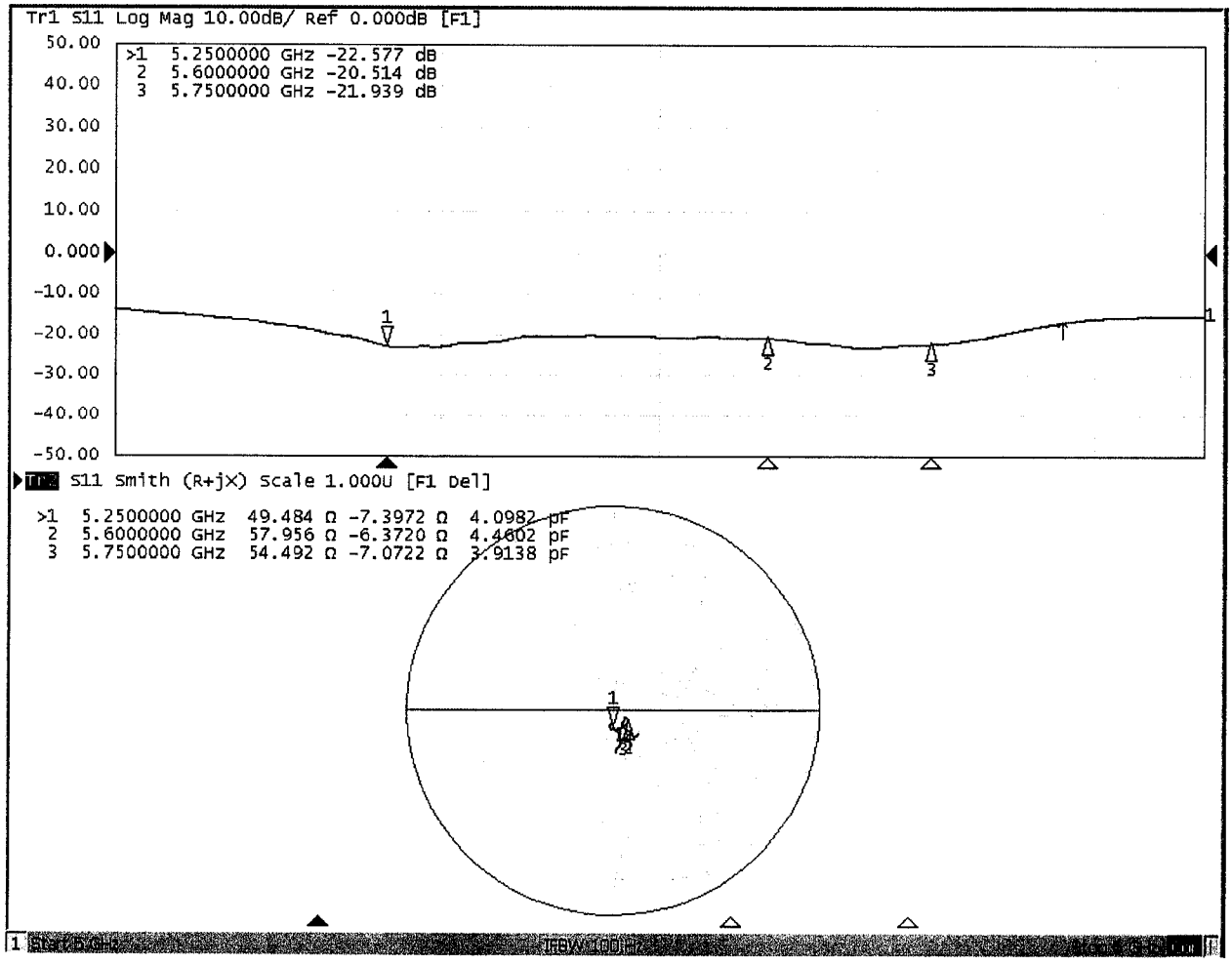
Impedance Measurement Plot for Body TSL



D5GHzV3, Serial No. 1167 Extended Dipole Calibrations

Referring to KDB 865664 D01 v01r02, if dipoles are verified in return loss (<-20dB, within 20% of prior calibration), and in impedance (within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

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

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

5750MHz

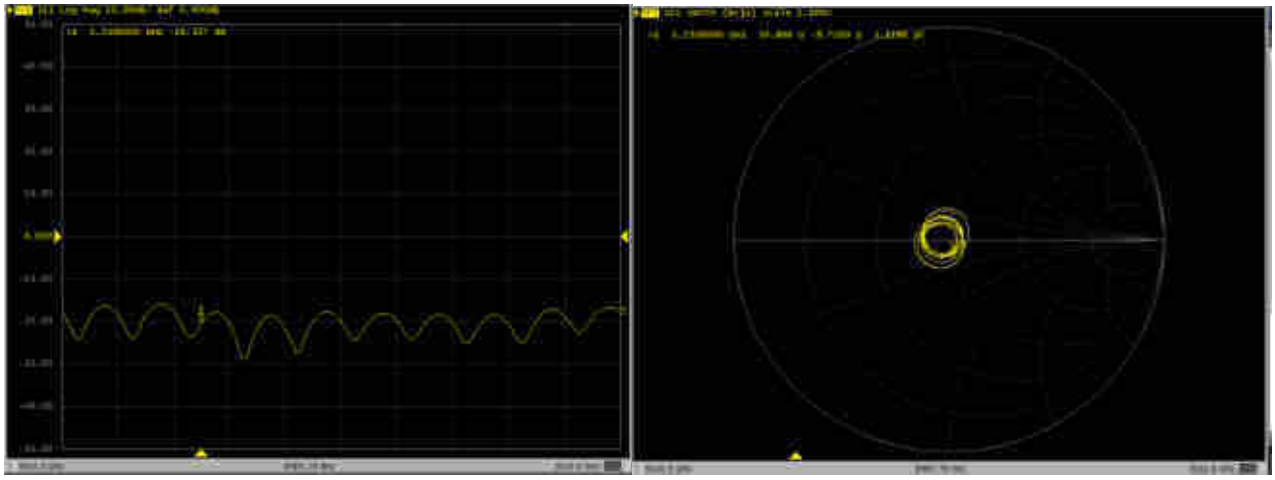
D5GHzV3 – serial no. 1167												
	5750 Head						5750 Body					
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2018.08.03	-21.8		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

<Justification of the extended calibration>

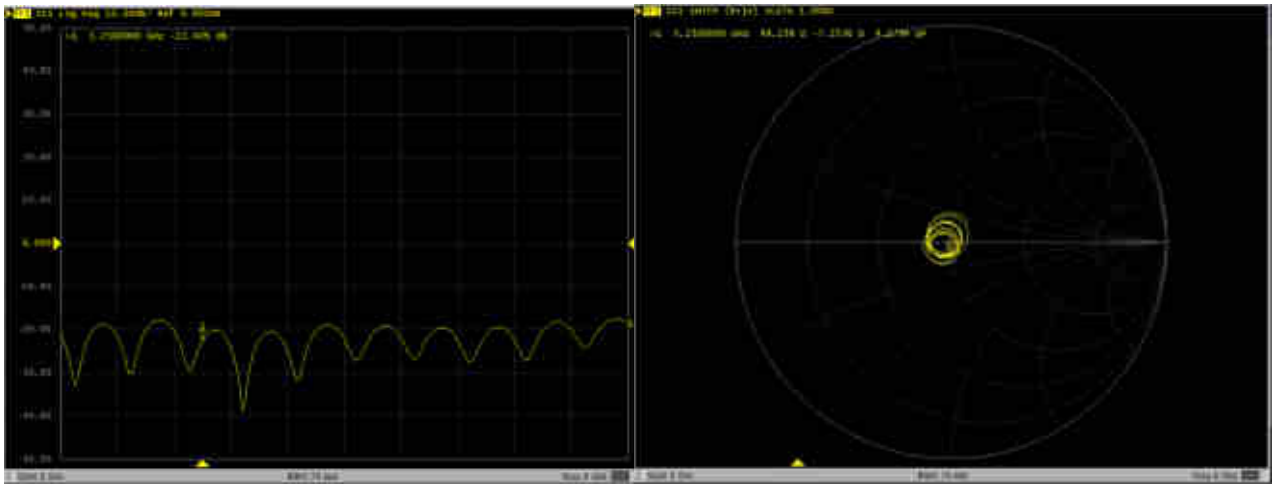
The return loss is < -20dB, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

Dipole Verification Data> D5GHzV3, serial no. 1167

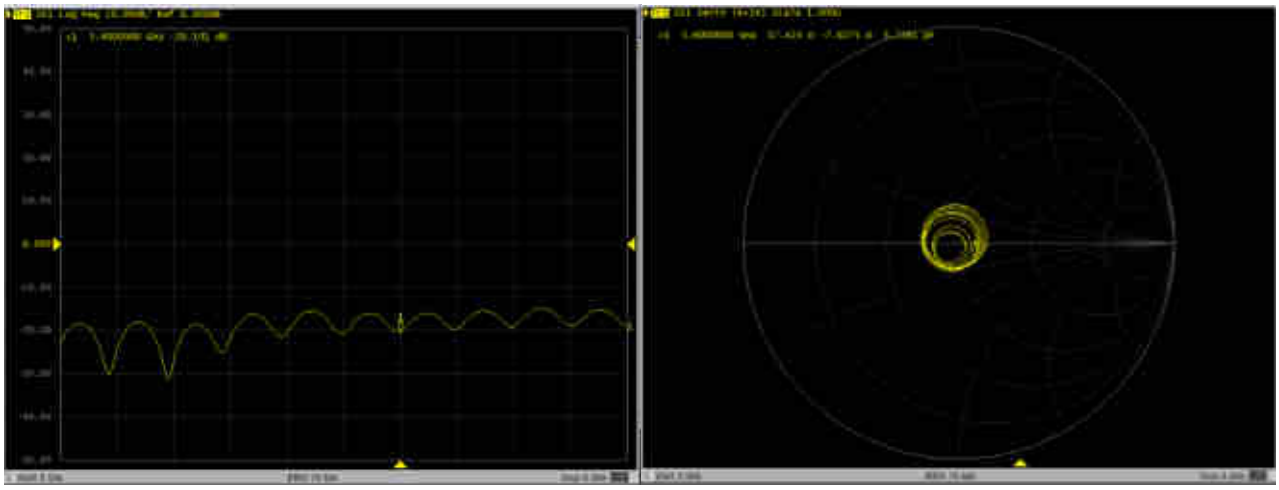
5250MHz - Head



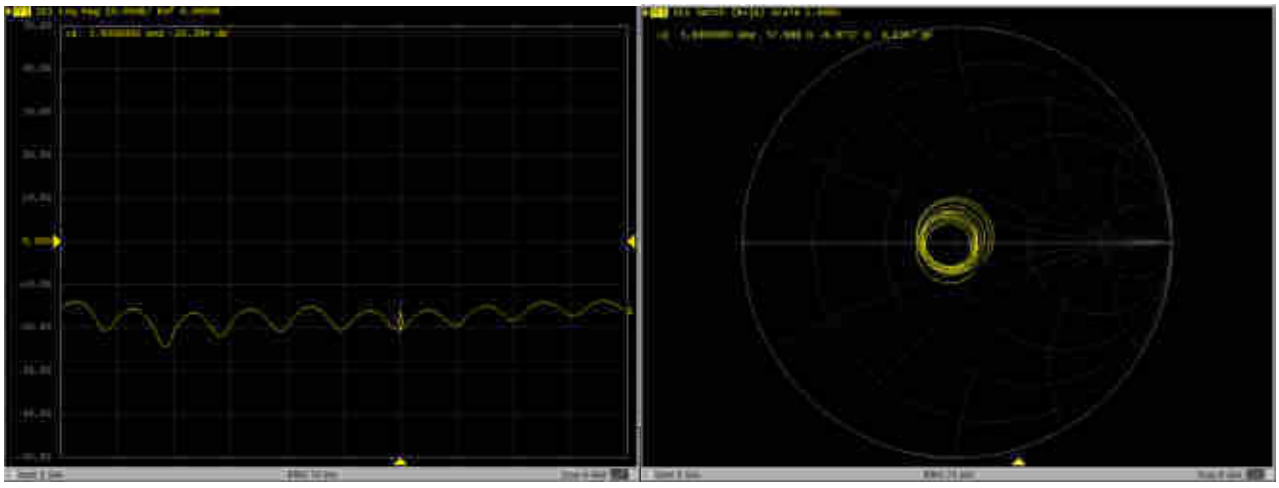
5250MHz – Body



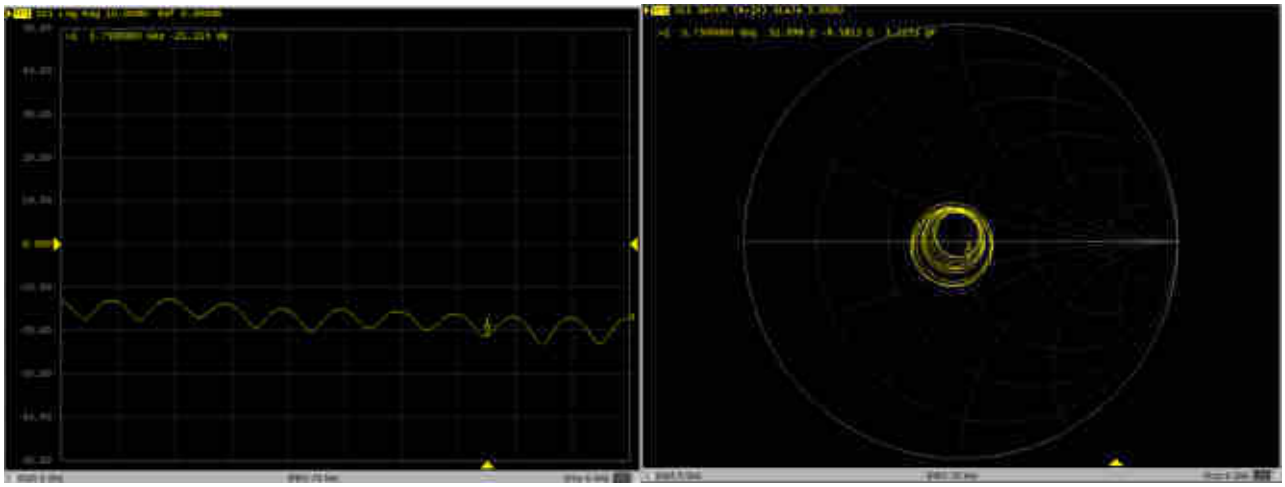
5600MHz – Head



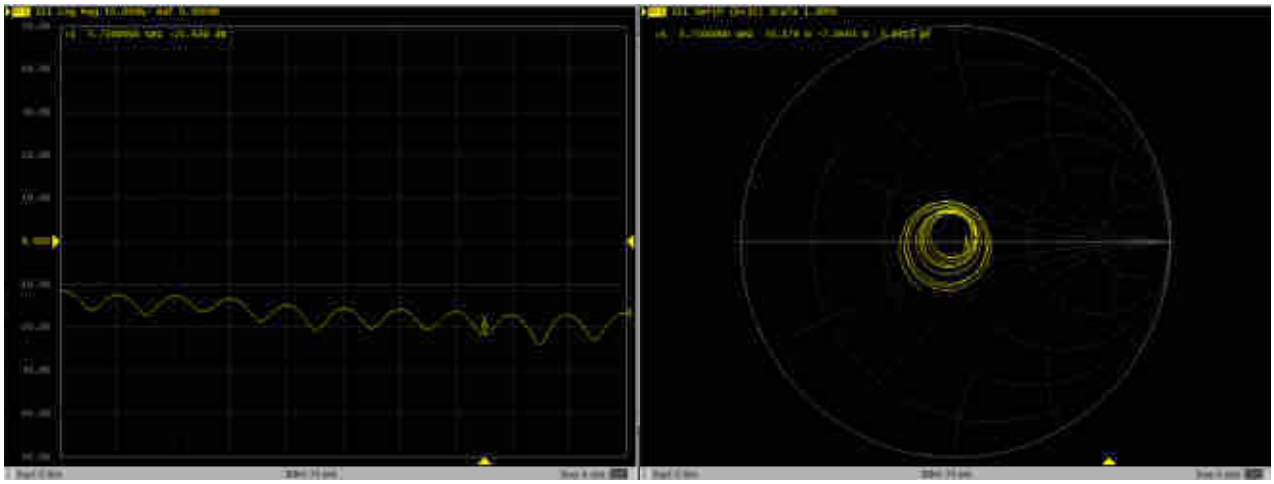
5600MHz – Body



5750MHz – Head



5750MHz – Body



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Client : **Sporton** **Certificate No: Z19-60436**

CALIBRATION CERTIFICATE

Object	DAE4 - SN: 1437
Calibration Procedure(s)	FF-Z11-002-01 Calibration Procedure for the Data Acquisition Electronics (DAEx)
Calibration date:	November 19, 2019

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)℃ and humidity<70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Process Calibrator 753	1971018	24-Jun-19 (CTTL, No.J19X05126)	Jun-20

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

Issued: November 21, 2019

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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 report provide only calibration results for DAE, it does not contain other performance test results.

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DC Voltage Measurement

A/D - Converter Resolution nominal

High Range: 1LSB = 6.1μV , 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	404.110 ± 0.15% (k=2)	403.634 ± 0.15% (k=2)	404.056 ± 0.15% (k=2)
Low Range	3.95185 ± 0.7% (k=2)	3.93955 ± 0.7% (k=2)	3.90561 ± 0.7% (k=2)

Connector Angle

Connector Angle to be used in DASY system	65° ± 1 °

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Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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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 ± 3)°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

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 =	6.1µV ,	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 ± 0.02% (k=2)	404.615 ± 0.02% (k=2)	404.537 ± 0.02% (k=2)
Low Range	3.97109 ± 1.50% (k=2)	3.95930 ± 1.50% (k=2)	3.96568 ± 1.50% (k=2)

Connector Angle

Connector Angle to be used in DASY system	50.0 ° ± 1 °

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 10MΩ

	Average (μV)	min. Offset (μV)	max. Offset (μV)	Std. Deviation (μV)
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

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Engineering AG
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C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

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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 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	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: MY41498087	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

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

Issued: April 30, 2020

Glossary:

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

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, ", "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
c) 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
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z*: Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z*: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- *PAR*: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- *Ax,y,z; Bx,y,z; Cx,y,z; Dx,y,z; VRx,y,z*: *A, B, C, D* are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.
- *ConvF and Boundary Effect Parameters*: Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- *Connector Angle*: The angle is assessed using the information gained by determining the *NORMx* (no uncertainty required).

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

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[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√μV	C	D dB	VR mV	Max dev.	Unc[E] (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 E^2-field uncertainty inside TSL (see Page 5).
[B] Numerical linearization parameter: uncertainty not required.
[E] Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: EX3DV4 - SN: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 [G] (mm)	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 %

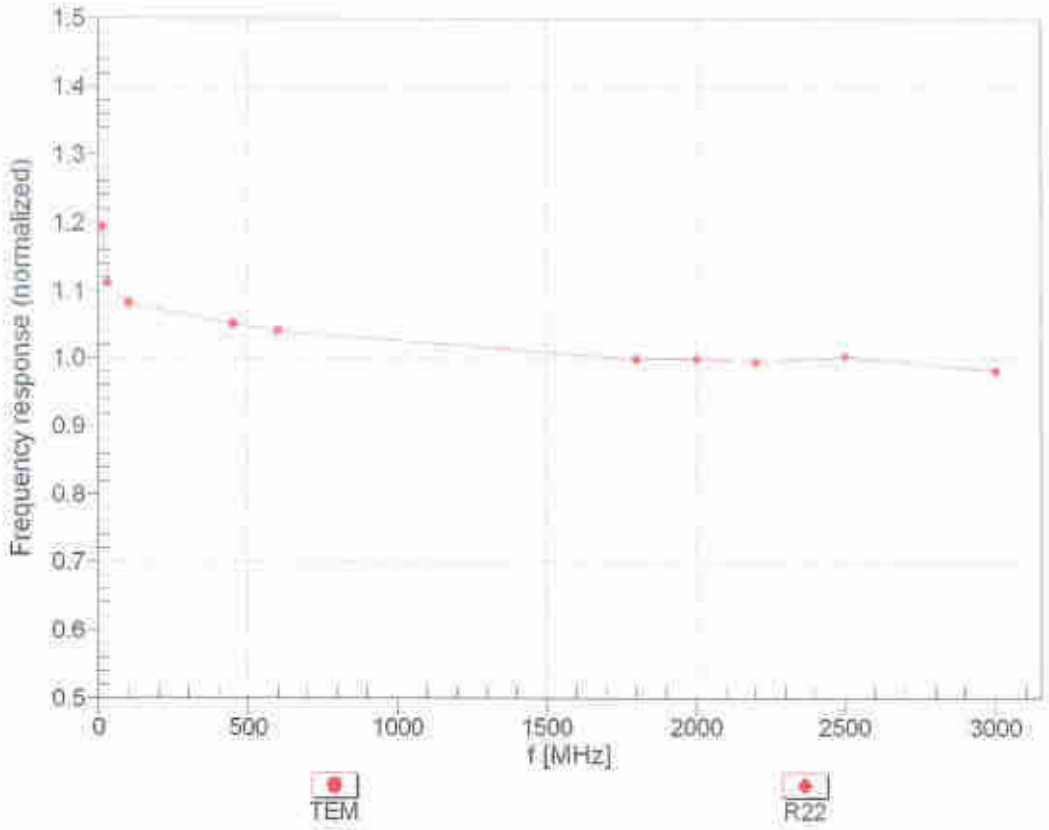
[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz 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)

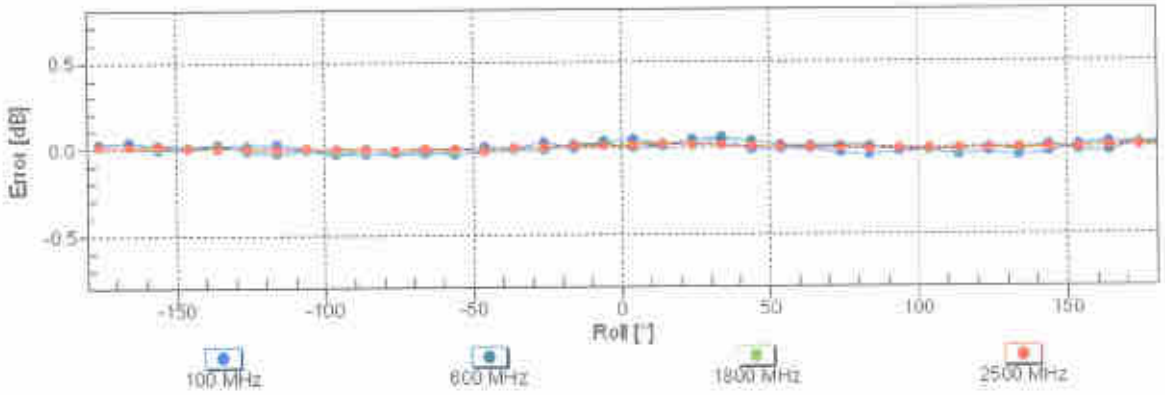


Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

Receiving Pattern (ϕ), ϑ = 0°

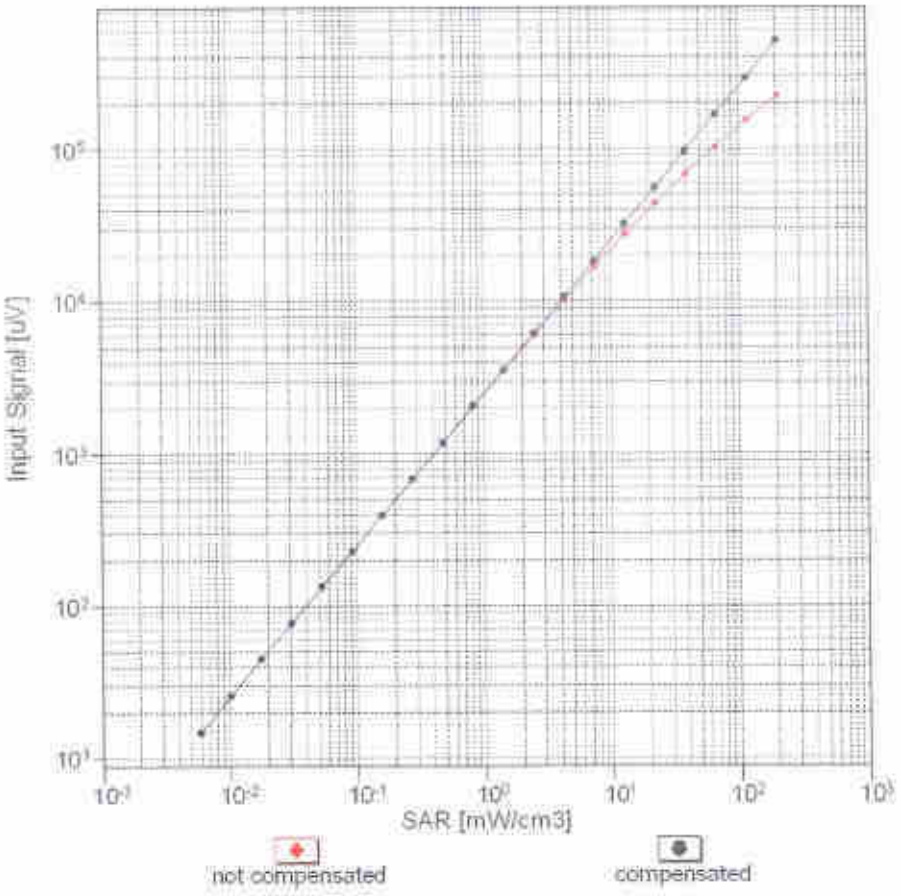
f=600 MHz,TEM

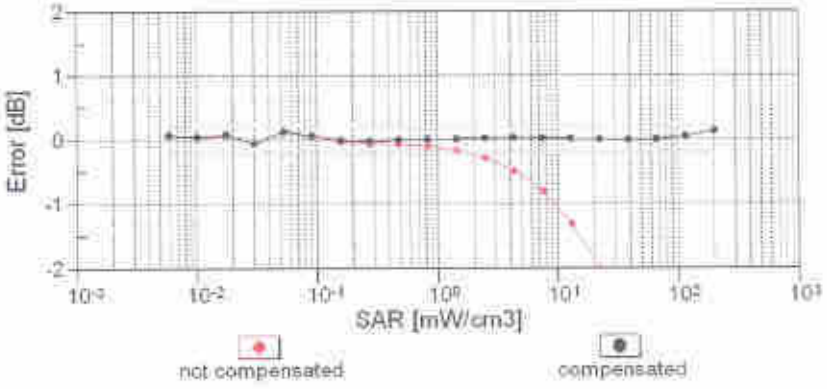
f=1800 MHz,R22



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

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

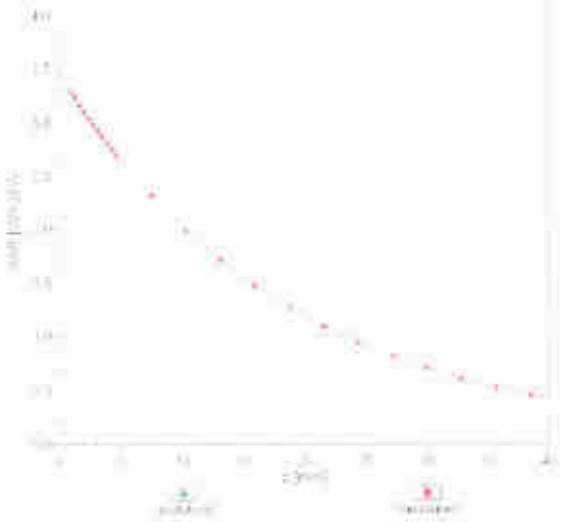




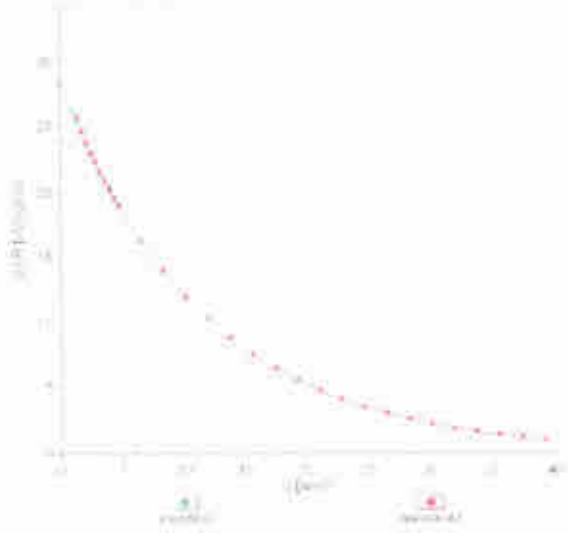
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment

f = 835 MHz,WGLS R9 (H_convF)

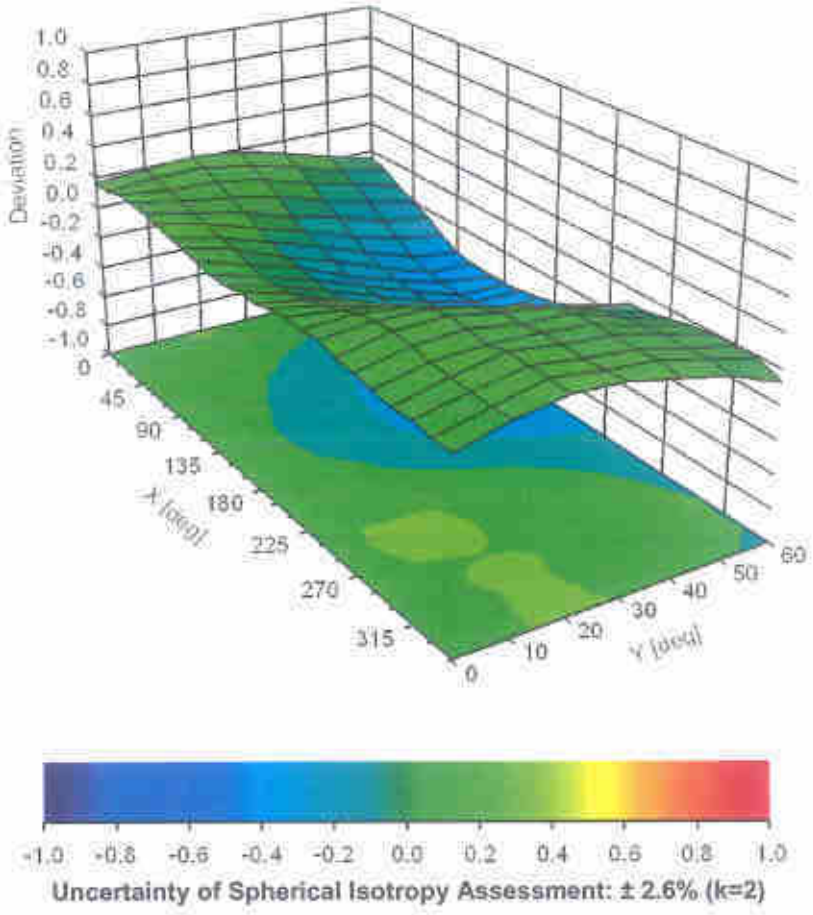


f = 1900 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz



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

Appendix E. Conducted RF Output Power Table

The detailed power tables are shown as follows.

WWAN Bottom Antenna--Receiver on

GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GSM 1 Tx slot	32.51	32.86	32.87	34.00	23.51	23.86	23.87	25.00
GPRS 1 Tx slot	32.49	32.79	32.86	34.00	23.49	23.79	23.86	25.00
GPRS 2 Tx slots	30.90	30.93	30.91	32.00	24.90	24.93	24.91	26.00
GPRS 3 Tx slots	28.44	28.66	28.85	30.00	24.18	24.40	24.59	25.74
GPRS 4 Tx slots	27.94	28.10	28.08	29.00	24.94	25.10	25.08	26.00
EDGE(GMSK 1 Tx slot)	32.41	32.74	32.82	34.00	23.41	23.74	23.82	25.00
EDGE(GMSK 2 Tx slots)	30.88	30.90	30.88	32.00	24.88	24.90	24.88	26.00
EDGE(GMSK 3 Tx slots)	28.39	28.61	28.82	30.00	24.13	24.35	24.56	25.74
EDGE(GMSK 4 Tx slots)	27.91	28.08	28.01	29.00	24.91	25.08	25.01	26.00
EDGE(8PSK 1 Tx slot)	25.53	25.67	25.61	27.00	16.53	16.67	16.61	18.00
EDGE(8PSK 2 Tx slots)	24.42	24.19	24.34	25.50	18.42	18.19	18.34	19.50
EDGE(8PSK 3 Tx slots)	23.41	22.92	23.20	24.50	19.15	18.66	18.94	20.24
EDGE(8PSK 4 Tx slots)	22.64	22.31	22.47	23.50	19.64	19.31	19.47	20.50

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM 1 Tx slot	29.62	29.46	28.96	30.50	20.62	20.46	19.96	21.50
GPRS 1 Tx slot	29.61	29.45	28.94	30.50	20.61	20.45	19.94	21.50
GPRS 2 Tx slots	27.01	26.95	26.36	28.00	21.01	20.95	20.36	22.00
GPRS 3 Tx slots	26.17	26.08	25.51	27.00	21.91	21.82	21.25	22.74
GPRS 4 Tx slots	24.97	24.92	24.33	26.00	21.97	21.92	21.33	23.00
EDGE(GMSK 1 Tx slot)	29.56	29.41	28.92	30.50	20.56	20.41	19.92	21.50
EDGE(GMSK 2 Tx slots)	27.00	26.92	26.31	28.00	21.00	20.92	20.31	22.00
EDGE(GMSK 3 Tx slots)	26.12	26.03	25.45	27.00	21.86	21.77	21.19	22.74
EDGE(GMSK 4 Tx slots)	24.92	24.89	24.31	26.00	21.92	21.89	21.31	23.00
EDGE(8PSK 1 Tx slot)	24.66	24.41	24.10	25.50	15.66	15.41	15.10	16.50
EDGE(8PSK 2 Tx slots)	24.09	23.67	23.48	25.00	18.09	17.67	17.48	19.00
EDGE(8PSK 3 Tx slots)	22.67	22.52	22.12	23.50	18.41	18.26	17.86	19.24
EDGE(8PSK 4 Tx slots)	21.02	20.62	20.35	22.00	18.02	17.62	17.35	19.00

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)	WCDMA V			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel		9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
3GPP Rel 99	AMR 12.2Kbps	24.46	24.44	24.54	25.50	24.32	24.33	24.13	25.30	23.65	23.74	23.81	25.00
3GPP Rel 99	RMC 12.2Kbps	24.47	24.45	24.58	25.50	24.34	24.35	24.17	25.30	23.66	23.75	23.82	25.00
3GPP Rel 6	HSDPA Subtest-1	23.12	23.03	23.14	24.50	22.95	22.96	22.85	24.30	22.34	22.45	22.58	24.00
3GPP Rel 6	HSDPA Subtest-2	23.14	23.08	23.18	24.50	22.92	22.95	22.84	24.30	22.34	22.46	22.58	24.00
3GPP Rel 6	HSDPA Subtest-3	22.66	22.54	22.66	24.00	22.28	22.33	22.27	23.80	21.87	21.96	22.09	23.50
3GPP Rel 6	HSDPA Subtest-4	22.66	22.50	22.66	24.00	22.31	22.32	22.25	23.80	21.84	21.96	22.08	23.50
3GPP Rel 8	DC-HSDPA Subtest-1	23.08	23.01	23.03	24.50	22.88	22.92	22.81	24.30	22.29	22.34	22.45	24.00
3GPP Rel 8	DC-HSDPA Subtest-2	23.07	23.02	23.04	24.50	22.87	22.91	22.82	24.30	22.28	22.33	22.43	24.00
3GPP Rel 8	DC-HSDPA Subtest-3	22.42	22.41	22.52	24.00	22.16	22.21	22.08	23.80	21.79	21.88	21.99	23.50
3GPP Rel 8	DC-HSDPA Subtest-4	22.41	22.39	22.51	24.00	22.17	22.20	22.07	23.80	21.80	21.89	21.99	23.50
3GPP Rel 6	HSUPA Subtest-1	20.49	20.49	20.57	22.00	20.32	20.36	20.22	21.80	21.86	21.91	22.07	24.00
3GPP Rel 6	HSUPA Subtest-2	18.58	18.51	18.59	20.00	18.42	18.47	18.36	19.80	19.85	19.98	20.17	22.00
3GPP Rel 6	HSUPA Subtest-3	19.62	19.52	19.55	21.00	19.51	19.58	19.42	20.80	20.88	20.99	21.15	23.00
3GPP Rel 6	HSUPA Subtest-4	18.77	18.52	18.52	20.00	18.66	18.76	18.47	19.80	19.83	20.03	20.17	22.00
3GPP Rel 6	HSUPA Subtest-5	20.50	20.50	20.60	22.00	20.60	20.70	20.50	21.80	21.90	22.00	22.10	24.00
3GPP Rel 7	HSPA+ (16QAM) Subtest-1	18.38	18.42	18.51	19.50	18.25	18.33	18.24	19.30	19.72	19.83	19.94	21.50

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				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	23.84	24.03	24.02		
20	QPSK	1	49	23.89	24.10	23.83	24.6	0
20	QPSK	1	99	23.88	23.70	23.84		
20	QPSK	50	0	22.99	23.11	23.10		
20	QPSK	50	24	22.96	22.95	23.01	23.6	1
20	QPSK	50	50	22.83	22.77	23.10		
20	QPSK	100	0	22.97	23.03	23.02		
20	16QAM	1	0	23.32	23.35	23.50		
20	16QAM	1	49	23.33	23.38	23.40	23.6	1
20	16QAM	1	99	22.98	22.85	23.20		
20	16QAM	50	0	22.01	21.95	22.04		
20	16QAM	50	24	21.90	22.09	22.13	22.6	2
20	16QAM	50	50	21.79	21.87	21.93		
20	16QAM	100	0	21.79	22.11	22.18		
20	64QAM	1	0	22.04	22.24	22.20		
20	64QAM	1	49	22.06	21.98	22.11	22.6	2
20	64QAM	1	99	22.02	21.99	22.04		
20	64QAM	50	0	20.93	21.06	21.16		
20	64QAM	50	24	20.92	20.94	21.00	21.6	3
20	64QAM	50	50	20.77	20.79	20.92		
20	64QAM	100	0	20.79	21.06	21.07		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	23.87	24.03	24.08		
15	QPSK	1	37	23.85	23.72	23.72	24.6	0
15	QPSK	1	74	23.86	24.03	24.04		
15	QPSK	36	0	22.98	22.82	23.06		
15	QPSK	36	20	22.89	22.94	22.94	23.6	1
15	QPSK	36	39	22.86	22.89	23.06		
15	QPSK	75	0	22.82	22.88	23.09		
15	16QAM	1	0	23.48	23.53	23.57		
15	16QAM	1	37	22.95	23.28	23.32	23.6	1
15	16QAM	1	74	23.49	22.92	23.07		
15	16QAM	36	0	22.10	22.15	22.09		
15	16QAM	36	20	21.95	21.94	22.03	22.6	2
15	16QAM	36	39	21.82	21.86	22.04		
15	16QAM	75	0	21.91	21.95	22.12		
15	64QAM	1	0	22.25	21.86	22.32		
15	64QAM	1	37	21.94	21.99	22.21	22.6	2
15	64QAM	1	74	22.09	22.08	21.91		
15	64QAM	36	0	21.06	20.91	21.06		
15	64QAM	36	20	20.91	20.93	21.05	21.6	3
15	64QAM	36	39	20.86	20.83	20.91		
15	64QAM	75	0	20.94	20.90	21.01		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	23.70	23.95	24.02		
10	QPSK	1	25	23.77	23.79	23.82	24.6	0
10	QPSK	1	49	23.98	24.02	24.04		
10	QPSK	25	0	22.76	22.82	23.06		
10	QPSK	25	12	22.84	22.73	22.95	23.6	1
10	QPSK	25	25	22.65	22.76	23.00		
10	QPSK	50	0	22.76	22.81	23.14		
10	16QAM	1	0	23.25	23.24	23.29		
10	16QAM	1	25	22.97	23.22	23.20	23.6	1
10	16QAM	1	49	23.21	23.25	23.22		
10	16QAM	25	0	21.75	21.81	22.07		
10	16QAM	25	12	21.97	21.84	22.15	22.6	2
10	16QAM	25	25	21.73	21.68	21.93		
10	16QAM	50	0	21.85	21.86	22.04		
10	64QAM	1	0	22.16	21.79	22.26		
10	64QAM	1	25	22.04	21.92	21.65	22.6	2
10	64QAM	1	49	22.25	22.06	22.26		
10	64QAM	25	0	20.83	20.90	21.03		
10	64QAM	25	12	20.79	20.81	21.19	21.6	3
10	64QAM	25	25	20.79	20.64	20.96		
10	64QAM	50	0	20.75	20.88	21.14		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	23.81	23.90	23.98		
5	QPSK	1	12	23.60	23.73	23.79	24.6	0
5	QPSK	1	24	23.75	23.88	24.09		
5	QPSK	12	0	22.78	22.85	22.95		
5	QPSK	12	7	22.71	22.78	22.99	23.6	1
5	QPSK	12	13	22.91	22.79	23.00		
5	QPSK	25	0	22.80	22.83	22.93		
5	16QAM	1	0	23.06	23.20	23.33		
5	16QAM	1	12	22.85	22.90	23.31	23.6	1
5	16QAM	1	24	22.69	23.08	23.22		
5	16QAM	12	0	21.96	21.88	22.01		
5	16QAM	12	7	21.69	21.87	21.99	22.6	2
5	16QAM	12	13	21.81	21.84	22.08		
5	16QAM	25	0	21.94	21.75	21.99		
5	64QAM	1	0	22.04	22.00	22.06		
5	64QAM	1	12	22.11	21.57	22.11	22.6	2
5	64QAM	1	24	22.04	21.91	22.04		
5	64QAM	12	0	20.87	20.94	21.07		
5	64QAM	12	7	20.80	20.94	20.97	21.6	3
5	64QAM	12	13	20.89	20.96	20.93		
5	64QAM	25	0	20.87	20.88	21.00		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	23.60	23.85	23.79		
3	QPSK	1	8	23.61	23.76	23.90	24.6	0
3	QPSK	1	14	23.82	23.61	23.77		
3	QPSK	8	0	22.82	22.82	22.99		
3	QPSK	8	4	22.88	22.79	22.92	23.6	1
3	QPSK	8	7	22.67	22.81	23.04		
3	QPSK	15	0	22.71	22.71	22.97		
3	16QAM	1	0	23.02	23.11	23.07		
3	16QAM	1	8	22.80	23.03	22.95	23.6	1
3	16QAM	1	14	23.04	23.01	23.03		
3	16QAM	8	0	21.73	22.11	21.96		
3	16QAM	8	4	21.77	22.05	22.00	22.6	2
3	16QAM	8	7	21.76	21.93	21.92		
3	16QAM	15	0	21.83	21.71	22.05		
3	64QAM	1	0	21.94	21.79	22.02		
3	64QAM	1	8	21.79	21.77	21.99	22.6	2
3	64QAM	1	14	22.12	22.01	21.93		
3	64QAM	8	0	20.85	21.10	21.01		
3	64QAM	8	4	20.87	20.83	21.13	21.6	3
3	64QAM	8	7	20.73	20.80	20.94		
3	64QAM	15	0	20.72	20.81	20.91		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	23.61	23.56	23.75		
1.4	QPSK	1	3	23.68	23.79	23.68		
1.4	QPSK	1	5	23.59	23.77	23.86	24.6	0
1.4	QPSK	3	0	23.68	23.81	23.86		
1.4	QPSK	3	1	23.70	23.73	23.64		
1.4	QPSK	3	3	23.60	23.72	23.65		
1.4	QPSK	6	0	22.64	22.64	22.74	23.6	1
1.4	16QAM	1	0	22.98	22.76	23.09		
1.4	16QAM	1	3	22.71	23.02	23.05		
1.4	16QAM	1	5	22.94	23.09	22.76	23.6	1
1.4	16QAM	3	0	22.76	22.90	22.86		
1.4	16QAM	3	1	22.64	22.89	22.89		
1.4	16QAM	3	3	22.72	22.79	22.65		
1.4	16QAM	6	0	21.77	21.68	21.72	22.6	2
1.4	64QAM	1	0	21.96	22.02	22.04		
1.4	64QAM	1	3	21.80	21.65	22.10		
1.4	64QAM	1	5	21.83	21.83	21.88	22.6	2
1.4	64QAM	3	0	21.82	21.89	21.82		
1.4	64QAM	3	1	21.90	21.54	21.88		
1.4	64QAM	3	3	21.53	21.96	22.00		
1.4	64QAM	6	0	20.62	20.67	20.78	21.6	3

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				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	23.54	23.70	23.72		
20	QPSK	1	49	23.72	23.66	23.59	24.6	0
20	QPSK	1	99	23.76	23.82	23.58		
20	QPSK	50	0	22.62	22.82	22.74		
20	QPSK	50	24	22.56	22.61	22.66	23.6	1
20	QPSK	50	50	22.66	22.63	22.72		
20	QPSK	100	0	22.59	22.72	22.70		
20	16QAM	1	0	22.95	22.95	22.83		
20	16QAM	1	49	22.60	22.84	22.93	23.6	1
20	16QAM	1	99	22.86	23.09	22.92		
20	16QAM	50	0	21.59	21.98	21.52		
20	16QAM	50	24	21.15	21.57	21.68	22.6	2
20	16QAM	50	50	21.72	21.60	21.84		
20	16QAM	100	0	21.70	21.77	21.76		
20	64QAM	1	0	21.56	22.02	21.97		
20	64QAM	1	49	21.63	21.45	22.01	22.6	2
20	64QAM	1	99	22.06	22.00	21.85		
20	64QAM	50	0	20.86	20.94	20.74		
20	64QAM	50	24	20.86	20.63	20.74	21.6	3
20	64QAM	50	50	20.59	20.64	20.72		
20	64QAM	100	0	20.65	20.77	20.64		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	23.44	23.79	23.79		
15	QPSK	1	37	23.26	23.46	23.57	24.6	0
15	QPSK	1	74	23.72	23.72	23.70		
15	QPSK	36	0	22.52	22.51	22.60		
15	QPSK	36	20	22.51	22.55	22.53	23.6	1
15	QPSK	36	39	22.33	22.60	22.63		
15	QPSK	75	0	22.62	22.65	22.53		
15	16QAM	1	0	23.03	23.08	23.07		
15	16QAM	1	37	23.03	23.01	23.03	23.6	1
15	16QAM	1	74	23.08	23.05	23.13		
15	16QAM	36	0	21.58	21.70	21.48		
15	16QAM	36	20	21.29	21.43	21.59	22.6	2
15	16QAM	36	39	21.51	21.77	21.60		
15	16QAM	75	0	21.33	21.66	21.55		
15	64QAM	1	0	21.94	21.93	21.56		
15	64QAM	1	37	21.98	21.61	21.71	22.6	2
15	64QAM	1	74	22.06	21.90	21.91		
15	64QAM	36	0	20.69	20.82	20.68		
15	64QAM	36	20	20.89	20.53	20.52	21.6	3
15	64QAM	36	39	20.81	20.78	20.59		
15	64QAM	75	0	20.88	20.65	20.44		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	23.49	23.76	23.69		
10	QPSK	1	25	23.65	23.56	23.72	24.6	0
10	QPSK	1	49	23.76	23.78	23.73		
10	QPSK	25	0	22.33	22.58	22.32		
10	QPSK	25	12	22.30	22.60	22.69	23.6	1
10	QPSK	25	25	22.48	22.61	22.79		
10	QPSK	50	0	22.25	22.48	22.76		
10	16QAM	1	0	23.16	22.83	23.08		
10	16QAM	1	25	22.64	22.73	23.11	23.6	1
10	16QAM	1	49	23.14	23.02	23.10		
10	16QAM	25	0	21.47	21.65	21.67		
10	16QAM	25	12	21.49	21.56	21.67	22.6	2
10	16QAM	25	25	21.59	21.55	21.79		
10	16QAM	50	0	21.27	21.64	21.83		
10	64QAM	1	0	21.98	21.77	21.95		
10	64QAM	1	25	21.39	21.52	21.71	22.6	2
10	64QAM	1	49	22.09	21.96	21.92		
10	64QAM	25	0	20.46	20.63	20.52		
10	64QAM	25	12	20.41	20.68	20.80	21.6	3
10	64QAM	25	25	20.55	20.61	20.73		
10	64QAM	50	0	20.13	20.48	20.68		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	23.20	23.70	23.71		
5	QPSK	1	12	23.39	23.52	23.50	24.6	0
5	QPSK	1	24	23.22	23.41	23.61		
5	QPSK	12	0	22.42	22.48	22.64		
5	QPSK	12	7	22.34	22.58	22.67	23.6	1
5	QPSK	12	13	22.36	22.46	22.59		
5	QPSK	25	0	22.43	22.56	22.68		
5	16QAM	1	0	22.59	23.28	23.20		
5	16QAM	1	12	22.41	22.65	22.75	23.6	1
5	16QAM	1	24	22.67	22.59	23.01		
5	16QAM	12	0	21.49	21.74	21.64		
5	16QAM	12	7	21.40	21.55	21.83	22.6	2
5	16QAM	12	13	21.40	21.52	21.66		
5	16QAM	25	0	21.54	21.57	21.64		
5	64QAM	1	0	21.68	21.78	21.56		
5	64QAM	1	12	21.35	21.78	21.90	22.6	2
5	64QAM	1	24	21.22	21.83	22.01		
5	64QAM	12	0	20.47	20.73	20.69		
5	64QAM	12	7	20.42	20.70	20.71	21.6	3
5	64QAM	12	13	20.34	20.50	20.64		
5	64QAM	25	0	20.55	20.64	20.67		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	23.35	23.58	23.64		
3	QPSK	1	8	23.30	23.57	23.69	24.6	0
3	QPSK	1	14	23.01	23.75	23.78		
3	QPSK	8	0	22.31	22.75	22.78		
3	QPSK	8	4	22.24	22.66	22.63	23.6	1
3	QPSK	8	7	22.41	22.56	22.71		
3	QPSK	15	0	22.47	22.59	22.67		
3	16QAM	1	0	22.73	22.78	22.73		
3	16QAM	1	8	23.01	22.79	22.41	23.6	1
3	16QAM	1	14	22.94	22.70	22.54		
3	16QAM	8	0	21.25	21.62	21.74		
3	16QAM	8	4	21.19	21.63	21.58	22.6	2
3	16QAM	8	7	21.44	21.62	21.69		
3	16QAM	15	0	21.39	21.62	21.63		
3	64QAM	1	0	21.56	21.90	21.89		
3	64QAM	1	8	21.20	21.53	21.97	22.6	2
3	64QAM	1	14	21.36	21.74	21.40		
3	64QAM	8	0	20.65	20.67	20.86		
3	64QAM	8	4	20.13	20.55	20.66	21.6	3
3	64QAM	8	7	20.36	20.62	20.56		
3	64QAM	15	0	20.44	20.55	20.64		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	23.04	23.31	23.06		
1.4	QPSK	1	3	23.60	23.59	23.61		
1.4	QPSK	1	5	23.24	23.50	23.16	24.6	0
1.4	QPSK	3	0	23.27	23.55	23.42		
1.4	QPSK	3	1	23.34	23.41	23.62		
1.4	QPSK	3	3	23.14	23.39	23.53		
1.4	QPSK	6	0	22.18	22.37	22.47	23.6	1
1.4	16QAM	1	0	22.34	22.70	22.57		
1.4	16QAM	1	3	22.32	22.53	22.55		
1.4	16QAM	1	5	22.35	22.50	22.66	23.6	1
1.4	16QAM	3	0	22.14	22.46	22.52		
1.4	16QAM	3	1	22.32	22.43	22.53		
1.4	16QAM	3	3	22.22	22.64	22.50		
1.4	16QAM	6	0	21.58	21.58	21.68	22.6	2
1.4	64QAM	1	0	21.39	21.62	21.84		
1.4	64QAM	1	3	21.64	21.71	21.80		
1.4	64QAM	1	5	21.26	21.62	21.82	22.6	2
1.4	64QAM	3	0	21.45	21.62	21.72		
1.4	64QAM	3	1	21.33	21.65	21.61		
1.4	64QAM	3	3	21.40	21.57	21.74		
1.4	64QAM	6	0	20.21	20.44	20.61	21.6	3

Band 5 (Celluar Band)
Part 22H(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				20450	20525	20600		
Frequency (MHz)				829	836.5	844		
10	QPSK	1	0	23.54	23.51	23.54		
10	QPSK	1	25	23.37	23.41	23.56	24.8	0
10	QPSK	1	49	23.93	23.92	23.90		
10	QPSK	25	0	23.02	22.78	22.98		
10	QPSK	25	12	22.63	22.65	22.95	23.8	1
10	QPSK	25	25	22.59	22.77	22.95		
10	QPSK	50	0	22.86	22.70	22.82		
10	16QAM	1	0	22.47	23.11	23.10		
10	16QAM	1	25	22.62	22.78	22.97	23.8	1
10	16QAM	1	49	23.25	22.94	23.25		
10	16QAM	25	0	21.59	21.64	22.06		
10	16QAM	25	12	21.60	21.73	22.01	22.8	2
10	16QAM	25	25	21.58	21.78	22.03		
10	16QAM	50	0	21.52	21.67	21.89		
10	64QAM	1	0	21.83	21.77	22.35		
10	64QAM	1	25	21.68	21.93	21.95	22.8	2
10	64QAM	1	49	21.63	21.98	22.29		
10	64QAM	25	0	20.41	20.70	21.00		
10	64QAM	25	12	20.48	20.71	21.04	21.8	3
10	64QAM	25	25	20.51	20.78	20.91		
10	64QAM	50	0	20.58	20.69	20.96		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	23.46	23.50	23.48		
5	QPSK	1	12	23.26	23.38	23.37	24.8	0
5	QPSK	1	24	23.41	23.59	23.72		
5	QPSK	12	0	22.39	22.71	22.71		
5	QPSK	12	7	22.37	22.64	22.69	23.8	1
5	QPSK	12	13	22.28	22.64	22.72		
5	QPSK	25	0	22.45	22.62	22.70		
5	16QAM	1	0	22.97	22.78	22.67		
5	16QAM	1	12	22.27	22.78	22.84	23.8	1
5	16QAM	1	24	22.93	22.85	22.88		
5	16QAM	12	0	21.39	21.74	21.70		
5	16QAM	12	7	21.40	21.73	21.66	22.8	2
5	16QAM	12	13	21.40	21.71	21.81		
5	16QAM	25	0	21.42	21.62	21.71		
5	64QAM	1	0	21.44	21.71	21.91		
5	64QAM	1	12	21.50	21.71	21.90	22.8	2
5	64QAM	1	24	21.69	21.75	21.95		
5	64QAM	12	0	20.41	20.72	20.79		
5	64QAM	12	7	20.35	20.68	20.66	21.8	3
5	64QAM	12	13	20.34	20.77	20.70		
5	64QAM	25	0	20.39	20.54	20.69		
Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	23.30	23.43	23.44		
3	QPSK	1	8	23.29	23.39	23.51	24.8	0
3	QPSK	1	14	23.32	23.70	23.64		
3	QPSK	8	0	22.44	22.70	22.72		
3	QPSK	8	4	22.33	22.65	22.65	23.8	1
3	QPSK	8	7	22.33	22.63	22.71		
3	QPSK	15	0	22.36	22.66	22.72		
3	16QAM	1	0	22.62	22.91	23.00		
3	16QAM	1	8	22.80	23.05	23.07	23.8	1
3	16QAM	1	14	22.42	23.15	23.09		
3	16QAM	8	0	21.23	21.69	21.68		
3	16QAM	8	4	21.37	21.71	21.72	22.8	2
3	16QAM	8	7	21.45	21.73	21.78		
3	16QAM	15	0	21.30	21.70	21.61		
3	64QAM	1	0	21.59	21.80	21.93		
3	64QAM	1	8	21.58	21.91	21.92	22.8	2
3	64QAM	1	14	21.27	21.95	21.99		
3	64QAM	8	0	20.25	20.63	20.66		
3	64QAM	8	4	20.30	20.61	20.76	21.8	3
3	64QAM	8	7	20.48	20.61	20.79		
3	64QAM	15	0	20.22	20.54	20.64		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	23.31	23.38	23.34		
1.4	QPSK	1	3	23.31	23.37	23.44		
1.4	QPSK	1	5	23.22	23.44	23.55	24.8	0
1.4	QPSK	3	0	23.28	23.53	23.50		
1.4	QPSK	3	1	23.37	23.55	23.52		
1.4	QPSK	3	3	23.36	23.50	23.56		
1.4	QPSK	6	0	22.23	22.54	22.60	23.8	1
1.4	16QAM	1	0	22.65	22.49	22.71		
1.4	16QAM	1	3	22.61	22.75	22.71		
1.4	16QAM	1	5	22.93	23.15	22.53	23.8	1
1.4	16QAM	3	0	22.34	22.50	22.75		
1.4	16QAM	3	1	22.38	22.65	22.66		
1.4	16QAM	3	3	22.34	22.62	22.69		
1.4	16QAM	6	0	21.24	21.64	21.77	22.8	2
1.4	64QAM	1	0	21.56	21.75	21.55		
1.4	64QAM	1	3	21.56	21.85	21.43		
1.4	64QAM	1	5	21.59	21.87	21.62	22.8	2
1.4	64QAM	3	0	21.46	21.62	21.78		
1.4	64QAM	3	1	21.12	21.71	21.81		
1.4	64QAM	3	3	21.08	21.62	21.80		
1.4	64QAM	6	0	20.29	20.48	20.63	21.8	3

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	24.00	24.02	23.99	24.5	0
20	QPSK	1	49	23.47	23.72	23.98		
20	QPSK	1	99	23.87	23.94	23.69		
20	QPSK	50	0	22.96	23.04	23.02	23.5	1
20	QPSK	50	24	22.95	22.95	23.01		
20	QPSK	50	50	22.94	22.93	22.98		
20	QPSK	100	0	22.99	23.03	23.01		
20	16QAM	1	0	22.80	23.38	23.19	23.5	1
20	16QAM	1	49	23.05	22.96	23.17		
20	16QAM	1	99	22.77	23.03	23.10		
20	16QAM	50	0	21.73	21.94	22.00	22.5	2
20	16QAM	50	24	21.98	21.94	22.09		
20	16QAM	50	50	22.02	22.03	22.13		
20	16QAM	100	0	21.95	22.07	22.15		
20	64QAM	1	0	22.19	21.89	22.25	22.5	2
20	64QAM	1	49	21.52	21.88	21.82		
20	64QAM	1	99	22.01	22.12	22.07		
20	64QAM	50	0	20.81	20.95	21.07	21.5	3
20	64QAM	50	24	20.86	20.89	20.93		
20	64QAM	50	50	20.96	21.01	21.01		
20	64QAM	100	0	20.89	21.03	21.16		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	23.49	23.82	23.98	24.5	0
15	QPSK	1	37	23.76	23.63	24.00		
15	QPSK	1	74	23.98	23.81	23.64		
15	QPSK	36	0	22.89	22.86	23.20	23.5	1
15	QPSK	36	20	22.74	22.88	23.15		
15	QPSK	36	39	22.85	22.91	23.11		
15	QPSK	75	0	22.92	22.91	23.17		
15	16QAM	1	0	22.49	23.19	22.86	23.5	1
15	16QAM	1	37	22.85	23.14	22.86		
15	16QAM	1	74	23.25	23.01	22.79		
15	16QAM	36	0	21.85	21.91	22.17	22.5	2
15	16QAM	36	20	21.83	21.93	22.13		
15	16QAM	36	39	21.85	21.94	22.08		
15	16QAM	75	0	21.93	21.96	22.19		
15	64QAM	1	0	22.00	22.16	22.02	22.5	2
15	64QAM	1	37	21.53	21.79	21.93		
15	64QAM	1	74	22.02	22.28	22.10		
15	64QAM	36	0	20.92	20.96	21.19	21.5	3
15	64QAM	36	20	20.94	20.90	21.18		
15	64QAM	36	39	20.81	20.91	20.77		
15	64QAM	75	0	20.85	20.91	21.09		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	23.65	23.93	24.01	24.5	0
10	QPSK	1	25	23.76	24.00	24.00		
10	QPSK	1	49	24.01	24.00	23.27		
10	QPSK	25	0	22.74	22.89	22.96	23.5	1
10	QPSK	25	12	22.80	22.79	23.15		
10	QPSK	25	25	22.75	23.03	22.99		
10	QPSK	50	0	22.83	22.92	22.67		
10	16QAM	1	0	23.48	22.96	23.31	23.5	1
10	16QAM	1	25	23.11	23.19	23.49		
10	16QAM	1	49	23.01	23.37	22.28		
10	16QAM	25	0	21.84	21.99	22.00	22.5	2
10	16QAM	25	12	21.57	21.85	21.87		
10	16QAM	25	25	21.72	22.00	22.07		
10	16QAM	50	0	21.78	21.85	22.34		
10	64QAM	1	0	21.91	22.19	22.16	22.5	2
10	64QAM	1	25	21.98	22.03	22.40		
10	64QAM	1	49	22.04	22.23	21.79		
10	64QAM	25	0	20.67	20.86	20.99	21.5	3
10	64QAM	25	12	20.74	20.74	20.95		
10	64QAM	25	25	20.72	20.92	21.00		
10	64QAM	50	0	20.94	20.85	20.97		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	23.47	23.81	23.70	24.5	0
5	QPSK	1	12	23.67	23.64	24.00		
5	QPSK	1	24	23.60	23.77	23.47		
5	QPSK	12	0	22.75	22.87	22.96	23.5	1
5	QPSK	12	7	22.78	22.80	22.98		
5	QPSK	12	13	22.61	22.87	22.63		
5	QPSK	25	0	22.69	22.83	22.93		
5	16QAM	1	0	23.03	23.30	23.47	23.5	1
5	16QAM	1	12	23.22	23.26	23.35		
5	16QAM	1	24	22.92	23.19	22.67		
5	16QAM	12	0	21.64	21.94	22.02	22.5	2
5	16QAM	12	7	21.72	21.88	21.96		
5	16QAM	12	13	21.55	21.90	21.99		
5	16QAM	25	0	21.73	21.88	22.00		
5	64QAM	1	0	21.88	21.94	22.12	22.5	2
5	64QAM	1	12	21.68	21.78	22.02		
5	64QAM	1	24	21.85	22.10	21.97		
5	64QAM	12	0	20.68	20.88	20.98	21.5	3
5	64QAM	12	7	20.86	20.90	21.00		
5	64QAM	12	13	20.65	20.90	20.95		
5	64QAM	25	0	20.69	20.82	20.94		

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	23.31	23.31	23.32	24.5	0
10	QPSK	1	25	23.34	23.57	23.43		
10	QPSK	1	49	23.38	23.68	23.56		
10	QPSK	25	0	22.18	22.37	22.27	23.5	1
10	QPSK	25	12	22.26	22.26	22.30		
10	QPSK	25	25	22.26	22.24	22.25		
10	QPSK	50	0	22.29	22.35	22.32		
10	16QAM	1	0	22.79	22.65	22.31	23.5	1
10	16QAM	1	25	22.29	22.64	22.60		
10	16QAM	1	49	22.60	22.85	22.60		
10	16QAM	25	0	21.29	21.30	21.31	22.5	2
10	16QAM	25	12	21.22	21.27	21.39		
10	16QAM	25	25	21.24	21.28	21.34		
10	16QAM	50	0	21.32	21.27	21.44		
10	64QAM	1	0	21.61	21.46	21.58	22.5	2
10	64QAM	1	25	22.00	21.50	21.39		
10	64QAM	1	49	21.54	21.78	21.82		
10	64QAM	25	0	20.29	20.25	20.25	21.5	3
10	64QAM	25	12	20.31	20.29	20.32		
10	64QAM	25	25	20.29	20.26	20.29		
10	64QAM	50	0	20.29	20.26	20.29		
Channel				23035	23095	23155	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				701.5	707.5	713.5		
5	QPSK	1	0	23.07	23.24	23.11	24.5	0
5	QPSK	1	12	23.15	23.15	23.13		
5	QPSK	1	24	23.19	23.23	23.24		
5	QPSK	12	0	22.20	22.22	22.21	23.5	1
5	QPSK	12	7	22.15	22.16	22.20		
5	QPSK	12	13	22.17	22.18	22.32		
5	QPSK	25	0	22.17	22.15	22.24		
5	16QAM	1	0	22.36	22.77	22.84	23.5	1
5	16QAM	1	12	22.22	22.70	22.31		
5	16QAM	1	24	22.38	22.41	22.40		
5	16QAM	12	0	21.28	21.19	21.39	22.5	2
5	16QAM	12	7	21.24	21.12	21.25		
5	16QAM	12	13	21.23	21.22	21.26		
5	16QAM	25	0	21.31	21.16	21.24		
5	64QAM	1	0	21.27	21.48	21.49	22.5	2
5	64QAM	1	12	21.13	21.49	21.59		
5	64QAM	1	24	21.56	21.51	21.02		
5	64QAM	12	0	20.25	20.18	20.34	21.5	3
5	64QAM	12	7	20.29	20.35	20.25		
5	64QAM	12	13	20.25	20.13	20.27		
5	64QAM	25	0	20.21	20.27	20.24		
Channel				23025	23095	23165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				700.5	707.5	714.5		
3	QPSK	1	0	23.09	23.17	23.09	24.5	0
3	QPSK	1	8	23.15	23.27	23.17		
3	QPSK	1	14	23.11	23.20	23.22		
3	QPSK	8	0	22.14	22.23	22.18	23.5	1
3	QPSK	8	4	22.16	22.30	22.28		
3	QPSK	8	7	22.20	22.24	22.19		
3	QPSK	15	0	22.18	22.15	22.23		
3	16QAM	1	0	22.29	22.33	22.75	23.5	1
3	16QAM	1	8	22.37	22.68	22.82		
3	16QAM	1	14	22.57	22.68	22.61		
3	16QAM	8	0	21.24	21.25	21.16	22.5	2
3	16QAM	8	4	21.28	21.35	21.27		
3	16QAM	8	7	21.24	21.35	21.33		
3	16QAM	15	0	21.17	21.13	21.42		
3	64QAM	1	0	21.20	21.16	21.35	22.5	2
3	64QAM	1	8	21.51	21.29	21.50		
3	64QAM	1	14	21.35	21.43	21.04		
3	64QAM	8	0	20.20	20.29	20.18	21.5	3
3	64QAM	8	4	20.23	20.31	20.29		
3	64QAM	8	7	20.35	20.22	20.37		
3	64QAM	15	0	20.18	20.11	20.16		
Channel				23017	23095	23173	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				699.7	707.5	715.3		
1.4	QPSK	1	0	22.93	23.00	22.98	24.5	0
1.4	QPSK	1	3	23.26	23.12	23.29		
1.4	QPSK	1	5	23.09	23.21	23.06		
1.4	QPSK	3	0	23.11	23.04	23.04		
1.4	QPSK	3	1	23.07	23.06	23.09		
1.4	QPSK	3	3	23.15	23.30	23.09		
1.4	QPSK	6	0	22.00	22.02	22.05	23.5	1
1.4	16QAM	1	0	22.55	22.67	22.54	23.5	1
1.4	16QAM	1	3	22.57	22.49	22.08		
1.4	16QAM	1	5	22.17	22.26	22.15		
1.4	16QAM	3	0	22.13	21.97	22.13		
1.4	16QAM	3	1	22.18	22.09	22.17		
1.4	16QAM	3	3	21.93	22.23	22.09		
1.4	16QAM	6	0	21.23	21.18	21.22	22.5	2
1.4	64QAM	1	0	21.31	20.91	21.47	22.5	2
1.4	64QAM	1	3	21.36	21.29	21.50		
1.4	64QAM	1	5	21.36	21.12	21.34		
1.4	64QAM	3	0	21.35	21.27	21.28		
1.4	64QAM	3	1	20.96	21.28	21.42		
1.4	64QAM	3	3	21.33	21.20	21.13		
1.4	64QAM	6	0	20.05	20.01	20.06	21.5	3

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				23780	23790	23800		
Frequency (MHz)				709	710	711		
10	QPSK	1	0	23.21	23.07	23.27	24.5	0
10	QPSK	1	25	23.05	23.32	23.18		
10	QPSK	1	49	23.39	23.43	23.31		
10	QPSK	25	0	22.10	22.12	22.12	23.5	1
10	QPSK	25	12	22.12	22.05	22.08		
10	QPSK	25	25	22.15	22.16	22.11		
10	QPSK	50	0	22.14	22.16	22.12		
10	16QAM	1	0	22.41	22.32	22.27	23.5	1
10	16QAM	1	25	22.44	22.05	22.20		
10	16QAM	1	49	22.49	22.47	22.90		
10	16QAM	25	0	21.17	21.07	21.15	22.5	2
10	16QAM	25	12	21.11	21.08	21.08		
10	16QAM	25	25	21.16	21.21	21.03		
10	16QAM	50	0	21.07	21.13	21.19		
10	64QAM	1	0	21.61	21.47	21.60	22.5	2
10	64QAM	1	25	21.26	21.35	20.91		
10	64QAM	1	49	21.57	21.60	21.39		
10	64QAM	25	0	20.09	20.12	20.16	21.5	3
10	64QAM	25	12	20.15	20.16	20.14		
10	64QAM	25	25	20.19	20.09	20.12		
10	64QAM	50	0	20.15	20.06	20.11		
Channel				23755	23790	23825	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				706.5	710	713.5		
5	QPSK	1	0	22.98	23.05	23.06	24.5	0
5	QPSK	1	12	23.03	22.94	23.00		
5	QPSK	1	24	23.02	23.15	23.02		
5	QPSK	12	0	21.95	22.02	22.03	23.5	1
5	QPSK	12	7	22.06	22.11	22.03		
5	QPSK	12	13	22.07	22.04	22.14		
5	QPSK	25	0	22.04	22.15	22.07		
5	16QAM	1	0	22.57	22.42	22.28	23.5	1
5	16QAM	1	12	22.45	22.62	22.26		
5	16QAM	1	24	22.60	22.55	22.64		
5	16QAM	12	0	20.92	21.06	21.13	22.5	2
5	16QAM	12	7	21.13	21.19	21.12		
5	16QAM	12	13	21.14	21.12	21.20		
5	16QAM	25	0	20.99	20.99	20.98		
5	64QAM	1	0	21.41	21.37	21.29	22.5	2
5	64QAM	1	12	21.31	21.21	21.08		
5	64QAM	1	24	21.14	20.91	21.20		
5	64QAM	12	0	20.04	20.06	20.16	21.5	3
5	64QAM	12	7	20.18	20.10	20.13		
5	64QAM	12	13	20.22	20.10	20.14		
5	64QAM	25	0	19.97	20.10	19.90		

Band 26 for FCC
(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				26765	26865	26965		
Frequency (MHz)				821.5	831.5	841.5		
15	QPSK	1	0	23.76	23.81	23.62		
15	QPSK	1	37	23.47	23.40	23.48	24.8	0
15	QPSK	1	74	23.70	23.49	23.32		
15	QPSK	36	0	22.62	22.68	22.49		
15	QPSK	36	20	22.52	22.90	22.53	23.8	1
15	QPSK	36	39	22.53	22.70	22.57		
15	QPSK	75	0	22.51	22.82	22.79		
15	16QAM	1	0	22.76	22.72	22.63		
15	16QAM	1	37	22.89	22.76	22.70	23.8	1
15	16QAM	1	74	22.84	22.77	22.54		
15	16QAM	36	0	21.56	21.69	21.53		
15	16QAM	36	20	21.45	21.37	21.56	22.8	2
15	16QAM	36	39	21.48	21.70	21.67		
15	16QAM	75	0	21.48	21.77	21.56		
15	64QAM	1	0	21.52	21.84	21.98		
15	64QAM	1	37	21.96	22.02	21.85	22.8	2
15	64QAM	1	74	21.82	21.83	21.79		
15	64QAM	36	0	20.54	20.77	20.63		
15	64QAM	36	20	20.44	20.70	20.62	21.8	3
15	64QAM	36	39	20.54	20.80	20.66		
15	64QAM	75	0	20.48	20.78	20.58		
Channel				26740	26865	26990	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				819	831.5	844		
10	QPSK	1	0	23.61	23.69	23.40		
10	QPSK	1	25	23.45	23.46	23.61	24.8	0
10	QPSK	1	49	23.49	23.52	23.51		
10	QPSK	25	0	22.60	23.32	23.22		
10	QPSK	25	12	22.48	22.89	23.27	23.8	1
10	QPSK	25	25	22.55	22.78	23.26		
10	QPSK	50	0	22.64	23.23	23.21		
10	16QAM	1	0	22.78	23.45	23.33		
10	16QAM	1	25	22.66	23.19	23.34	23.8	1
10	16QAM	1	49	22.91	23.47	23.54		
10	16QAM	25	0	21.63	21.80	22.40		
10	16QAM	25	12	21.56	21.82	22.13	22.8	2
10	16QAM	25	25	21.66	21.84	22.24		
10	16QAM	50	0	21.63	21.95	22.32		
10	64QAM	1	0	21.55	22.24	22.27		
10	64QAM	1	25	21.64	22.05	22.19	22.8	2
10	64QAM	1	49	21.90	21.95	22.50		
10	64QAM	25	0	20.61	20.73	21.10		
10	64QAM	25	12	20.54	20.84	21.18	21.8	3
10	64QAM	25	25	20.64	20.86	21.28		
10	64QAM	50	0	20.56	20.90	21.24		
Channel				26715	26865	27015	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				816.5	831.5	846.5		
5	QPSK	1	0	23.47	23.56	23.60		
5	QPSK	1	12	23.49	23.66	23.54	24.8	0
5	QPSK	1	24	23.54	23.72	23.55		
5	QPSK	12	0	22.55	22.78	23.22		
5	QPSK	12	7	22.56	22.77	23.27	23.8	1
5	QPSK	12	13	22.57	22.80	23.23		
5	QPSK	25	0	22.56	22.80	23.16		
5	16QAM	1	0	23.11	23.08	23.39		
5	16QAM	1	12	23.02	23.11	23.42	23.8	1
5	16QAM	1	24	23.23	22.90	23.33		
5	16QAM	12	0	21.68	21.85	22.30		
5	16QAM	12	7	21.75	21.79	22.18	22.8	2
5	16QAM	12	13	21.76	21.88	22.20		
5	16QAM	25	0	21.61	21.76	22.25		
5	64QAM	1	0	21.93	22.29	22.03		
5	64QAM	1	12	21.83	22.11	22.06	22.8	2
5	64QAM	1	24	21.40	22.02	22.09		
5	64QAM	12	0	20.65	20.78	21.30		
5	64QAM	12	7	20.73	20.79	21.19	21.8	3
5	64QAM	12	13	20.75	20.88	21.27		
5	64QAM	25	0	20.66	20.69	21.23		
Channel				26705	26865	27025	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				815.5	831.5	847.5		
3	QPSK	1	0	23.44	23.55	23.68		
3	QPSK	1	8	23.50	23.55	23.73	24.8	0
3	QPSK	1	14	23.51	23.47	23.58		
3	QPSK	8	0	22.70	22.76	23.16		
3	QPSK	8	4	22.60	22.69	23.21	23.8	1
3	QPSK	8	7	22.49	22.76	23.30		
3	QPSK	15	0	22.56	22.77	23.18		
3	16QAM	1	0	23.20	23.47	23.26		
3	16QAM	1	8	22.87	23.09	23.31	23.8	1
3	16QAM	1	14	22.99	23.13	23.31		
3	16QAM	8	0	21.76	21.78	22.27		
3	16QAM	8	4	21.71	21.82	22.31	22.8	2
3	16QAM	8	7	21.61	21.79	22.27		
3	16QAM	15	0	21.72	21.68	22.37		
3	64QAM	1	0	21.72	22.08	22.35		
3	64QAM	1	8	21.97	22.09	22.23	22.8	2
3	64QAM	1	14	21.60	21.87	22.37		
3	64QAM	8	0	20.70	20.73	21.26		
3	64QAM	8	4	20.70	20.76	21.30	21.8	3
3	64QAM	8	7	20.77	20.73	21.16		
3	64QAM	15	0	20.61	20.85	21.24		
Channel				26697	26865	27033	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				814.7	831.5	848.3		
1.4	QPSK	1	0	23.35	23.38	23.64		
1.4	QPSK	1	3	23.66	23.69	23.68		
1.4	QPSK	1	5	23.62	23.62	23.52	24.8	0
1.4	QPSK	3	0	23.49	23.73	23.51		
1.4	QPSK	3	1	23.56	23.57	23.53		
1.4	QPSK	3	3	23.69	23.62	23.50		
1.4	QPSK	6	0	22.47	22.59	23.10	23.8	1
1.4	16QAM	1	0	23.02	23.09	23.30		
1.4	16QAM	1	3	22.80	23.03	23.25		
1.4	16QAM	1	5	22.73	23.15	23.30	23.8	1
1.4	16QAM	3	0	22.53	22.68	23.14		
1.4	16QAM	3	1	22.70	22.54	23.13		
1.4	16QAM	3	3	22.45	22.70	23.10		
1.4	16QAM	6	0	21.73	21.78	22.10	22.8	2
1.4	64QAM	1	0	21.74	21.83	22.22		
1.4	64QAM	1	3	21.46	21.58	22.12		
1.4	64QAM	1	5	21.58	21.99	22.33	22.8	2
1.4	64QAM	3	0	21.44	21.47	22.10		
1.4	64QAM	3	1	21.76	21.77	22.19		
1.4	64QAM	3	3	21.82	21.78	22.15		
1.4	64QAM	6	0	20.60	20.61	21.08	21.8	3

Band 38(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				37850	38000	38150		
Frequency (MHz)				2580	2595	2610		
20	QPSK	1	0	23.30	23.56	23.63	24.5	0
20	QPSK	1	49	23.24	23.44	23.46		
20	QPSK	1	99	23.73	23.64	23.72		
20	QPSK	50	0	22.19	22.53	22.52	23.5	1
20	QPSK	50	24	22.24	22.51	22.46		
20	QPSK	50	50	22.60	22.59	22.56		
20	QPSK	100	0	22.58	22.54	22.55		
20	16QAM	1	0	22.47	22.78	22.76	23.5	1
20	16QAM	1	49	22.50	22.58	22.62		
20	16QAM	1	99	22.24	22.68	22.67		
20	16QAM	50	0	21.19	21.58	21.50	22.5	2
20	16QAM	50	24	21.26	21.57	21.53		
20	16QAM	50	50	21.51	21.69	21.60		
20	16QAM	100	0	21.28	21.62	21.54		
20	64QAM	1	0	21.22	21.51	21.52	22.5	2
20	64QAM	1	49	21.05	21.19	21.26		
20	64QAM	1	99	21.04	21.38	21.40		
20	64QAM	50	0	20.13	20.63	20.54	21.5	3
20	64QAM	50	24	20.30	20.51	20.48		
20	64QAM	50	50	20.34	20.73	20.54		
20	64QAM	100	0	20.32	20.66	20.60		
Channel				37825	38000	38175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2577.5	2595	2612.5		
15	QPSK	1	0	23.39	23.23	23.50	24.5	0
15	QPSK	1	37	23.07	23.39	23.36		
15	QPSK	1	74	23.27	23.15	23.70		
15	QPSK	36	0	22.14	21.97	22.59	23.5	1
15	QPSK	36	20	22.26	21.95	22.54		
15	QPSK	36	39	22.34	22.10	22.70		
15	QPSK	75	0	22.28	22.02	22.57		
15	16QAM	1	0	22.61	22.42	22.68	23.5	1
15	16QAM	1	37	22.29	22.36	22.79		
15	16QAM	1	74	22.23	21.99	22.67		
15	16QAM	36	0	21.08	20.98	21.53	22.5	2
15	16QAM	36	20	21.13	20.97	21.58		
15	16QAM	36	39	21.40	20.95	21.57		
15	16QAM	75	0	21.28	21.09	21.65		
15	64QAM	1	0	21.38	20.96	21.52	22.5	2
15	64QAM	1	37	20.71	20.69	21.20		
15	64QAM	1	74	21.03	20.69	21.58		
15	64QAM	36	0	20.07	20.13	20.71	21.5	3
15	64QAM	36	20	20.28	19.96	20.57		
15	64QAM	36	39	20.28	20.10	20.73		
15	64QAM	75	0	20.22	19.96	20.59		
Channel				37800	38000	38200	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2575	2595	2615		
10	QPSK	1	0	23.70	23.67	23.70	24.5	0
10	QPSK	1	25	23.27	23.49	23.72		
10	QPSK	1	49	23.63	23.58	23.70		
10	QPSK	25	0	22.37	22.50	22.80	23.5	1
10	QPSK	25	12	22.34	22.43	22.73		
10	QPSK	25	25	22.38	22.46	22.79		
10	QPSK	50	0	22.43	22.50	22.71		
10	16QAM	1	0	22.49	22.75	22.74	23.5	1
10	16QAM	1	25	22.51	22.63	22.84		
10	16QAM	1	49	22.52	22.54	22.72		
10	16QAM	25	0	21.29	21.49	21.81	22.5	2
10	16QAM	25	12	21.36	21.41	21.74		
10	16QAM	25	25	21.38	21.44	21.79		
10	16QAM	50	0	21.44	21.47	21.80		
10	64QAM	1	0	21.42	21.58	21.76	22.5	2
10	64QAM	1	25	21.06	21.44	21.46		
10	64QAM	1	49	21.26	21.33	21.53		
10	64QAM	25	0	20.26	20.47	20.80	21.5	3
10	64QAM	25	12	20.35	20.48	20.81		
10	64QAM	25	25	20.26	20.62	20.87		
10	64QAM	50	0	20.38	20.51	20.75		
Channel				37775	38000	38225	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2572.5	2595	2617.5		
5	QPSK	1	0	23.39	23.63	23.70	24.5	0
5	QPSK	1	12	23.34	23.65	23.57		
5	QPSK	1	24	23.29	23.41	23.70		
5	QPSK	12	0	22.31	22.37	22.70	23.5	1
5	QPSK	12	7	22.30	22.46	22.70		
5	QPSK	12	13	22.35	22.42	22.61		
5	QPSK	25	0	22.33	22.49	22.75		
5	16QAM	1	0	22.53	22.65	22.81	23.5	1
5	16QAM	1	12	22.33	22.60	22.92		
5	16QAM	1	24	22.14	22.33	22.83		
5	16QAM	12	0	21.36	21.40	21.65	22.5	2
5	16QAM	12	7	21.24	21.49	21.64		
5	16QAM	12	13	21.21	21.45	21.64		
5	16QAM	25	0	21.24	21.49	21.65		
5	64QAM	1	0	21.31	21.39	21.73	22.5	2
5	64QAM	1	12	21.09	21.16	21.56		
5	64QAM	1	24	21.26	21.24	21.37		
5	64QAM	12	0	20.35	20.39	20.75	21.5	3
5	64QAM	12	7	20.25	20.47	20.63		
5	64QAM	12	13	20.33	20.45	20.64		
5	64QAM	25	0	20.23	20.55	20.73		

Band 41 (2.6G Band)

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				39750	40185	40620	41055	41490		
Frequency (MHz)				2506	2549.5	2593	2636.5	2680		
20	QPSK	1	0	23.30	23.50	23.47	23.55	23.75	24.5	0
20	QPSK	1	49	23.24	23.22	23.38	23.41	23.38		
20	QPSK	1	99	23.17	23.36	23.20	23.23	23.66		
20	QPSK	50	0	22.25	22.24	22.27	22.36	22.65	23.5	1
20	QPSK	50	24	22.37	22.33	22.18	22.35	22.51		
20	QPSK	50	50	22.41	22.36	22.19	22.39	22.50		
20	QPSK	100	0	22.23	22.30	22.25	22.30	22.52		
20	16QAM	1	0	22.74	22.53	22.61	22.63	22.96	23.5	1
20	16QAM	1	49	22.37	22.45	22.27	22.33	22.74		
20	16QAM	1	99	22.50	22.50	22.40	22.53	22.77		
20	16QAM	50	0	21.33	21.35	21.21	21.32	21.70	22.5	2
20	16QAM	50	24	21.27	21.37	21.19	21.42	21.57		
20	16QAM	50	50	21.41	21.77	21.23	21.34	21.45		
20	16QAM	100	0	21.33	21.42	21.28	21.35	21.57		
20	64QAM	1	0	20.95	21.37	20.88	21.39	21.36	22.5	2
20	64QAM	1	49	21.10	21.04	20.91	21.11	21.44		
20	64QAM	1	99	21.04	21.14	20.96	21.09	21.41		
20	64QAM	50	0	20.31	20.45	20.21	20.32	20.64	21.5	3
20	64QAM	50	24	20.35	20.29	20.21	20.33	20.59		
20	64QAM	50	50	20.38	20.37	20.23	20.34	20.46		
20	64QAM	100	0	20.22	20.25	20.19	20.36	20.50		
Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5		
15	QPSK	1	0	22.84	22.99	22.85	23.00	23.07	24.5	0
15	QPSK	1	37	22.72	22.75	22.98	23.21	23.12		
15	QPSK	1	74	22.58	22.72	22.68	22.78	22.82		
15	QPSK	36	0	22.22	22.43	22.26	22.30	22.53	23.5	1
15	QPSK	36	20	22.32	22.23	22.19	22.28	22.53		
15	QPSK	36	39	21.78	21.88	21.85	21.94	22.29		
15	QPSK	75	0	22.08	22.13	22.09	22.15	22.45		
15	16QAM	1	0	22.01	22.06	21.88	22.15	22.57	23.5	1
15	16QAM	1	37	22.19	22.34	21.95	22.30	22.51		
15	16QAM	1	74	21.59	21.74	21.75	21.92	21.92		
15	16QAM	36	0	21.24	21.23	21.24	21.21	21.48	22.5	2
15	16QAM	36	20	21.21	21.40	21.18	21.28	21.55		
15	16QAM	36	39	20.78	21.05	20.85	20.84	21.21		
15	16QAM	75	0	21.21	21.17	21.02	21.09	21.40		
15	64QAM	1	0	20.59	20.69	20.64	20.56	20.96	22.5	2
15	64QAM	1	37	20.69	20.65	20.90	20.81	21.03		
15	64QAM	1	74	20.52	20.67	20.60	20.52	20.52		
15	64QAM	36	0	20.28	20.34	20.09	20.25	20.49	21.5	3
15	64QAM	36	20	20.17	20.37	20.22	20.24	20.60		
15	64QAM	36	39	19.91	20.06	19.79	19.88	20.14		
15	64QAM	75	0	20.03	20.17	20.14	20.22	20.32		
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	23.51	23.59	23.36	23.50	23.57	24.5	0
10	QPSK	1	25	23.49	23.51	23.32	23.66	23.52		
10	QPSK	1	49	23.38	23.59	23.43	23.74	23.70		
10	QPSK	25	0	22.15	22.70	22.31	22.63	22.70	23.5	1
10	QPSK	25	12	21.99	22.24	22.33	22.58	22.70		
10	QPSK	25	25	22.03	22.54	22.35	22.58	22.64		
10	QPSK	50	0	22.13	22.27	22.39	22.61	22.68		
10	16QAM	1	0	22.71	22.55	22.63	22.96	22.99	23.5	1
10	16QAM	1	25	22.19	22.61	22.42	22.64	22.80		
10	16QAM	1	49	22.39	22.37	22.32	22.84	22.81		
10	16QAM	25	0	21.21	21.37	21.36	21.71	21.69	22.5	2
10	16QAM	25	12	21.18	21.24	21.28	21.56	21.59		
10	16QAM	25	25	21.07	21.22	21.23	21.54	21.62		
10	16QAM	50	0	21.09	21.32	21.45	21.57	21.66		
10	64QAM	1	0	21.29	21.25	21.21	21.47	21.78	22.5	2
10	64QAM	1	25	20.88	20.95	21.09	21.35	21.57		
10	64QAM	1	49	21.06	20.95	21.09	21.45	21.42		
10	64QAM	25	0	20.26	20.34	20.30	20.65	20.64	21.5	3
10	64QAM	25	12	20.20	20.44	20.32	20.62	20.53		
10	64QAM	25	25	20.23	20.26	20.36	20.49	20.59		
10	64QAM	50	0	20.21	20.34	20.34	20.58	20.50		
Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5		
5	QPSK	1	0	23.36	23.64	23.42	23.55	23.46	24.5	0
5	QPSK	1	12	23.24	23.50	23.19	23.44	23.29		
5	QPSK	1	24	23.09	23.66	23.25	23.51	23.58		
5	QPSK	12	0	22.16	22.25	22.24	22.55	22.58	23.5	1
5	QPSK	12	7	22.07	22.36	22.24	22.52	22.62		
5	QPSK	12	13	22.10	22.26	22.12	22.46	22.61		
5	QPSK	25	0	22.12	22.22	22.27	22.54	22.65		
5	16QAM	1	0	22.43	22.55	22.53	22.66	22.65	23.5	1
5	16QAM	1	12	22.63	22.59	22.75	22.78	22.80		
5	16QAM	1	24	22.25	22.53	22.50	22.65	22.55		
5	16QAM	12	0	21.07	21.27	21.24	21.49	21.62	22.5	2
5	16QAM	12	7	21.09	21.29	21.24	21.44	21.64		
5	16QAM	12	13	21.02	21.11	21.23	21.49	21.54		
5	16QAM	25	0	21.09	21.22	21.34	21.54	21.63		
5	64QAM	1	0	20.94	21.37	21.12	21.43	21.43	22.5	2
5	64QAM	1	12	20.88	21.22	21.07	21.34	21.41		
5	64QAM	1	24	21.03	21.04	21.09	21.22	21.35		
5	64QAM	12	0	20.25	20.27	20.40	20.56	20.70	21.5	3
5	64QAM	12	7	19.98	20.19	20.40	20.59	20.63		
5	64QAM	12	13	20.07	20.17	20.29	20.44	20.42		
5	64QAM	25	0	20.15	20.25	20.38	20.49	20.60		

WWAN Top Antenna--Receiver on

GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GSM 1 Tx slot	30.32	30.51	30.47	31.50	21.32	21.51	21.47	22.50
GPRS 1 Tx slot	30.23	30.46	30.45	31.50	21.23	21.46	21.45	22.50
GPRS 2 Tx slots	28.34	28.45	28.30	29.50	22.34	22.45	22.30	23.50
GPRS 3 Tx slots	25.77	26.10	26.09	27.50	21.51	21.84	21.83	23.24
GPRS 4 Tx slots	25.13	25.53	25.52	26.50	22.13	22.53	22.52	23.50
EDGE(GMSK 1 Tx slot)	30.21	30.22	30.44	31.50	21.21	21.22	21.44	22.50
EDGE(GMSK 2 Tx slots)	28.32	28.42	28.65	29.50	22.32	22.42	22.65	23.50
EDGE(GMSK 3 Tx slots)	25.72	25.81	26.02	27.50	21.46	21.55	21.76	23.24
EDGE(GMSK 4 Tx slots)	25.09	25.28	25.47	26.50	22.09	22.28	22.47	23.50
EDGE(8PSK 1 Tx slot)	23.43	23.55	23.44	24.50	14.43	14.55	14.44	15.50
EDGE(8PSK 2 Tx slots)	21.32	21.36	21.28	23.00	15.32	15.36	15.28	17.00
EDGE(8PSK 3 Tx slots)	20.12	20.17	20.14	22.00	15.86	15.91	15.88	17.74
EDGE(8PSK 4 Tx slots)	19.43	19.42	19.37	21.00	16.43	16.42	16.37	18.00

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM 1 Tx slot	22.03	22.19	22.06	22.50	13.03	13.19	13.06	13.50
GPRS 1 Tx slot	22.02	22.18	22.02	22.50	13.02	13.18	13.02	13.50
GPRS 2 Tx slots	18.25	18.55	18.57	20.00	12.25	12.55	12.57	14.00
GPRS 3 Tx slots	17.77	17.93	17.78	19.00	13.51	13.67	13.52	14.74
GPRS 4 Tx slots	16.72	16.68	16.62	18.00	13.72	13.68	13.62	15.00
EDGE(GMSK 1 Tx slot)	22.01	22.12	22.00	22.50	13.01	13.12	13.00	13.50
EDGE(GMSK 2 Tx slots)	18.21	18.52	18.54	20.00	12.21	12.52	12.54	14.00
EDGE(GMSK 3 Tx slots)	17.72	17.87	17.74	19.00	13.46	13.61	13.48	14.74
EDGE(GMSK 4 Tx slots)	16.48	16.58	16.55	18.00	13.48	13.58	13.55	15.00
EDGE(8PSK 1 Tx slot)	18.02	18.19	18.10	19.50	9.02	9.19	9.10	10.50
EDGE(8PSK 2 Tx slots)	15.56	15.81	15.90	17.00	9.56	9.81	9.90	11.00
EDGE(8PSK 3 Tx slots)	14.24	14.31	14.10	15.50	9.98	10.05	9.84	11.24
EDGE(8PSK 4 Tx slots)	12.56	12.72	12.73	14.00	9.56	9.72	9.73	11.00

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)	WCDMA V			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel		9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
3GPP Rel 99	AMR 12.2Kbps	15.63	15.66	15.65	16.50	15.57	15.58	15.38	16.30	21.70	21.86	21.98	22.50
3GPP Rel 99	RMC 12.2Kbps	15.64	15.67	15.72	16.50	15.58	15.59	15.39	16.30	21.71	21.87	22.00	22.50
3GPP Rel 6	HSDPA Subtest-1	14.08	14.14	14.05	15.50	14.03	14.01	13.74	15.30	20.29	20.42	20.59	21.50
3GPP Rel 6	HSDPA Subtest-2	14.05	14.19	14.03	15.50	14.01	14.03	13.74	15.30	20.30	20.41	20.57	21.50
3GPP Rel 6	HSDPA Subtest-3	13.57	13.63	13.52	15.00	13.55	13.53	13.27	14.80	19.84	19.92	20.08	21.00
3GPP Rel 6	HSDPA Subtest-4	13.55	13.68	13.52	15.00	13.52	13.54	13.20	14.80	19.84	19.92	20.08	21.00
3GPP Rel 8	DC-HSDPA Subtest-1	14.15	14.08	14.10	15.50	14.10	14.14	14.03	15.30	20.21	20.26	20.37	21.50
3GPP Rel 8	DC-HSDPA Subtest-2	14.14	14.09	14.11	15.50	14.09	14.13	14.04	15.30	20.20	20.25	20.35	21.50
3GPP Rel 8	DC-HSDPA Subtest-3	13.49	13.48	13.59	15.00	13.38	13.43	13.30	14.80	19.71	19.80	19.91	21.00
3GPP Rel 8	DC-HSDPA Subtest-4	13.48	13.46	13.58	15.00	13.39	13.42	13.29	14.80	19.72	19.81	19.89	21.00
3GPP Rel 6	HSUPA Subtest-1	11.56	11.56	11.64	13.00	11.54	11.58	11.44	12.80	20.29	20.34	20.59	21.50
3GPP Rel 6	HSUPA Subtest-2	9.65	9.58	9.66	11.00	9.64	9.69	9.58	10.80	18.27	18.35	18.47	19.50
3GPP Rel 6	HSUPA Subtest-3	10.69	10.59	10.62	12.00	10.73	10.80	10.64	11.80	19.12	19.31	19.02	20.50
3GPP Rel 6	HSUPA Subtest-4	9.84	9.59	9.59	11.00	9.88	9.98	9.69	10.80	18.25	18.34	18.20	19.50
3GPP Rel 6	HSUPA Subtest-5	11.50	11.60	11.70	13.00	11.90	11.80	11.70	12.80	20.30	20.20	20.60	21.50
3GPP Rel 7	HSPA+ (16QAM) Subtest-1	9.45	9.49	9.58	10.50	9.47	9.55	9.46	10.30	17.36	17.47	17.58	19.00

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				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	16.15	16.19	16.21		
20	QPSK	1	49	16.17	16.26	16.25	16.6	0
20	QPSK	1	99	15.95	15.96	15.81		
20	QPSK	50	0	15.99	16.21	16.18		
20	QPSK	50	24	16.02	16.05	16.17	16.6	0
20	QPSK	50	50	15.95	15.89	15.96		
20	QPSK	100	0	15.97	16.15	16.12		
20	16QAM	1	0	16.14	16.17	16.07		
20	16QAM	1	49	15.83	16.19	16.02	16.6	0
20	16QAM	1	99	16.02	15.90	16.16		
20	16QAM	50	0	15.98	16.01	16.19		
20	16QAM	50	24	16.01	15.98	16.13	16.6	0
20	16QAM	50	50	15.97	15.92	15.89		
20	16QAM	100	0	15.95	16.01	16.15		
20	64QAM	1	0	16.02	16.07	16.07		
20	64QAM	1	49	16.01	15.95	15.88	16.6	0
20	64QAM	1	99	15.98	16.08	15.97		
20	64QAM	50	0	16.01	16.03	16.15		
20	64QAM	50	24	15.99	15.98	16.17	16.6	0
20	64QAM	50	50	15.93	15.89	15.94		
20	64QAM	100	0	15.96	16.04	16.17		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	16.18	16.24	15.89		
15	QPSK	1	37	15.81	15.73	15.69	16.6	0
15	QPSK	1	74	15.89	16.19	16.15		
15	QPSK	36	0	15.94	15.88	16.03		
15	QPSK	36	20	15.88	15.80	16.04	16.6	0
15	QPSK	36	39	15.95	15.88	16.05		
15	QPSK	75	0	16.00	15.87	16.09		
15	16QAM	1	0	16.17	16.13	16.05		
15	16QAM	1	37	15.92	16.14	16.08	16.6	0
15	16QAM	1	74	15.90	16.00	16.07		
15	16QAM	36	0	15.98	15.89	16.08		
15	16QAM	36	20	15.94	15.78	16.11	16.6	0
15	16QAM	36	39	15.94	15.87	16.12		
15	16QAM	75	0	16.00	15.81	16.08		
15	64QAM	1	0	15.94	16.06	16.19		
15	64QAM	1	37	15.80	15.79	16.06	16.6	0
15	64QAM	1	74	16.09	16.01	15.92		
15	64QAM	36	0	15.95	15.89	16.11		
15	64QAM	36	20	15.93	15.77	16.06	16.6	0
15	64QAM	36	39	15.95	15.87	16.08		
15	64QAM	75	0	16.00	15.84	16.01		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	15.99	15.97	15.84		
10	QPSK	1	25	15.93	15.78	15.92	16.6	0
10	QPSK	1	49	15.96	15.90	16.01		
10	QPSK	25	0	16.01	15.88	16.07		
10	QPSK	25	12	16.06	15.80	16.03	16.6	0
10	QPSK	25	25	16.00	15.78	16.06		
10	QPSK	50	0	15.97	15.89	16.10		
10	16QAM	1	0	16.05	16.00	16.08		
10	16QAM	1	25	16.01	16.22	16.09	16.6	0
10	16QAM	1	49	16.03	16.03	16.03		
10	16QAM	25	0	15.98	15.89	16.05		
10	16QAM	25	12	16.02	15.77	16.05	16.6	0
10	16QAM	25	25	15.97	15.73	16.04		
10	16QAM	50	0	15.94	15.89	16.14		
10	64QAM	1	0	16.23	16.21	16.04		
10	64QAM	1	25	16.19	16.01	16.24	16.6	0
10	64QAM	1	49	15.89	16.18	16.05		
10	64QAM	25	0	15.96	15.87	16.02		
10	64QAM	25	12	16.04	15.74	16.03	16.6	0
10	64QAM	25	25	16.01	15.73	16.05		
10	64QAM	50	0	15.95	15.89	16.10		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	16.02	16.03	16.01		
5	QPSK	1	12	15.83	15.71	15.84	16.6	0
5	QPSK	1	24	15.92	15.80	15.86		
5	QPSK	12	0	16.03	15.92	15.98		
5	QPSK	12	7	15.91	15.82	15.90	16.6	0
5	QPSK	12	13	16.04	15.82	15.90		
5	QPSK	25	0	16.05	15.85	15.93		
5	16QAM	1	0	16.05	16.00	16.05		
5	16QAM	1	12	15.89	16.16	16.00	16.6	0
5	16QAM	1	24	15.89	16.10	15.89		
5	16QAM	12	0	16.02	15.98	16.00		
5	16QAM	12	7	15.97	15.89	15.97	16.6	0
5	16QAM	12	13	16.08	15.85	15.90		
5	16QAM	25	0	16.01	15.90	15.91		
5	64QAM	1	0	15.89	16.23	16.03		
5	64QAM	1	12	16.06	15.97	16.07	16.6	0
5	64QAM	1	24	16.20	15.92	16.03		
5	64QAM	12	0	16.01	15.91	16.01		
5	64QAM	12	7	15.95	15.85	16.02	16.6	0
5	64QAM	12	13	16.07	15.86	16.01		
5	64QAM	25	0	16.02	15.88	16.00		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	15.97	15.91	15.81		
3	QPSK	1	8	15.85	15.64	15.94	16.6	0
3	QPSK	1	14	15.78	15.78	15.84		
3	QPSK	8	0	15.94	15.88	15.77		
3	QPSK	8	4	15.90	15.75	15.87	16.6	0
3	QPSK	8	7	15.93	15.80	15.77		
3	QPSK	15	0	15.95	15.69	15.82		
3	16QAM	1	0	15.89	16.06	16.05		
3	16QAM	1	8	16.01	16.00	15.93	16.6	0
3	16QAM	1	14	15.93	16.08	16.19		
3	16QAM	8	0	16.01	15.95	15.98		
3	16QAM	8	4	15.95	15.75	16.05	16.6	0
3	16QAM	8	7	15.99	15.97	15.94		
3	16QAM	15	0	16.00	15.87	15.97		
3	64QAM	1	0	16.01	16.17	15.69		
3	64QAM	1	8	16.23	16.17	16.19	16.6	0
3	64QAM	1	14	16.22	15.98	16.14		
3	64QAM	8	0	15.88	15.80	15.94		
3	64QAM	8	4	16.10	15.70	15.83	16.6	0
3	64QAM	8	7	15.89	16.02	15.91		
3	64QAM	15	0	15.79	15.75	15.86		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	15.97	15.83	15.94		
1.4	QPSK	1	3	15.70	15.94	16.04	16.6	0
1.4	QPSK	1	5	15.71	15.87	15.64		
1.4	QPSK	3	0	15.87	15.89	15.80		
1.4	QPSK	3	1	15.94	15.87	15.79		
1.4	QPSK	3	3	15.82	15.75	15.80		
1.4	QPSK	6	0	15.87	15.82	15.73	16.6	0
1.4	16QAM	1	0	16.14	15.92	16.04		
1.4	16QAM	1	3	16.03	15.81	16.07	16.6	0
1.4	16QAM	1	5	15.92	16.18	16.23		
1.4	16QAM	3	0	16.08	15.81	15.90		
1.4	16QAM	3	1	16.04	15.71	16.02		
1.4	16QAM	3	3	16.00	15.86	15.79		
1.4	16QAM	6	0	15.77	15.73	15.79	16.6	0
1.4	64QAM	1	0	15.92	15.61	15.89		
1.4	64QAM	1	3	16.00	15.78	15.62	16.6	0
1.4	64QAM	1	5	15.50	15.89	15.82		
1.4	64QAM	3	0	15.94	15.70	15.99		
1.4	64QAM	3	1	16.04	15.86	15.78		
1.4	64QAM	3	3	16.03	15.79	15.99		
1.4	64QAM	6	0	16.02	15.82	15.84	16.6	0

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				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	16.03	16.25	16.15		
20	QPSK	1	49	15.90	15.97	16.02	16.6	0
20	QPSK	1	99	15.96	16.28	16.17		
20	QPSK	50	0	16.00	16.15	16.10		
20	QPSK	50	24	15.94	16.04	15.99	16.6	0
20	QPSK	50	50	16.07	16.14	16.12		
20	QPSK	100	0	16.02	16.16	16.05		
20	16QAM	1	0	16.21	15.98	16.24		
20	16QAM	1	49	16.11	15.87	15.80	16.6	0
20	16QAM	1	99	15.80	15.96	15.90		
20	16QAM	50	0	15.95	15.93	16.11		
20	16QAM	50	24	15.94	15.91	16.04	16.6	0
20	16QAM	50	50	15.93	16.17	16.13		
20	16QAM	100	0	16.11	16.20	16.09		
20	64QAM	1	0	15.80	15.87	15.89		
20	64QAM	1	49	15.67	15.67	16.15	16.6	0
20	64QAM	1	99	15.84	15.94	15.97		
20	64QAM	50	0	15.93	16.06	16.16		
20	64QAM	50	24	16.01	15.97	15.95	16.6	0
20	64QAM	50	50	15.99	16.00	16.14		
20	64QAM	100	0	15.99	16.08	16.14		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	16.19	15.86	16.24		
15	QPSK	1	37	15.63	15.62	15.74	16.6	0
15	QPSK	1	74	15.80	15.70	15.81		
15	QPSK	36	0	15.98	15.97	15.99		
15	QPSK	36	20	15.86	15.76	15.90	16.6	0
15	QPSK	36	39	15.93	16.06	15.91		
15	QPSK	75	0	15.93	16.03	15.84		
15	16QAM	1	0	15.96	16.01	15.90		
15	16QAM	1	37	15.70	15.95	16.08	16.6	0
15	16QAM	1	74	15.99	16.01	15.97		
15	16QAM	36	0	16.02	15.94	15.94		
15	16QAM	36	20	15.90	15.82	15.92	16.6	0
15	16QAM	36	39	15.96	15.97	15.94		
15	16QAM	75	0	15.98	15.93	15.87		
15	64QAM	1	0	16.01	15.89	15.88		
15	64QAM	1	37	15.81	15.89	16.06	16.6	0
15	64QAM	1	74	16.21	15.97	16.01		
15	64QAM	36	0	15.99	16.22	15.85		
15	64QAM	36	20	15.92	15.90	15.87	16.6	0
15	64QAM	36	39	15.93	16.06	15.94		
15	64QAM	75	0	15.98	15.98	15.92		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	16.06	16.23	16.18		
10	QPSK	1	25	15.88	15.83	15.80	16.6	0
10	QPSK	1	49	16.16	15.91	16.13		
10	QPSK	25	0	15.82	15.89	16.12		
10	QPSK	25	12	15.96	16.02	15.96	16.6	0
10	QPSK	25	25	15.98	15.95	16.01		
10	QPSK	50	0	15.89	15.97	16.12		
10	16QAM	1	0	15.96	16.06	16.03		
10	16QAM	1	25	16.06	16.07	16.23	16.6	0
10	16QAM	1	49	15.90	16.05	15.91		
10	16QAM	25	0	15.77	16.05	16.07		
10	16QAM	25	12	15.86	16.08	16.06	16.6	0
10	16QAM	25	25	15.98	16.03	15.99		
10	16QAM	50	0	15.84	15.92	16.14		
10	64QAM	1	0	15.87	15.80	16.08		
10	64QAM	1	25	16.13	15.97	16.16	16.6	0
10	64QAM	1	49	15.90	15.80	15.91		
10	64QAM	25	0	15.81	15.97	16.11		
10	64QAM	25	12	15.91	15.92	16.13	16.6	0
10	64QAM	25	25	16.05	16.06	16.03		
10	64QAM	50	0	15.93	16.01	16.07		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	16.00	16.08	15.95		
5	QPSK	1	12	15.79	15.86	15.86	16.6	0
5	QPSK	1	24	15.75	15.90	16.04		
5	QPSK	12	0	15.81	16.01	16.18		
5	QPSK	12	7	15.80	15.91	16.05	16.6	0
5	QPSK	12	13	15.81	15.90	15.99		
5	QPSK	25	0	15.84	15.94	16.14		
5	16QAM	1	0	15.89	15.97	16.02		
5	16QAM	1	12	15.80	15.95	15.91	16.6	0
5	16QAM	1	24	15.87	16.15	16.00		
5	16QAM	12	0	15.93	16.08	16.17		
5	16QAM	12	7	15.89	15.96	16.03	16.6	0
5	16QAM	12	13	15.82	15.98	16.01		
5	16QAM	25	0	15.78	15.78	16.01		
5	64QAM	1	0	16.21	15.97	15.88		
5	64QAM	1	12	15.87	16.16	15.86	16.6	0
5	64QAM	1	24	15.80	16.10	16.07		
5	64QAM	12	0	15.94	15.92	16.06		
5	64QAM	12	7	15.86	16.03	16.04	16.6	0
5	64QAM	12	13	15.87	15.92	16.13		
5	64QAM	25	0	15.82	15.85	15.91		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	15.94	15.97	15.98		
3	QPSK	1	8	15.82	15.92	16.01	16.6	0
3	QPSK	1	14	15.82	15.92	15.89		
3	QPSK	8	0	15.84	15.97	16.01		
3	QPSK	8	4	15.84	15.94	16.04	16.6	0
3	QPSK	8	7	15.85	15.94	16.00		
3	QPSK	15	0	15.81	16.02	15.91		
3	16QAM	1	0	16.11	16.16	15.91		
3	16QAM	1	8	15.80	15.96	15.90	16.6	0
3	16QAM	1	14	16.24	16.24	15.98		
3	16QAM	8	0	15.76	15.90	16.07		
3	16QAM	8	4	15.95	16.02	15.97	16.6	0
3	16QAM	8	7	15.93	15.85	16.07		
3	16QAM	15	0	15.83	16.01	15.98		
3	64QAM	1	0	15.85	16.23	15.85		
3	64QAM	1	8	15.63	15.70	15.80	16.6	0
3	64QAM	1	14	16.17	15.82	16.12		
3	64QAM	8	0	15.80	15.94	15.98		
3	64QAM	8	4	15.96	15.94	15.92	16.6	0
3	64QAM	8	7	15.87	15.99	16.21		
3	64QAM	15	0	15.90	15.95	15.98		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	15.83	15.79	15.94		
1.4	QPSK	1	3	15.90	15.92	16.09	16.6	0
1.4	QPSK	1	5	15.50	15.94	16.05		
1.4	QPSK	3	0	15.73	16.00	15.97		
1.4	QPSK	3	1	15.86	15.94	16.05		
1.4	QPSK	3	3	15.81	15.94	15.99		
1.4	QPSK	6	0	15.71	15.91	15.96	16.6	0
1.4	16QAM	1	0	15.84	15.92	16.16		
1.4	16QAM	1	3	16.02	16.02	16.03	16.6	0
1.4	16QAM	1	5	15.62	15.96	16.08		
1.4	16QAM	3	0	15.72	16.12	16.08		
1.4	16QAM	3	1	15.80	16.01	16.17		
1.4	16QAM	3	3	15.64	16.05	16.09		
1.4	16QAM	6	0	15.71	16.02	16.00	16.6	0
1.4	64QAM	1	0	15.72	16.16	15.92		
1.4	64QAM	1	3	15.86	16.06	15.81	16.6	0
1.4	64QAM	1	5	15.88	15.80	16.19		
1.4	64QAM	3	0	15.70	16.04	16.10		
1.4	64QAM	3	1	15.99	16.16	16.12		
1.4	64QAM	3	3	15.93	16.01	16.04		
1.4	64QAM	6	0	15.69	15.91	16.12	16.6	0

Band 5 (Celluar Band)
Part 22H(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				20450	20525	20600		
Frequency (MHz)				829	836.5	844		
10	QPSK	1	0	21.82	21.81	21.74		
10	QPSK	1	25	21.62	21.54	21.54	22.3	0
10	QPSK	1	49	21.88	21.85	21.77		
10	QPSK	25	0	21.72	21.65	21.61		
10	QPSK	25	12	21.59	21.59	21.70	22.3	0
10	QPSK	25	25	21.69	21.64	21.61		
10	QPSK	50	0	21.71	21.59	21.68		
10	16QAM	1	0	21.73	21.73	21.76		
10	16QAM	1	25	21.61	21.79	21.60	22.3	0
10	16QAM	1	49	21.61	21.77	21.74		
10	16QAM	25	0	21.56	21.75	21.62		
10	16QAM	25	12	21.59	21.60	21.66	22.3	0
10	16QAM	25	25	21.68	21.64	21.61		
10	16QAM	50	0	21.78	21.65	21.61		
10	64QAM	1	0	21.61	21.69	21.61		
10	64QAM	1	25	21.72	21.78	21.66	22.3	0
10	64QAM	1	49	21.75	21.72	21.77		
10	64QAM	25	0	21.17	21.31	21.44		
10	64QAM	25	12	21.13	21.37	21.39	21.8	0.5
10	64QAM	25	25	21.23	21.42	21.48		
10	64QAM	50	0	21.19	21.35	21.54		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	21.65	21.57	21.69		
5	QPSK	1	12	21.54	21.52	21.54	22.3	0
5	QPSK	1	24	21.59	21.67	21.54		
5	QPSK	12	0	21.59	21.55	21.64		
5	QPSK	12	7	21.53	21.50	21.58	22.3	0
5	QPSK	12	13	21.57	21.71	21.62		
5	QPSK	25	0	21.63	21.53	21.52		
5	16QAM	1	0	21.57	21.52	21.63		
5	16QAM	1	12	21.71	21.66	21.73	22.3	0
5	16QAM	1	24	21.61	21.65	21.61		
5	16QAM	12	0	21.62	21.64	21.54		
5	16QAM	12	7	21.60	21.56	21.56	22.3	0
5	16QAM	12	13	21.65	21.51	21.64		
5	16QAM	25	0	21.72	21.73	21.60		
5	64QAM	1	0	21.59	21.61	21.54		
5	64QAM	1	12	21.63	21.79	21.60	22.3	0
5	64QAM	1	24	21.63	21.59	21.65		
5	64QAM	12	0	21.16	21.30	21.47		
5	64QAM	12	7	21.10	21.26	21.39	21.8	0.5
5	64QAM	12	13	21.01	21.23	21.47		
5	64QAM	25	0	21.12	21.33	21.35		
Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	21.63	21.60	21.60		
3	QPSK	1	8	21.64	21.49	21.66	22.3	0
3	QPSK	1	14	21.57	21.56	21.61		
3	QPSK	8	0	21.54	21.65	21.61		
3	QPSK	8	4	21.65	21.59	21.60	22.3	0
3	QPSK	8	7	21.60	21.56	21.61		
3	QPSK	15	0	21.61	21.59	21.60		
3	16QAM	1	0	21.61	21.69	21.61		
3	16QAM	1	8	21.53	21.62	21.79	22.3	0
3	16QAM	1	14	21.61	21.79	21.60		
3	16QAM	8	0	21.68	21.56	21.61		
3	16QAM	8	4	21.57	21.60	21.61	22.3	0
3	16QAM	8	7	21.70	21.69	21.64		
3	16QAM	15	0	21.63	21.52	21.54		
3	64QAM	1	0	21.55	21.61	21.68		
3	64QAM	1	8	21.58	21.73	21.53	22.3	0
3	64QAM	1	14	21.62	21.61	21.63		
3	64QAM	8	0	21.54	21.55	21.69		
3	64QAM	8	4	21.60	21.78	21.63	21.8	0.5
3	64QAM	8	7	21.51	21.77	21.54		
3	64QAM	15	0	21.62	21.56	21.62		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	21.60	21.46	21.65		
1.4	QPSK	1	3	21.61	21.59	21.71	22.3	0
1.4	QPSK	1	5	21.59	21.78	21.51		
1.4	QPSK	3	0	21.56	21.77	21.57		
1.4	QPSK	3	1	21.67	21.79	21.68		
1.4	QPSK	3	3	21.54	21.72	21.58		
1.4	QPSK	6	0	21.64	21.74	21.61	22.3	0
1.4	16QAM	1	0	21.75	21.56	21.71		
1.4	16QAM	1	3	21.61	21.66	21.61	22.3	0
1.4	16QAM	1	5	21.49	21.51	21.59		
1.4	16QAM	3	0	21.61	21.58	21.60		
1.4	16QAM	3	1	21.52	21.50	21.76		
1.4	16QAM	3	3	21.44	21.61	21.52		
1.4	16QAM	6	0	21.77	21.73	21.58	22.3	0
1.4	64QAM	1	0	21.55	21.73	21.70		
1.4	64QAM	1	3	21.59	21.58	21.78	22.3	0
1.4	64QAM	1	5	21.60	21.62	21.67		
1.4	64QAM	3	0	21.78	21.76	21.57		
1.4	64QAM	3	1	21.60	21.79	21.61		
1.4	64QAM	3	3	21.60	21.61	21.60		
1.4	64QAM	6	0	21.09	21.22	21.34	21.8	0.5

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	17.51	17.96	17.85	18.5	0
20	QPSK	1	49	17.57	17.67	17.71		
20	QPSK	1	99	17.80	17.88	17.93		
20	QPSK	50	0	17.76	17.94	17.88	18.5	0
20	QPSK	50	24	17.79	17.81	17.89		
20	QPSK	50	50	17.88	17.90	17.91		
20	QPSK	100	0	17.72	17.75	17.42		
20	16QAM	1	0	17.52	17.44	17.51	18.5	0
20	16QAM	1	49	17.49	17.57	17.40		
20	16QAM	1	99	17.41	17.54	17.32		
20	16QAM	50	0	17.64	17.86	17.78	18.5	0
20	16QAM	50	24	17.86	17.85	17.85		
20	16QAM	50	50	17.75	17.85	17.75		
20	16QAM	100	0	17.80	17.64	17.33		
20	64QAM	1	0	17.87	17.49	17.58	18.5	0
20	64QAM	1	49	17.78	17.91	17.51		
20	64QAM	1	99	17.48	17.91	17.86		
20	64QAM	50	0	17.78	17.82	17.81	18.5	0
20	64QAM	50	24	17.75	17.88	17.82		
20	64QAM	50	50	17.82	17.91	17.88		
20	64QAM	100	0	17.73	17.89	17.74		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	17.41	17.82	17.86	18.5	0
15	QPSK	1	37	17.47	17.39	17.76		
15	QPSK	1	74	17.80	17.81	17.63		
15	QPSK	36	0	17.67	17.77	17.30	18.5	0
15	QPSK	36	20	17.73	17.53	17.53		
15	QPSK	36	39	17.73	17.58	17.30		
15	QPSK	75	0	17.77	17.86	17.94		
15	16QAM	1	0	17.73	17.52	17.59	18.5	0
15	16QAM	1	37	17.50	17.42	17.52		
15	16QAM	1	74	17.90	17.58	17.65		
15	16QAM	36	0	17.59	17.77	17.93	18.5	0
15	16QAM	36	20	17.75	17.84	17.86		
15	16QAM	36	39	17.69	17.82	17.92		
15	16QAM	75	0	17.61	17.80	17.68		
15	64QAM	1	0	17.45	17.50	17.64	18.5	0
15	64QAM	1	37	17.72	17.55	17.49		
15	64QAM	1	74	17.45	17.74	17.47		
15	64QAM	36	0	17.77	17.82	17.44	18.5	0
15	64QAM	36	20	17.68	17.88	17.83		
15	64QAM	36	39	17.74	17.84	17.77		
15	64QAM	75	0	17.62	17.82	17.86		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	17.78	17.76	17.33	18.5	0
10	QPSK	1	25	17.49	17.74	17.78		
10	QPSK	1	49	17.74	17.76	17.65		
10	QPSK	25	0	17.59	17.84	17.81	18.5	0
10	QPSK	25	12	17.50	17.63	17.78		
10	QPSK	25	25	17.70	17.84	17.85		
10	QPSK	50	0	17.80	17.72	17.90		
10	16QAM	1	0	17.43	17.57	17.58	18.5	0
10	16QAM	1	25	17.79	17.79	17.39		
10	16QAM	1	49	17.79	17.68	17.62		
10	16QAM	25	0	17.55	17.79	17.79	18.5	0
10	16QAM	25	12	17.41	17.62	17.72		
10	16QAM	25	25	17.70	17.83	17.73		
10	16QAM	50	0	17.76	17.72	17.76		
10	64QAM	1	0	17.44	17.52	17.53	18.5	0
10	64QAM	1	25	17.69	17.69	17.46		
10	64QAM	1	49	17.38	17.47	17.66		
10	64QAM	25	0	17.73	17.82	17.87	18.5	0
10	64QAM	25	12	17.50	17.66	17.79		
10	64QAM	25	25	17.72	17.85	17.84		
10	64QAM	50	0	17.77	17.68	17.84		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	17.53	17.82	17.89	18.5	0
5	QPSK	1	12	17.43	17.68	17.70		
5	QPSK	1	24	17.46	17.72	17.75		
5	QPSK	12	0	17.62	17.71	17.80	18.5	0
5	QPSK	12	7	17.57	17.76	17.79		
5	QPSK	12	13	17.55	17.76	17.80		
5	QPSK	25	0	17.68	17.70	17.81		
5	16QAM	1	0	17.68	17.68	17.51	18.5	0
5	16QAM	1	12	17.64	17.51	17.65		
5	16QAM	1	24	17.36	17.71	17.53		
5	16QAM	12	0	17.56	17.81	17.91	18.5	0
5	16QAM	12	7	17.61	17.67	17.85		
5	16QAM	12	13	17.48	17.79	17.90		
5	16QAM	25	0	17.59	17.75	17.72		
5	64QAM	1	0	17.32	17.66	17.54	18.5	0
5	64QAM	1	12	17.31	17.42	17.66		
5	64QAM	1	24	17.64	17.64	17.65		
5	64QAM	12	0	17.61	17.78	17.91	18.5	0
5	64QAM	12	7	17.82	17.84	17.83		
5	64QAM	12	13	17.66	17.76	17.92		
5	64QAM	25	0	17.69	17.69	17.82		

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	23.31	23.31	23.32	24.5	0
10	QPSK	1	25	23.34	23.57	23.43		
10	QPSK	1	49	23.38	23.68	23.56		
10	QPSK	25	0	22.18	22.37	22.27	23.5	1
10	QPSK	25	12	22.26	22.26	22.30		
10	QPSK	25	25	22.26	22.24	22.25		
10	QPSK	50	0	22.29	22.35	22.32		
10	16QAM	1	0	22.79	22.65	22.31	23.5	1
10	16QAM	1	25	22.29	22.64	22.60		
10	16QAM	1	49	22.60	22.85	22.60		
10	16QAM	25	0	21.29	21.30	21.31	22.5	2
10	16QAM	25	12	21.22	21.27	21.39		
10	16QAM	25	25	21.24	21.28	21.34		
10	16QAM	50	0	21.32	21.27	21.44		
10	64QAM	1	0	21.61	21.46	21.58	22.5	2
10	64QAM	1	25	22.00	21.50	21.39		
10	64QAM	1	49	21.54	21.78	21.82		
10	64QAM	25	0	20.29	20.25	20.25	21.5	3
10	64QAM	25	12	20.31	20.29	20.32		
10	64QAM	25	25	20.29	20.26	20.29		
10	64QAM	50	0	20.29	20.26	20.29		
Channel				23035	23095	23155	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				701.5	707.5	713.5		
5	QPSK	1	0	23.07	23.24	23.11	24.5	0
5	QPSK	1	12	23.15	23.15	23.13		
5	QPSK	1	24	23.19	23.23	23.24		
5	QPSK	12	0	22.20	22.22	22.21	23.5	1
5	QPSK	12	7	22.15	22.16	22.20		
5	QPSK	12	13	22.17	22.18	22.32		
5	QPSK	25	0	22.17	22.15	22.24		
5	16QAM	1	0	22.36	22.77	22.84	23.5	1
5	16QAM	1	12	22.22	22.70	22.31		
5	16QAM	1	24	22.38	22.41	22.40		
5	16QAM	12	0	21.28	21.19	21.39	22.5	2
5	16QAM	12	7	21.24	21.12	21.25		
5	16QAM	12	13	21.23	21.22	21.26		
5	16QAM	25	0	21.31	21.16	21.24		
5	64QAM	1	0	21.27	21.48	21.49	22.5	2
5	64QAM	1	12	21.13	21.49	21.59		
5	64QAM	1	24	21.56	21.51	21.02		
5	64QAM	12	0	20.25	20.18	20.34	21.5	3
5	64QAM	12	7	20.29	20.35	20.25		
5	64QAM	12	13	20.25	20.13	20.27		
5	64QAM	25	0	20.21	20.27	20.24		
Channel				23025	23095	23165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				700.5	707.5	714.5		
3	QPSK	1	0	23.09	23.17	23.09	24.5	0
3	QPSK	1	8	23.15	23.27	23.17		
3	QPSK	1	14	23.11	23.20	23.22		
3	QPSK	8	0	22.14	22.23	22.18	23.5	1
3	QPSK	8	4	22.16	22.30	22.28		
3	QPSK	8	7	22.20	22.24	22.19		
3	QPSK	15	0	22.18	22.15	22.23		
3	16QAM	1	0	22.29	22.33	22.75	23.5	1
3	16QAM	1	8	22.37	22.68	22.82		
3	16QAM	1	14	22.57	22.68	22.61		
3	16QAM	8	0	21.24	21.25	21.16	22.5	2
3	16QAM	8	4	21.28	21.35	21.27		
3	16QAM	8	7	21.24	21.35	21.33		
3	16QAM	15	0	21.17	21.13	21.42		
3	64QAM	1	0	21.20	21.16	21.35	22.5	2
3	64QAM	1	8	21.51	21.29	21.50		
3	64QAM	1	14	21.35	21.43	21.04		
3	64QAM	8	0	20.20	20.29	20.18	21.5	3
3	64QAM	8	4	20.23	20.31	20.29		
3	64QAM	8	7	20.35	20.22	20.37		
3	64QAM	15	0	20.18	20.11	20.16		
Channel				23017	23095	23173	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				699.7	707.5	715.3		
1.4	QPSK	1	0	22.93	23.00	22.98	24.5	0
1.4	QPSK	1	3	23.26	23.12	23.29		
1.4	QPSK	1	5	23.09	23.21	23.06		
1.4	QPSK	3	0	23.11	23.04	23.04		
1.4	QPSK	3	1	23.07	23.06	23.09		
1.4	QPSK	3	3	23.15	23.30	23.09		
1.4	QPSK	6	0	22.00	22.02	22.05	23.5	1
1.4	16QAM	1	0	22.55	22.67	22.54	23.5	1
1.4	16QAM	1	3	22.57	22.49	22.08		
1.4	16QAM	1	5	22.17	22.26	22.15		
1.4	16QAM	3	0	22.13	21.97	22.13		
1.4	16QAM	3	1	22.18	22.09	22.17		
1.4	16QAM	3	3	21.93	22.23	22.09		
1.4	16QAM	6	0	21.23	21.18	21.22	22.5	2
1.4	64QAM	1	0	21.31	20.91	21.47	22.5	2
1.4	64QAM	1	3	21.36	21.29	21.50		
1.4	64QAM	1	5	21.36	21.12	21.34		
1.4	64QAM	3	0	21.35	21.27	21.28		
1.4	64QAM	3	1	20.96	21.28	21.42		
1.4	64QAM	3	3	21.33	21.20	21.13		
1.4	64QAM	6	0	20.05	20.01	20.06	21.5	3

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				23780	23790	23800		
Frequency (MHz)				709	710	711		
10	QPSK	1	0	23.21	23.07	23.27	24.5	0
10	QPSK	1	25	23.05	23.32	23.18		
10	QPSK	1	49	23.39	23.43	23.31		
10	QPSK	25	0	22.10	22.12	22.12	23.5	1
10	QPSK	25	12	22.12	22.05	22.08		
10	QPSK	25	25	22.15	22.16	22.11		
10	QPSK	50	0	22.14	22.16	22.12		
10	16QAM	1	0	22.41	22.32	22.27	23.5	1
10	16QAM	1	25	22.44	22.05	22.20		
10	16QAM	1	49	22.49	22.47	22.90		
10	16QAM	25	0	21.17	21.07	21.15	22.5	2
10	16QAM	25	12	21.11	21.08	21.08		
10	16QAM	25	25	21.16	21.21	21.03		
10	16QAM	50	0	21.07	21.13	21.19		
10	64QAM	1	0	21.61	21.47	21.60	22.5	2
10	64QAM	1	25	21.26	21.35	20.91		
10	64QAM	1	49	21.57	21.60	21.39		
10	64QAM	25	0	20.09	20.12	20.16	21.5	3
10	64QAM	25	12	20.15	20.16	20.14		
10	64QAM	25	25	20.19	20.09	20.12		
10	64QAM	50	0	20.15	20.06	20.11		
Channel				23755	23790	23825	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				706.5	710	713.5		
5	QPSK	1	0	22.98	23.05	23.06	24.5	0
5	QPSK	1	12	23.03	22.94	23.00		
5	QPSK	1	24	23.02	23.15	23.02		
5	QPSK	12	0	21.95	22.02	22.03	23.5	1
5	QPSK	12	7	22.06	22.11	22.03		
5	QPSK	12	13	22.07	22.04	22.14		
5	QPSK	25	0	22.04	22.15	22.07		
5	16QAM	1	0	22.57	22.42	22.28	23.5	1
5	16QAM	1	12	22.45	22.62	22.26		
5	16QAM	1	24	22.60	22.55	22.64		
5	16QAM	12	0	20.92	21.06	21.13	22.5	2
5	16QAM	12	7	21.13	21.19	21.12		
5	16QAM	12	13	21.14	21.12	21.20		
5	16QAM	25	0	20.99	20.99	20.98		
5	64QAM	1	0	21.41	21.37	21.29	22.5	2
5	64QAM	1	12	21.31	21.21	21.08		
5	64QAM	1	24	21.14	20.91	21.20		
5	64QAM	12	0	20.04	20.06	20.16	21.5	3
5	64QAM	12	7	20.18	20.10	20.13		
5	64QAM	12	13	20.22	20.10	20.14		
5	64QAM	25	0	19.97	20.10	19.90		

Band 26 for FCC
(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				26765	26865	26965		
Frequency (MHz)				821.5	831.5	841.5		
15	QPSK	1	0	20.52	20.69	20.68		
15	QPSK	1	37	20.43	20.61	20.56	21.3	0
15	QPSK	1	74	20.24	20.49	20.57		
15	QPSK	36	0	20.55	20.60	20.51		
15	QPSK	36	20	20.56	20.67	20.55	21.3	0
15	QPSK	36	39	20.40	20.51	20.57		
15	QPSK	75	0	20.40	20.55	20.50		
15	16QAM	1	0	20.31	20.62	20.26		
15	16QAM	1	37	20.57	20.43	20.32	21.3	0
15	16QAM	1	74	20.32	20.24	20.43		
15	16QAM	36	0	20.46	20.27	20.60		
15	16QAM	36	20	20.49	20.43	20.53	21.3	0
15	16QAM	36	39	20.66	20.62	20.43		
15	16QAM	75	0	20.52	20.61	20.53		
15	64QAM	1	0	20.29	20.60	20.59		
15	64QAM	1	37	20.50	20.29	20.47	21.3	0
15	64QAM	1	74	20.32	20.24	20.60		
15	64QAM	36	0	19.96	20.35	20.14		
15	64QAM	36	20	19.96	20.36	20.20	21.3	0
15	64QAM	36	39	20.25	20.16	20.24		
15	64QAM	75	0	20.04	20.24	20.11		
Channel				26740	26865	26990	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				819	831.5	844		
10	QPSK	1	0	20.59	20.62	20.56		
10	QPSK	1	25	20.36	20.57	20.40	21.3	0
10	QPSK	1	49	20.42	20.29	20.28		
10	QPSK	25	0	20.57	20.60	20.25		
10	QPSK	25	12	20.63	20.42	20.24	21.3	0
10	QPSK	25	25	20.52	20.65	20.25		
10	QPSK	50	0	20.65	20.57	20.52		
10	16QAM	1	0	20.39	20.32	20.32		
10	16QAM	1	25	20.52	20.58	20.32	21.3	0
10	16QAM	1	49	20.65	20.32	20.24		
10	16QAM	25	0	20.56	20.60	20.29		
10	16QAM	25	12	20.58	20.52	20.23	21.3	0
10	16QAM	25	25	20.52	20.63	20.64		
10	16QAM	50	0	20.42	20.62	20.24		
10	64QAM	1	0	20.24	20.31	20.40		
10	64QAM	1	25	20.63	20.22	20.30	21.3	0
10	64QAM	1	49	20.26	20.41	20.40		
10	64QAM	25	0	19.95	20.27	20.42		
10	64QAM	25	12	20.13	20.27	20.42	21.3	0
10	64QAM	25	25	20.25	20.33	20.42		
10	64QAM	50	0	20.15	20.31	20.37		
Channel				26715	26965	27015	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				816.5	831.5	846.5		
5	QPSK	1	0	20.56	20.52	20.61		
5	QPSK	1	12	20.59	20.46	20.52	21.3	0
5	QPSK	1	24	20.58	20.59	20.42		
5	QPSK	12	0	20.52	20.58	20.42		
5	QPSK	12	7	20.58	20.42	20.62	21.3	0
5	QPSK	12	13	20.42	20.58	20.52		
5	QPSK	25	0	20.62	20.53	20.25		
5	16QAM	1	0	20.42	20.27	20.57		
5	16QAM	1	12	20.57	20.31	20.35	21.3	0
5	16QAM	1	24	20.63	20.52	20.38		
5	16QAM	12	0	20.54	20.52	20.22		
5	16QAM	12	7	20.52	20.54	20.52	21.3	0
5	16QAM	12	13	20.63	20.60	20.25		
5	16QAM	25	0	20.61	20.42	20.27		
5	64QAM	1	0	20.25	20.52	20.24		
5	64QAM	1	12	20.53	20.26	20.25	21.3	0
5	64QAM	1	24	20.42	20.29	20.29		
5	64QAM	12	0	20.24	20.17	20.42		
5	64QAM	12	7	20.22	20.23	20.36	21.3	0
5	64QAM	12	13	20.24	20.35	20.43		
5	64QAM	25	0	20.09	20.17	20.36		
Channel				26705	26865	27025	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				815.5	831.5	847.5		
3	QPSK	1	0	20.59	20.56	20.44		
3	QPSK	1	8	20.55	20.57	20.56	21.3	0
3	QPSK	1	14	20.51	20.24	20.44		
3	QPSK	8	0	20.63	20.54	20.65		
3	QPSK	8	4	20.44	20.64	20.44	21.3	0
3	QPSK	8	7	20.59	20.60	20.44		
3	QPSK	15	0	20.66	20.44	20.67		
3	16QAM	1	0	20.61	20.56	20.26		
3	16QAM	1	8	20.65	20.39	20.41	21.3	0
3	16QAM	1	14	20.27	20.30	20.42		
3	16QAM	8	0	20.44	20.54	20.62		
3	16QAM	8	4	20.57	20.44	20.28	21.3	0
3	16QAM	8	7	20.56	20.55	20.24		
3	16QAM	15	0	20.60	20.55	20.54		
3	64QAM	1	0	20.65	20.66	20.29		
3	64QAM	1	8	20.63	20.63	20.44	21.3	0
3	64QAM	1	14	20.65	20.32	20.44		
3	64QAM	8	0	20.14	20.15	20.35		
3	64QAM	8	4	20.11	20.24	20.48	21.3	0
3	64QAM	8	7	20.11	20.16	20.35		
3	64QAM	15	0	20.13	20.20	20.31		
Channel				26697	26865	27033	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				814.7	831.5	848.3		
1.4	QPSK	1	0	20.61	20.47	20.64		
1.4	QPSK	1	3	20.67	20.55	20.47		
1.4	QPSK	1	5	20.66	20.59	20.65	21.3	0
1.4	QPSK	3	0	20.66	20.60	20.65		
1.4	QPSK	3	1	20.67	20.44	20.64		
1.4	QPSK	3	3	20.67	20.67	20.44		
1.4	QPSK	6	0	20.64	20.58	20.62	21.3	0
1.4	16QAM	1	0	20.44	20.30	20.43		
1.4	16QAM	1	3	20.64	20.60	20.59		
1.4	16QAM	1	5	20.32	20.61	20.37	21.3	0
1.4	16QAM	3	0	20.57	20.57	20.44		
1.4	16QAM	3	1	20.54	20.57	20.27		
1.4	16QAM	3	3	20.54	20.54	20.28		
1.4	16QAM	6	0	20.67	20.65	20.32	21.3	0
1.4	64QAM	1	0	20.54	20.33	20.66		
1.4	64QAM	1	3	20.50	20.54	20.54		
1.4	64QAM	1	5	20.67	20.66	20.64	21.3	0
1.4	64QAM	3	0	20.44	20.56	20.33		
1.4	64QAM	3	1	20.61	20.44	20.25		
1.4	64QAM	3	3	20.60	20.54	20.27		
1.4	64QAM	6	0	20.10	20.13	20.29	21.3	0

Band 38(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				37850	38000	38150		
Frequency (MHz)				2580	2595	2610		
20	QPSK	1	0	19.93	19.85	19.82	20.5	0
20	QPSK	1	49	19.88	19.70	19.89		
20	QPSK	1	99	20.03	19.69	20.00		
20	QPSK	50	0	19.87	19.61	19.92	20.5	0
20	QPSK	50	24	19.92	19.57	19.91		
20	QPSK	50	50	19.93	19.89	19.88		
20	QPSK	100	0	19.89	19.81	19.88		
20	16QAM	1	0	20.00	19.94	19.98	20.5	0
20	16QAM	1	49	19.95	19.88	19.97		
20	16QAM	1	99	19.92	19.73	19.77		
20	16QAM	50	0	19.82	19.62	19.88	20.5	0
20	16QAM	50	24	19.93	19.69	19.93		
20	16QAM	50	50	19.82	19.77	19.84		
20	16QAM	100	0	19.99	19.77	19.94		
20	64QAM	1	0	19.31	19.61	19.51	20.5	0
20	64QAM	1	49	19.61	19.22	19.41		
20	64QAM	1	99	19.44	19.14	19.37		
20	64QAM	50	0	19.93	19.65	19.83	20.5	0
20	64QAM	50	24	19.85	19.64	19.88		
20	64QAM	50	50	19.92	19.96	19.96		
20	64QAM	100	0	19.88	19.83	19.87		
Channel				37825	38000	38175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2577.5	2595	2612.5		
15	QPSK	1	0	19.88	19.95	19.93	20.5	0
15	QPSK	1	37	19.93	19.71	19.68		
15	QPSK	1	74	19.95	19.67	19.95		
15	QPSK	36	0	19.65	19.66	19.88	20.5	0
15	QPSK	36	20	19.92	19.69	19.94		
15	QPSK	36	39	19.87	19.86	19.96		
15	QPSK	75	0	19.94	19.69	19.95		
15	16QAM	1	0	19.93	19.82	19.91	20.5	0
15	16QAM	1	37	19.88	19.93	19.95		
15	16QAM	1	74	19.95	20.00	19.95		
15	16QAM	36	0	19.79	19.63	19.95	20.5	0
15	16QAM	36	20	19.96	19.61	19.86		
15	16QAM	36	39	19.93	19.92	19.98		
15	16QAM	75	0	19.92	19.74	19.81		
15	64QAM	1	0	19.77	19.61	19.81	20.5	0
15	64QAM	1	37	19.78	19.58	19.68		
15	64QAM	1	74	19.67	19.43	19.70		
15	64QAM	36	0	19.78	19.48	19.90	20.5	0
15	64QAM	36	20	19.86	19.69	19.84		
15	64QAM	36	39	19.89	19.86	19.82		
15	64QAM	75	0	19.89	19.82	19.86		
Channel				37800	38000	38200	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2575	2595	2615		
10	QPSK	1	0	19.95	19.95	19.95	20.5	0
10	QPSK	1	25	19.79	19.75	19.77		
10	QPSK	1	49	19.93	19.73	19.91		
10	QPSK	25	0	19.95	19.82	19.98	20.5	0
10	QPSK	25	12	19.89	19.76	19.80		
10	QPSK	25	25	19.94	19.93	19.91		
10	QPSK	50	0	19.74	19.84	19.80		
10	16QAM	1	0	19.94	19.93	19.98	20.5	0
10	16QAM	1	25	19.95	19.91	19.71		
10	16QAM	1	49	19.94	19.67	19.88		
10	16QAM	25	0	19.87	19.92	19.94	20.5	0
10	16QAM	25	12	19.98	19.82	19.75		
10	16QAM	25	25	19.94	19.76	19.99		
10	16QAM	50	0	19.74	19.95	19.75		
10	64QAM	1	0	19.99	19.87	19.74	20.5	0
10	64QAM	1	25	19.91	19.50	19.89		
10	64QAM	1	49	19.52	19.63	19.66		
10	64QAM	25	0	19.76	19.86	19.74	20.5	0
10	64QAM	25	12	19.98	19.75	19.75		
10	64QAM	25	25	19.73	19.80	19.92		
10	64QAM	50	0	19.74	19.89	19.77		
Channel				37775	38000	38225	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2572.5	2595	2617.5		
5	QPSK	1	0	19.94	19.95	19.96	20.5	0
5	QPSK	1	12	19.93	19.81	19.97		
5	QPSK	1	24	19.96	19.65	19.97		
5	QPSK	12	0	19.87	19.80	19.92	20.5	0
5	QPSK	12	7	19.98	19.80	19.93		
5	QPSK	12	13	19.82	19.79	19.93		
5	QPSK	25	0	19.71	19.82	19.97		
5	16QAM	1	0	19.92	19.80	19.95	20.5	0
5	16QAM	1	12	19.93	19.74	19.76		
5	16QAM	1	24	19.92	19.85	19.99		
5	16QAM	12	0	20.00	19.70	19.91	20.5	0
5	16QAM	12	7	19.93	19.83	19.80		
5	16QAM	12	13	20.00	19.88	19.77		
5	16QAM	25	0	19.93	19.83	19.77		
5	64QAM	1	0	19.72	19.49	19.99	20.5	0
5	64QAM	1	12	19.78	19.52	19.74		
5	64QAM	1	24	19.77	19.64	19.87		
5	64QAM	12	0	19.89	19.98	20.00	20.5	0
5	64QAM	12	7	19.89	19.75	19.98		
5	64QAM	12	13	19.90	19.84	19.98		
5	64QAM	25	0	19.74	19.93	19.96		

Band 41 (2.6G Band)

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				39750	40185	40620	41055	41490		
Frequency (MHz)				2506	2549.5	2593	2636.5	2680		
20	QPSK	1	0	19.92	19.72	19.66	19.98	20.06	20.5	0
20	QPSK	1	49	19.74	19.97	19.72	19.87	19.94		
20	QPSK	1	99	19.89	19.99	19.83	19.92	20.02		
20	QPSK	50	0	19.84	19.75	19.74	19.89	20.01	20.5	0
20	QPSK	50	24	19.91	19.68	19.71	19.90	19.95		
20	QPSK	50	50	19.84	20.00	19.76	19.79	19.92		
20	QPSK	100	0	19.90	19.97	19.76	19.81	19.99		
20	16QAM	1	0	19.95	19.82	19.88	19.84	19.81	20.5	0
20	16QAM	1	49	20.03	19.88	19.96	19.85	19.88		
20	16QAM	1	99	19.93	19.84	19.83	19.83	19.83		
20	16QAM	50	0	19.92	19.70	19.82	19.80	19.80	20.5	0
20	16QAM	50	24	19.82	19.80	19.67	19.96	19.92		
20	16QAM	50	50	19.99	19.83	19.83	19.84	19.80		
20	16QAM	100	0	19.98	19.67	19.85	19.87	19.82		
20	64QAM	1	0	19.91	19.86	19.66	19.64	19.93	20.5	0
20	64QAM	1	49	19.68	19.71	19.69	19.63	19.92		
20	64QAM	1	99	19.69	19.95	19.51	19.69	19.67		
20	64QAM	50	0	19.29	19.45	19.32	19.22	19.58	20.5	0
20	64QAM	50	24	19.48	19.46	19.13	19.35	19.49		
20	64QAM	50	50	19.23	19.55	19.27	19.36	19.49		
20	64QAM	100	0	19.35	19.41	19.40	19.28	19.51		
Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5		
15	QPSK	1	0	19.56	19.43	19.42	19.41	19.87	20.5	0
15	QPSK	1	37	19.45	19.42	19.45	19.66	19.98		
15	QPSK	1	74	19.56	19.32	19.36	19.34	19.65		
15	QPSK	36	0	19.81	19.94	19.70	19.83	19.84	20.5	0
15	QPSK	36	20	19.84	19.72	19.79	19.82	20.00		
15	QPSK	36	39	19.35	19.51	19.45	19.51	19.68		
15	QPSK	75	0	19.56	19.74	19.61	19.65	19.89		
15	16QAM	1	0	19.60	19.77	19.46	19.78	19.82	20.5	0
15	16QAM	1	37	19.69	19.85	19.74	19.71	19.90		
15	16QAM	1	74	19.22	19.43	19.15	19.41	19.34		
15	16QAM	36	0	19.95	19.70	19.66	19.81	19.80	20.5	0
15	16QAM	36	20	19.68	19.69	19.81	19.68	19.97		
15	16QAM	36	39	19.44	19.56	19.41	19.48	19.82		
15	16QAM	75	0	19.56	19.76	19.56	19.65	19.82		
15	64QAM	1	0	19.34	19.50	19.14	19.30	19.52	20.5	0
15	64QAM	1	37	19.39	19.81	19.39	19.34	19.33		
15	64QAM	1	74	19.35	18.99	18.90	19.03	18.97		
15	64QAM	36	0	19.33	19.51	19.24	19.39	19.59	20.5	0
15	64QAM	36	20	19.37	19.45	19.19	19.38	19.49		
15	64QAM	36	39	18.84	18.84	18.91	19.05	19.05		
15	64QAM	75	0	19.24	19.31	19.12	19.11	19.31		
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	19.76	19.88	19.75	19.94	19.80	20.5	0
10	QPSK	1	25	19.28	19.63	19.40	19.54	19.88		
10	QPSK	1	49	19.54	19.61	19.50	19.81	19.90		
10	QPSK	25	0	19.37	19.61	19.39	19.72	19.63	20.5	0
10	QPSK	25	12	19.36	19.67	19.45	19.66	19.72		
10	QPSK	25	25	19.50	19.56	19.57	19.59	19.79		
10	QPSK	50	0	19.48	19.61	19.44	19.75	19.61		
10	16QAM	1	0	19.73	19.87	19.79	19.80	19.82	20.5	0
10	16QAM	1	25	19.43	19.57	19.46	19.96	19.92		
10	16QAM	1	49	19.63	19.88	19.87	20.01	19.75		
10	16QAM	25	0	19.47	19.56	19.48	19.86	19.91	20.5	0
10	16QAM	25	12	19.58	19.63	19.41	19.91	19.56		
10	16QAM	25	25	19.60	19.62	19.48	19.74	19.51		
10	16QAM	50	0	19.58	19.48	19.57	19.82	19.55		
10	64QAM	1	0	19.29	19.59	19.33	19.88	19.87	20.5	0
10	64QAM	1	25	19.15	19.65	19.35	19.52	19.63		
10	64QAM	1	49	19.20	19.44	19.04	19.67	19.65		
10	64QAM	25	0	19.04	19.38	18.94	19.42	19.34	20.5	0
10	64QAM	25	12	19.07	18.85	19.00	19.37	19.23		
10	64QAM	25	25	18.99	19.49	19.09	19.30	19.19		
10	64QAM	50	0	19.04	18.80	18.94	19.22	19.27		
Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5		
5	QPSK	1	0	19.48	20.04	19.59	19.86	19.85	20.5	0
5	QPSK	1	12	19.42	19.53	19.48	19.84	19.94		
5	QPSK	1	24	19.32	19.83	19.47	19.63	19.63		
5	QPSK	12	0	19.44	19.39	19.26	19.81	19.70	20.5	0
5	QPSK	12	7	19.37	19.54	19.36	19.71	19.55		
5	QPSK	12	13	19.41	19.44	19.28	19.63	19.65		
5	QPSK	25	0	19.43	19.56	19.41	19.66	19.56		
5	16QAM	1	0	19.90	19.59	19.53	19.87	19.98	20.5	0
5	16QAM	1	12	19.68	19.69	19.78	19.86	19.57		
5	16QAM	1	24	19.52	19.49	19.46	19.79	19.83		
5	16QAM	12	0	19.49	19.59	19.38	19.70	19.50	20.5	0
5	16QAM	12	7	19.44	19.59	19.38	19.70	19.91		
5	16QAM	12	13	19.37	19.64	19.27	19.75	19.47		
5	16QAM	25	0	19.54	19.45	19.46	19.71	19.91		
5	64QAM	1	0	19.29	19.59	19.31	19.57	19.71	20.5	0
5	64QAM	1	12	19.16	19.64	19.47	19.46	19.44		
5	64QAM	1	24	19.36	19.21	19.13	19.58	19.41		
5	64QAM	12	0	19.09	19.02	18.89	19.30	19.20	20.5	0
5	64QAM	12	7	18.99	19.02	18.97	19.19	19.14		
5	64QAM	12	13	18.88	19.30	18.88	19.12	19.07		
5	64QAM	25	0	18.92	19.39	19.06	19.17	19.21		

WWAN Top Antenna--Receiver off

GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GSM 1 Tx slot	32.51	32.86	32.87	34.00	23.51	23.86	23.87	25.00
GPRS 1 Tx slot	32.49	32.79	32.86	34.00	23.49	23.79	23.86	25.00
GPRS 2 Tx slots	30.90	30.93	30.91	32.00	24.90	24.93	24.91	26.00
GPRS 3 Tx slots	28.44	28.86	28.85	30.00	24.18	24.60	24.59	25.74
GPRS 4 Tx slots	27.94	28.10	28.08	29.00	24.94	25.10	25.08	26.00
EDGE(GMSK 1 Tx slot)	32.41	32.74	32.82	34.00	23.41	23.74	23.82	25.00
EDGE(GMSK 2 Tx slots)	30.88	30.90	30.88	32.00	24.88	24.90	24.88	26.00
EDGE(GMSK 3 Tx slots)	28.39	28.61	28.82	30.00	24.13	24.35	24.56	25.74
EDGE(GMSK 4 Tx slots)	27.91	28.08	28.01	29.00	24.91	25.08	25.01	26.00
EDGE(8PSK 1 Tx slot)	25.53	25.67	25.61	27.00	16.53	16.67	16.61	18.00
EDGE(8PSK 2 Tx slots)	24.42	24.19	24.34	25.50	18.42	18.19	18.34	19.50
EDGE(8PSK 3 Tx slots)	23.41	22.92	23.20	24.50	19.15	18.66	18.94	20.24
EDGE(8PSK 4 Tx slots)	22.64	22.31	22.47	23.50	19.64	19.31	19.47	20.50

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM 1 Tx slot	24.70	24.83	24.49	25.50	15.70	15.83	15.49	16.50
GPRS 1 Tx slot	24.67	24.82	24.42	25.50	15.67	15.82	15.42	16.50
GPRS 2 Tx slots	21.49	21.67	21.57	23.00	15.49	15.67	15.57	17.00
GPRS 3 Tx slots	20.90	20.93	20.78	22.00	16.64	16.67	16.52	17.74
GPRS 4 Tx slots	19.87	19.86	19.77	21.00	16.87	16.86	16.77	18.00
EDGE(GMSK 1 Tx slot)	24.61	24.77	24.28	25.50	15.61	15.77	15.28	16.50
EDGE(GMSK 2 Tx slots)	21.42	21.65	21.55	23.00	15.42	15.65	15.55	17.00
EDGE(GMSK 3 Tx slots)	20.88	20.89	20.71	22.00	16.62	16.63	16.45	17.74
EDGE(GMSK 4 Tx slots)	19.73	19.86	19.74	21.00	16.73	16.86	16.74	18.00
EDGE(8PSK 1 Tx slot)	20.07	20.08	19.95	20.50	11.07	11.08	10.95	11.50
EDGE(8PSK 2 Tx slots)	18.28	18.32	18.20	20.00	12.28	12.32	12.20	14.00
EDGE(8PSK 3 Tx slots)	16.88	17.02	16.98	18.50	12.62	12.76	12.72	14.24
EDGE(8PSK 4 Tx slots)	15.01	15.31	15.18	17.00	12.01	12.31	12.18	14.00

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)	WCDMA V			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel		9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
3GPP Rel 99	AMR 12.2Kbps	18.42	18.45	18.57	19.50	19.37	19.39	19.22	20.30	23.65	23.74	23.81	25.00
3GPP Rel 99	RMC 12.2Kbps	18.43	18.47	18.58	19.50	19.39	19.41	19.23	20.30	23.66	23.75	23.82	25.00
3GPP Rel 6	HSDPA Subtest-1	17.08	17.04	17.07	18.50	18.00	18.02	17.94	19.30	22.34	22.45	22.58	24.00
3GPP Rel 6	HSDPA Subtest-2	17.10	17.10	17.08	18.50	17.97	18.01	17.93	19.30	22.34	22.46	22.58	24.00
3GPP Rel 6	HSDPA Subtest-3	16.67	16.55	16.62	18.00	17.33	17.39	17.36	18.80	21.87	21.96	22.09	23.50
3GPP Rel 6	HSDPA Subtest-4	16.67	16.52	16.62	18.00	17.36	17.37	17.34	18.80	21.84	21.96	22.08	23.50
3GPP Rel 8	DC-HSDPA Subtest-1	17.10	16.91	16.96	18.50	17.93	17.97	17.86	19.30	22.29	22.34	22.45	24.00
3GPP Rel 8	DC-HSDPA Subtest-2	17.03	16.95	17.06	18.50	17.92	17.96	17.91	19.30	22.28	22.33	22.43	24.00
3GPP Rel 8	DC-HSDPA Subtest-3	16.38	16.31	16.53	18.00	17.25	17.26	17.17	18.80	21.79	21.88	21.99	23.50
3GPP Rel 8	DC-HSDPA Subtest-4	16.42	16.41	16.53	18.00	17.26	17.25	17.16	18.80	21.80	21.89	21.99	23.50
3GPP Rel 6	HSUPA Subtest-1	14.45	14.50	14.50	16.00	15.41	15.41	15.31	16.80	21.86	21.91	22.07	24.00
3GPP Rel 6	HSUPA Subtest-2	12.54	12.53	12.49	14.00	13.51	13.52	13.45	14.80	19.85	19.98	20.17	22.00
3GPP Rel 6	HSUPA Subtest-3	13.64	13.53	13.48	15.00	14.60	14.64	14.51	15.80	20.88	20.99	21.15	23.00
3GPP Rel 6	HSUPA Subtest-4	12.78	12.54	12.42	14.00	13.71	13.82	13.56	14.80	19.83	20.03	20.17	22.00
3GPP Rel 6	HSUPA Subtest-5	14.46	14.51	14.53	16.00	15.65	15.76	15.59	16.80	21.90	22.00	22.10	24.00
3GPP Rel 7	HSPA+ (16QAM) Subtest-1	12.34	12.44	12.41	13.50	13.30	13.39	13.33	14.30	19.72	19.83	19.94	21.50

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				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	18.90	19.17	18.95	19.6	0
20	QPSK	1	49	19.05	19.19	19.02		
20	QPSK	1	99	19.01	19.06	18.95		
20	QPSK	50	0	19.02	19.10	18.70	19.6	0
20	QPSK	50	24	19.05	19.00	18.70		
20	QPSK	50	50	18.94	18.89	18.98		
20	QPSK	100	0	19.02	19.03	19.01		
20	16QAM	1	0	18.97	18.92	18.99	19.6	0
20	16QAM	1	49	18.71	18.75	18.94		
20	16QAM	1	99	18.76	18.78	18.75		
20	16QAM	50	0	19.01	19.06	18.71	19.6	0
20	16QAM	50	24	19.05	19.03	18.71		
20	16QAM	50	50	18.93	18.90	18.94		
20	16QAM	100	0	19.01	19.06	18.90		
20	64QAM	1	0	18.71	18.94	18.91	19.6	0
20	64QAM	1	49	19.07	19.04	18.78		
20	64QAM	1	99	19.04	18.98	19.06		
20	64QAM	50	0	19.02	19.06	19.17	19.6	0
20	64QAM	50	24	19.03	18.98	18.90		
20	64QAM	50	50	18.95	18.90	18.95		
20	64QAM	100	0	19.01	19.04	18.72		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	19.01	19.05	19.02	19.6	0
15	QPSK	1	37	18.99	19.15	19.14		
15	QPSK	1	74	19.08	18.90	19.01		
15	QPSK	36	0	19.01	19.03	19.10	19.6	0
15	QPSK	36	20	18.97	18.89	19.06		
15	QPSK	36	39	18.96	18.95	19.08		
15	QPSK	75	0	19.02	18.95	19.14		
15	16QAM	1	0	18.92	18.91	18.92	19.6	0
15	16QAM	1	37	18.78	18.75	18.99		
15	16QAM	1	74	18.90	18.90	18.94		
15	16QAM	36	0	19.01	19.06	19.13	19.6	0
15	16QAM	36	20	18.98	18.90	19.15		
15	16QAM	36	39	18.94	18.97	19.11		
15	16QAM	75	0	19.05	18.96	19.08		
15	64QAM	1	0	18.90	18.98	18.99	19.6	0
15	64QAM	1	37	18.88	18.94	18.75		
15	64QAM	1	74	18.75	18.74	18.90		
15	64QAM	36	0	19.01	19.05	19.13	19.6	0
15	64QAM	36	20	18.97	18.92	19.09		
15	64QAM	36	39	18.94	18.96	19.11		
15	64QAM	75	0	19.03	18.93	19.07		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	19.05	19.03	18.99	19.6	0
10	QPSK	1	25	19.00	18.88	19.14		
10	QPSK	1	49	18.94	18.98	18.72		
10	QPSK	25	0	19.00	19.01	18.71	19.6	0
10	QPSK	25	12	19.07	18.90	19.16		
10	QPSK	25	25	19.03	18.88	18.90		
10	QPSK	50	0	18.96	18.98	18.75		
10	16QAM	1	0	18.94	18.91	18.96	19.6	0
10	16QAM	1	25	18.95	18.76	18.91		
10	16QAM	1	49	18.95	18.97	18.93		
10	16QAM	25	0	19.00	18.99	18.71	19.6	0
10	16QAM	25	12	19.07	18.92	19.16		
10	16QAM	25	25	19.01	18.87	19.14		
10	16QAM	50	0	18.94	18.96	18.73		
10	64QAM	1	0	18.75	18.78	18.93	19.6	0
10	64QAM	1	25	18.73	19.05	18.78		
10	64QAM	1	49	18.78	19.13	18.98		
10	64QAM	25	0	18.99	18.96	18.70	19.6	0
10	64QAM	25	12	19.07	18.90	19.16		
10	64QAM	25	25	19.03	18.89	18.70		
10	64QAM	50	0	18.96	18.99	18.77		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	19.04	19.04	19.01	19.6	0
5	QPSK	1	12	18.86	18.76	18.81		
5	QPSK	1	24	18.97	18.86	18.98		
5	QPSK	12	0	19.02	19.02	19.09	19.6	0
5	QPSK	12	7	18.98	18.94	19.06		
5	QPSK	12	13	19.04	18.95	19.07		
5	QPSK	25	0	19.05	18.97	19.09		
5	16QAM	1	0	18.90	18.98	18.91	19.6	0
5	16QAM	1	12	18.76	18.74	18.95		
5	16QAM	1	24	18.77	18.75	18.71		
5	16QAM	12	0	19.06	19.06	19.09	19.6	0
5	16QAM	12	7	18.93	18.95	19.10		
5	16QAM	12	13	19.07	18.92	19.09		
5	16QAM	25	0	19.01	18.96	19.06		
5	64QAM	1	0	18.71	18.77	18.92	19.6	0
5	64QAM	1	12	19.11	19.14	18.90		
5	64QAM	1	24	19.17	19.11	18.70		
5	64QAM	12	0	19.04	19.02	19.10	19.6	0
5	64QAM	12	7	18.99	18.97	19.09		
5	64QAM	12	13	19.07	18.93	19.06		
5	64QAM	25	0	19.02	18.98	19.08		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	18.94	18.91	18.99	19.6	0
3	QPSK	1	8	18.90	18.90	18.99		
3	QPSK	1	14	18.82	18.88	18.95		
3	QPSK	8	0	18.93	18.95	19.05	19.6	0
3	QPSK	8	4	18.95	18.92	19.08		
3	QPSK	8	7	18.93	18.93	19.05		
3	QPSK	15	0	18.93	18.89	19.02		
3	16QAM	1	0	19.15	18.72	18.78	19.6	0
3	16QAM	1	8	18.74	18.72	18.78		
3	16QAM	1	14	19.10	19.09	18.74		
3	16QAM	8	0	19.03	19.04	19.14	19.6	0
3	16QAM	8	4	19.01	18.98	19.15		
3	16QAM	8	7	18.94	19.01	19.05		
3	16QAM	15	0	18.96	18.95	19.04		
3	64QAM	1	0	19.14	19.04	18.72	19.6	0
3	64QAM	1	8	19.01	19.15	18.73		
3	64QAM	1	14	18.96	19.05	18.72		
3	64QAM	8	0	18.98	19.02	19.06	19.6	0
3	64QAM	8	4	19.00	18.97	19.05		
3	64QAM	8	7	18.96	18.98	19.02		
3	64QAM	15	0	18.95	18.90	19.03		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	18.79	18.79	18.82	19.6	0
1.4	QPSK	1	3	18.93	18.73	18.84		
1.4	QPSK	1	5	18.87	18.66	18.80		
1.4	QPSK	3	0	18.89	18.78	18.86		
1.4	QPSK	3	1	18.90	18.79	18.84		
1.4	QPSK	3	3	18.87	18.79	18.82		
1.4	QPSK	6	0	18.89	18.72	18.87	19.6	0
1.4	16QAM	1	0	19.15	18.96	19.12	19.6	0
1.4	16QAM	1	3	18.90	19.06	19.15		
1.4	16QAM	1	5	19.09	19.04	19.15		
1.4	16QAM	3	0	18.94	18.95	18.96		
1.4	16QAM	3	1	19.01	18.85	19.04		
1.4	16QAM	3	3	18.95	18.79	18.87		
1.4	16QAM	6	0	18.85	18.73	18.88	19.6	0
1.4	64QAM	1	0	19.07	18.94	18.94	19.6	0
1.4	64QAM	1	3	19.03	18.98	19.02		
1.4	64QAM	1	5	18.93	18.91	18.97		
1.4	64QAM	3	0	18.96	18.86	18.99		
1.4	64QAM	3	1	19.02	18.89	19.04		
1.4	64QAM	3	3	18.97	18.90	18.97		
1.4	64QAM	6	0	18.90	18.79	18.87	19.6	0

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				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	20.01	20.11	20.10	20.6	0
20	QPSK	1	49	19.68	19.83	19.93		
20	QPSK	1	99	20.03	20.17	20.04		
20	QPSK	50	0	20.05	20.16	20.00	20.6	0
20	QPSK	50	24	20.05	20.00	20.08		
20	QPSK	50	50	20.07	20.07	20.13		
20	QPSK	100	0	20.04	20.10	20.00		
20	16QAM	1	0	19.98	19.93	19.97	20.6	0
20	16QAM	1	49	20.00	20.08	19.96		
20	16QAM	1	99	19.94	19.99	19.94		
20	16QAM	50	0	20.03	20.12	20.00	20.6	0
20	16QAM	50	24	19.98	20.05	20.08		
20	16QAM	50	50	19.98	20.08	20.13		
20	16QAM	100	0	20.07	20.11	20.00		
20	64QAM	1	0	20.01	19.93	20.06	20.6	0
20	64QAM	1	49	20.09	20.10	20.11		
20	64QAM	1	99	19.94	19.99	19.90		
20	64QAM	50	0	20.03	20.12	20.02	20.6	0
20	64QAM	50	24	20.01	20.02	20.07		
20	64QAM	50	50	20.01	20.09	20.13		
20	64QAM	100	0	20.08	20.13	20.14		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	20.15	20.07	19.92	20.6	0
15	QPSK	1	37	19.94	19.80	19.86		
15	QPSK	1	74	20.07	19.98	20.04		
15	QPSK	36	0	20.03	20.07	19.92	20.6	0
15	QPSK	36	20	19.90	19.90	19.91		
15	QPSK	36	39	19.89	20.05	19.98		
15	QPSK	75	0	19.99	20.05	19.94		
15	16QAM	1	0	19.97	19.96	19.95	20.6	0
15	16QAM	1	37	19.98	20.04	20.01		
15	16QAM	1	74	19.97	19.90	19.98		
15	16QAM	36	0	20.05	20.08	19.94	20.6	0
15	16QAM	36	20	19.91	19.92	19.93		
15	16QAM	36	39	19.91	20.06	19.98		
15	16QAM	75	0	19.95	20.03	19.95		
15	64QAM	1	0	19.99	19.95	19.95	20.6	0
15	64QAM	1	37	19.99	20.16	20.01		
15	64QAM	1	74	19.97	19.95	19.92		
15	64QAM	36	0	20.07	20.08	19.96	20.6	0
15	64QAM	36	20	19.88	19.91	19.92		
15	64QAM	36	39	19.92	20.07	19.95		
15	64QAM	75	0	19.94	20.02	19.92		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	20.01	20.00	20.15	20.6	0
10	QPSK	1	25	19.83	19.90	19.90		
10	QPSK	1	49	20.10	20.00	20.07		
10	QPSK	25	0	19.85	19.97	20.06	20.6	0
10	QPSK	25	12	19.91	20.04	20.13		
10	QPSK	25	25	19.99	19.99	20.06		
10	QPSK	50	0	19.92	19.99	20.12		
10	16QAM	1	0	19.96	19.94	19.94	20.6	0
10	16QAM	1	25	20.05	20.06	19.97		
10	16QAM	1	49	19.92	19.98	19.94		
10	16QAM	25	0	19.84	20.04	20.09	20.6	0
10	16QAM	25	12	19.91	20.02	20.11		
10	16QAM	25	25	19.95	19.97	20.07		
10	16QAM	50	0	19.93	19.99	20.14		
10	64QAM	1	0	20.08	19.94	19.92	20.6	0
10	64QAM	1	25	19.99	20.07	20.09		
10	64QAM	1	49	20.09	19.97	19.93		
10	64QAM	25	0	19.86	19.93	20.07	20.6	0
10	64QAM	25	12	19.94	20.03	20.13		
10	64QAM	25	25	19.96	20.01	20.06		
10	64QAM	50	0	19.87	19.99	20.11		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	19.98	20.01	20.07	20.6	0
5	QPSK	1	12	19.81	19.88	19.92		
5	QPSK	1	24	19.78	19.92	19.98		
5	QPSK	12	0	19.85	19.97	20.11	20.6	0
5	QPSK	12	7	19.83	19.96	20.02		
5	QPSK	12	13	19.82	19.95	20.02		
5	QPSK	25	0	19.89	19.93	20.06		
5	16QAM	1	0	20.08	19.94	19.92	20.6	0
5	16QAM	1	12	20.00	20.03	19.96		
5	16QAM	1	24	20.16	20.05	19.90		
5	16QAM	12	0	19.88	20.02	20.12	20.6	0
5	16QAM	12	7	19.85	19.98	20.06		
5	16QAM	12	13	19.84	19.98	20.03		
5	16QAM	25	0	19.86	19.95	20.08		
5	64QAM	1	0	20.09	20.07	19.90	20.6	0
5	64QAM	1	12	19.96	20.12	20.00		
5	64QAM	1	24	19.98	20.08	20.01		
5	64QAM	12	0	19.88	19.98	20.12	20.6	0
5	64QAM	12	7	19.84	19.99	20.06		
5	64QAM	12	13	19.82	19.93	20.01		
5	64QAM	25	0	19.85	19.91	20.09		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	19.98	20.03	19.92	20.6	0
3	QPSK	1	8	19.84	19.89	19.96		
3	QPSK	1	14	19.82	19.91	19.94		
3	QPSK	8	0	19.82	19.93	20.02	20.6	0
3	QPSK	8	4	19.83	19.94	20.02		
3	QPSK	8	7	19.88	19.97	20.00		
3	QPSK	15	0	19.88	20.00	19.96		
3	16QAM	1	0	20.08	20.04	19.90	20.6	0
3	16QAM	1	8	20.00	20.09	19.96		
3	16QAM	1	14	20.12	20.00	19.96		
3	16QAM	8	0	19.89	20.00	20.10	20.6	0
3	16QAM	8	4	19.93	20.02	20.09		
3	16QAM	8	7	19.88	20.02	20.07		
3	16QAM	15	0	19.86	20.06	20.01		
3	64QAM	1	0	20.02	20.15	20.02	20.6	0
3	64QAM	1	8	19.97	20.11	20.05		
3	64QAM	1	14	19.96	20.13	20.16		
3	64QAM	8	0	19.88	19.97	20.05	20.6	0
3	64QAM	8	4	19.87	19.99	20.05		
3	64QAM	8	7	19.91	19.97	20.10		
3	64QAM	15	0	19.85	19.98	19.97		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	19.81	19.86	19.95	20.6	0
1.4	QPSK	1	3	19.78	19.98	19.94		
1.4	QPSK	1	5	19.56	19.96	19.91		
1.4	QPSK	3	0	19.72	20.03	19.98		
1.4	QPSK	3	1	19.74	20.01	20.01		
1.4	QPSK	3	3	19.66	19.99	20.00		
1.4	QPSK	6	0	19.68	20.01	19.98	20.6	0
1.4	16QAM	1	0	19.96	19.92	19.92	20.6	0
1.4	16QAM	1	3	20.04	20.08	19.97		
1.4	16QAM	1	5	19.86	20.04	20.00		
1.4	16QAM	3	0	19.83	20.07	20.06		
1.4	16QAM	3	1	19.80	20.06	20.11		
1.4	16QAM	3	3	19.64	20.02	19.96		
1.4	16QAM	6	0	19.77	20.04	20.00	20.6	0
1.4	64QAM	1	0	19.77	20.16	19.98	20.6	0
1.4	64QAM	1	3	19.90	20.00	20.00		
1.4	64QAM	1	5	19.87	20.01	20.11		
1.4	64QAM	3	0	19.83	20.10	20.10		
1.4	64QAM	3	1	19.89	20.12	20.00		
1.4	64QAM	3	3	19.74	20.07	20.10		
1.4	64QAM	6	0	19.71	20.00	20.01	20.6	0

Band 5 (Celluar Band)
Part 22H(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				20450	20525	20600		
Frequency (MHz)				829	836.5	844		
10	QPSK	1	0	23.54	23.51	23.54	24.8	0
10	QPSK	1	25	23.37	23.41	23.56		
10	QPSK	1	49	23.93	23.92	23.90		
10	QPSK	25	0	23.02	22.78	22.98	23.8	1
10	QPSK	25	12	22.63	22.65	22.95		
10	QPSK	25	25	22.59	22.77	22.95		
10	QPSK	50	0	22.86	22.70	22.82		
10	16QAM	1	0	22.47	23.11	23.10	23.8	1
10	16QAM	1	25	22.62	22.78	22.97		
10	16QAM	1	49	23.25	22.94	23.25		
10	16QAM	25	0	21.59	21.64	22.06	22.8	2
10	16QAM	25	12	21.60	21.73	22.01		
10	16QAM	25	25	21.58	21.78	22.03		
10	16QAM	50	0	21.52	21.67	21.89		
10	64QAM	1	0	21.83	21.77	22.35	22.8	2
10	64QAM	1	25	21.68	21.93	21.95		
10	64QAM	1	49	21.63	21.98	22.29		
10	64QAM	25	0	20.41	20.70	21.00	21.8	3
10	64QAM	25	12	20.48	20.71	21.04		
10	64QAM	25	25	20.51	20.78	20.91		
10	64QAM	50	0	20.58	20.69	20.96		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	23.46	23.50	23.48	24.8	0
5	QPSK	1	12	23.26	23.38	23.37		
5	QPSK	1	24	23.41	23.59	23.72		
5	QPSK	12	0	22.39	22.71	22.71	23.8	1
5	QPSK	12	7	22.37	22.64	22.69		
5	QPSK	12	13	22.28	22.64	22.72		
5	QPSK	25	0	22.45	22.62	22.70		
5	16QAM	1	0	22.97	22.78	22.67	23.8	1
5	16QAM	1	12	22.27	22.78	22.84		
5	16QAM	1	24	22.93	22.85	22.88		
5	16QAM	12	0	21.39	21.74	21.70	22.8	2
5	16QAM	12	7	21.40	21.73	21.66		
5	16QAM	12	13	21.40	21.71	21.81		
5	16QAM	25	0	21.42	21.62	21.71		
5	64QAM	1	0	21.44	21.71	21.91	22.8	2
5	64QAM	1	12	21.50	21.71	21.90		
5	64QAM	1	24	21.69	21.75	21.95		
5	64QAM	12	0	20.41	20.72	20.79	21.8	3
5	64QAM	12	7	20.35	20.68	20.66		
5	64QAM	12	13	20.34	20.77	20.70		
5	64QAM	25	0	20.39	20.54	20.69		
Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	23.30	23.43	23.44	24.8	0
3	QPSK	1	8	23.29	23.39	23.51		
3	QPSK	1	14	23.32	23.70	23.64		
3	QPSK	8	0	22.44	22.70	22.72	23.8	1
3	QPSK	8	4	22.33	22.65	22.65		
3	QPSK	8	7	22.33	22.63	22.71		
3	QPSK	15	0	22.36	22.66	22.72		
3	16QAM	1	0	22.62	22.91	23.00	23.8	1
3	16QAM	1	8	22.80	23.05	23.07		
3	16QAM	1	14	22.42	23.15	23.09		
3	16QAM	8	0	21.23	21.69	21.68	22.8	2
3	16QAM	8	4	21.37	21.71	21.72		
3	16QAM	8	7	21.45	21.73	21.78		
3	16QAM	15	0	21.30	21.70	21.61		
3	64QAM	1	0	21.59	21.80	21.93	22.8	2
3	64QAM	1	8	21.58	21.91	21.92		
3	64QAM	1	14	21.27	21.95	21.99		
3	64QAM	8	0	20.25	20.63	20.66	21.8	3
3	64QAM	8	4	20.30	20.61	20.76		
3	64QAM	8	7	20.48	20.61	20.79		
3	64QAM	15	0	20.22	20.54	20.64		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	23.31	23.38	23.34	24.8	0
1.4	QPSK	1	3	23.31	23.37	23.44		
1.4	QPSK	1	5	23.22	23.44	23.55		
1.4	QPSK	3	0	23.28	23.53	23.50		
1.4	QPSK	3	1	23.37	23.55	23.52		
1.4	QPSK	3	3	23.36	23.50	23.56		
1.4	QPSK	6	0	22.23	22.54	22.60	23.8	1
1.4	16QAM	1	0	22.65	22.49	22.71	23.8	1
1.4	16QAM	1	3	22.61	22.75	22.71		
1.4	16QAM	1	5	22.93	23.15	22.53		
1.4	16QAM	3	0	22.34	22.50	22.75		
1.4	16QAM	3	1	22.38	22.65	22.66		
1.4	16QAM	3	3	22.34	22.62	22.69		
1.4	16QAM	6	0	21.24	21.64	21.77	22.8	2
1.4	64QAM	1	0	21.56	21.75	21.55	22.8	2
1.4	64QAM	1	3	21.56	21.85	21.43		
1.4	64QAM	1	5	21.59	21.87	21.62		
1.4	64QAM	3	0	21.46	21.62	21.78		
1.4	64QAM	3	1	21.12	21.71	21.81		
1.4	64QAM	3	3	21.08	21.62	21.80		
1.4	64QAM	6	0	20.29	20.48	20.63	21.8	3

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	19.00	19.37	19.32	19.5	0
20	QPSK	1	49	19.15	19.24	19.31		
20	QPSK	1	99	19.32	19.32	19.33		
20	QPSK	50	0	19.15	19.28	19.16	19.5	0
20	QPSK	50	24	19.21	19.22	19.18		
20	QPSK	50	50	19.15	19.24	19.18		
20	QPSK	100	0	19.19	19.22	19.20		
20	16QAM	1	0	19.27	19.24	19.24	19.5	0
20	16QAM	1	49	19.28	19.25	19.22		
20	16QAM	1	99	19.25	19.29	19.27		
20	16QAM	50	0	19.14	19.21	19.21	19.5	0
20	16QAM	50	24	19.26	19.14	19.18		
20	16QAM	50	50	19.16	19.24	19.25		
20	16QAM	100	0	19.28	19.23	19.27		
20	64QAM	1	0	19.15	19.24	19.25	19.5	0
20	64QAM	1	49	19.18	19.26	19.28		
20	64QAM	1	99	19.26	19.21	19.23		
20	64QAM	50	0	19.14	19.14	19.16	19.5	0
20	64QAM	50	24	19.28	19.29	19.19		
20	64QAM	50	50	19.16	19.22	19.23		
20	64QAM	100	0	19.26	19.20	19.29		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	18.89	19.10	19.19	19.5	0
15	QPSK	1	37	19.06	19.12	19.13		
15	QPSK	1	74	19.27	19.14	19.29		
15	QPSK	36	0	19.20	19.15	19.23	19.5	0
15	QPSK	36	20	19.25	19.17	19.11		
15	QPSK	36	39	19.18	19.15	19.22		
15	QPSK	75	0	19.20	19.14	19.28		
15	16QAM	1	0	19.20	19.23	19.28	19.5	0
15	16QAM	1	37	19.23	19.29	19.23		
15	16QAM	1	74	19.27	19.28	19.28		
15	16QAM	36	0	19.21	19.13	19.28	19.5	0
15	16QAM	36	20	19.27	19.17	19.13		
15	16QAM	36	39	19.24	19.13	19.20		
15	16QAM	75	0	19.19	19.13	19.25		
15	64QAM	1	0	19.21	19.27	19.21	19.5	0
15	64QAM	1	37	19.13	19.18	19.27		
15	64QAM	1	74	19.25	19.23	19.22		
15	64QAM	36	0	19.17	19.10	19.27	19.5	0
15	64QAM	36	20	19.26	19.15	19.16		
15	64QAM	36	39	19.21	19.16	19.21		
15	64QAM	75	0	19.18	19.13	19.21		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	19.23	19.25	19.24	19.5	0
10	QPSK	1	25	19.00	19.22	19.28		
10	QPSK	1	49	19.29	19.21	19.12		
10	QPSK	25	0	19.13	19.12	19.29	19.5	0
10	QPSK	25	12	19.01	19.17	19.27		
10	QPSK	25	25	19.19	19.19	19.14		
10	QPSK	50	0	19.23	19.22	19.18		
10	16QAM	1	0	19.27	19.23	19.26	19.5	0
10	16QAM	1	25	19.18	19.22	19.28		
10	16QAM	1	49	19.22	19.23	19.24		
10	16QAM	25	0	19.14	19.13	19.23	19.5	0
10	16QAM	25	12	19.01	19.22	19.27		
10	16QAM	25	25	19.16	19.15	19.12		
10	16QAM	50	0	19.23	19.25	19.15		
10	64QAM	1	0	19.25	19.29	19.29	19.5	0
10	64QAM	1	25	19.24	19.21	19.23		
10	64QAM	1	49	19.20	19.22	19.26		
10	64QAM	25	0	19.11	19.10	19.25	19.5	0
10	64QAM	25	12	19.01	19.20	19.27		
10	64QAM	25	25	19.21	19.15	19.13		
10	64QAM	50	0	19.22	19.23	19.16		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	19.00	19.15	19.24	19.5	0
5	QPSK	1	12	18.98	19.21	19.26		
5	QPSK	1	24	18.98	19.27	19.10		
5	QPSK	12	0	19.11	19.26	19.15	19.5	0
5	QPSK	12	7	19.13	19.23	19.10		
5	QPSK	12	13	19.02	19.29	19.12		
5	QPSK	25	0	19.11	19.23	19.14		
5	16QAM	1	0	19.18	19.27	19.25	19.5	0
5	16QAM	1	12	19.19	19.24	19.26		
5	16QAM	1	24	19.12	19.29	19.27		
5	16QAM	12	0	19.11	19.28	19.18	19.5	0
5	16QAM	12	7	19.16	19.27	19.14		
5	16QAM	12	13	19.06	19.28	19.13		
5	16QAM	25	0	19.14	19.22	19.13		
5	64QAM	1	0	19.29	19.21	19.21	19.5	0
5	64QAM	1	12	19.26	19.16	19.26		
5	64QAM	1	24	19.13	19.19	19.25		
5	64QAM	12	0	19.13	19.13	19.15	19.5	0
5	64QAM	12	7	19.14	19.27	19.15		
5	64QAM	12	13	19.06	19.10	19.18		
5	64QAM	25	0	19.10	19.24	19.14		

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	23.31	23.31	23.32	24.5	0
10	QPSK	1	25	23.34	23.57	23.43		
10	QPSK	1	49	23.38	23.68	23.56		
10	QPSK	25	0	22.18	22.37	22.27	23.5	1
10	QPSK	25	12	22.26	22.26	22.30		
10	QPSK	25	25	22.26	22.24	22.25		
10	QPSK	50	0	22.29	22.35	22.32		
10	16QAM	1	0	22.79	22.65	22.31	23.5	1
10	16QAM	1	25	22.29	22.64	22.60		
10	16QAM	1	49	22.60	22.85	22.60		
10	16QAM	25	0	21.29	21.30	21.31	22.5	2
10	16QAM	25	12	21.22	21.27	21.39		
10	16QAM	25	25	21.24	21.28	21.34		
10	16QAM	50	0	21.32	21.27	21.44		
10	64QAM	1	0	21.61	21.46	21.58	22.5	2
10	64QAM	1	25	22.00	21.50	21.39		
10	64QAM	1	49	21.54	21.78	21.82		
10	64QAM	25	0	20.29	20.25	20.25	21.5	3
10	64QAM	25	12	20.31	20.29	20.32		
10	64QAM	25	25	20.29	20.26	20.29		
10	64QAM	50	0	20.29	20.26	20.29		
Channel				23035	23095	23155	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				701.5	707.5	713.5		
5	QPSK	1	0	23.07	23.24	23.11	24.5	0
5	QPSK	1	12	23.15	23.15	23.13		
5	QPSK	1	24	23.19	23.23	23.24		
5	QPSK	12	0	22.20	22.22	22.21	23.5	1
5	QPSK	12	7	22.15	22.16	22.20		
5	QPSK	12	13	22.17	22.18	22.32		
5	QPSK	25	0	22.17	22.15	22.24		
5	16QAM	1	0	22.36	22.77	22.84	23.5	1
5	16QAM	1	12	22.22	22.70	22.31		
5	16QAM	1	24	22.38	22.41	22.40		
5	16QAM	12	0	21.28	21.19	21.39	22.5	2
5	16QAM	12	7	21.24	21.12	21.25		
5	16QAM	12	13	21.23	21.22	21.26		
5	16QAM	25	0	21.31	21.16	21.24		
5	64QAM	1	0	21.27	21.48	21.49	22.5	2
5	64QAM	1	12	21.13	21.49	21.59		
5	64QAM	1	24	21.56	21.51	21.02		
5	64QAM	12	0	20.25	20.18	20.34	21.5	3
5	64QAM	12	7	20.29	20.35	20.25		
5	64QAM	12	13	20.25	20.13	20.27		
5	64QAM	25	0	20.21	20.27	20.24		
Channel				23025	23095	23165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				700.5	707.5	714.5		
3	QPSK	1	0	23.09	23.17	23.09	24.5	0
3	QPSK	1	8	23.15	23.27	23.17		
3	QPSK	1	14	23.11	23.20	23.22		
3	QPSK	8	0	22.14	22.23	22.18	23.5	1
3	QPSK	8	4	22.16	22.30	22.28		
3	QPSK	8	7	22.20	22.24	22.19		
3	QPSK	15	0	22.18	22.15	22.23		
3	16QAM	1	0	22.29	22.33	22.75	23.5	1
3	16QAM	1	8	22.37	22.68	22.82		
3	16QAM	1	14	22.57	22.68	22.61		
3	16QAM	8	0	21.24	21.25	21.16	22.5	2
3	16QAM	8	4	21.28	21.35	21.27		
3	16QAM	8	7	21.24	21.35	21.33		
3	16QAM	15	0	21.17	21.13	21.42		
3	64QAM	1	0	21.20	21.16	21.35	22.5	2
3	64QAM	1	8	21.51	21.29	21.50		
3	64QAM	1	14	21.35	21.43	21.04		
3	64QAM	8	0	20.20	20.29	20.18	21.5	3
3	64QAM	8	4	20.23	20.31	20.29		
3	64QAM	8	7	20.35	20.22	20.37		
3	64QAM	15	0	20.18	20.11	20.16		
Channel				23017	23095	23173	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				699.7	707.5	715.3		
1.4	QPSK	1	0	22.93	23.00	22.98	24.5	0
1.4	QPSK	1	3	23.26	23.12	23.29		
1.4	QPSK	1	5	23.09	23.21	23.06		
1.4	QPSK	3	0	23.11	23.04	23.04		
1.4	QPSK	3	1	23.07	23.06	23.09		
1.4	QPSK	3	3	23.15	23.30	23.09		
1.4	QPSK	6	0	22.00	22.02	22.05	23.5	1
1.4	16QAM	1	0	22.55	22.67	22.54	23.5	1
1.4	16QAM	1	3	22.57	22.49	22.08		
1.4	16QAM	1	5	22.17	22.26	22.15		
1.4	16QAM	3	0	22.13	21.97	22.13		
1.4	16QAM	3	1	22.18	22.09	22.17		
1.4	16QAM	3	3	21.93	22.23	22.09		
1.4	16QAM	6	0	21.23	21.18	21.22	22.5	2
1.4	64QAM	1	0	21.31	20.91	21.47	22.5	2
1.4	64QAM	1	3	21.36	21.29	21.50		
1.4	64QAM	1	5	21.36	21.12	21.34		
1.4	64QAM	3	0	21.35	21.27	21.28		
1.4	64QAM	3	1	20.96	21.28	21.42		
1.4	64QAM	3	3	21.33	21.20	21.13		
1.4	64QAM	6	0	20.05	20.01	20.06	21.5	3

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				23780	23790	23800		
Frequency (MHz)				709	710	711		
10	QPSK	1	0	23.21	23.07	23.27	24.5	0
10	QPSK	1	25	23.05	23.32	23.18		
10	QPSK	1	49	23.39	23.43	23.31		
10	QPSK	25	0	22.10	22.12	22.12	23.5	1
10	QPSK	25	12	22.12	22.05	22.08		
10	QPSK	25	25	22.15	22.16	22.11		
10	QPSK	50	0	22.14	22.16	22.12		
10	16QAM	1	0	22.41	22.32	22.27	23.5	1
10	16QAM	1	25	22.44	22.05	22.20		
10	16QAM	1	49	22.49	22.47	22.90		
10	16QAM	25	0	21.17	21.07	21.15	22.5	2
10	16QAM	25	12	21.11	21.08	21.08		
10	16QAM	25	25	21.16	21.21	21.03		
10	16QAM	50	0	21.07	21.13	21.19		
10	64QAM	1	0	21.61	21.47	21.60	22.5	2
10	64QAM	1	25	21.26	21.35	20.91		
10	64QAM	1	49	21.57	21.60	21.39		
10	64QAM	25	0	20.09	20.12	20.16	21.5	3
10	64QAM	25	12	20.15	20.16	20.14		
10	64QAM	25	25	20.19	20.09	20.12		
10	64QAM	50	0	20.15	20.06	20.11		
Channel				23755	23790	23825	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				706.5	710	713.5		
5	QPSK	1	0	22.98	23.05	23.06	24.5	0
5	QPSK	1	12	23.03	22.94	23.00		
5	QPSK	1	24	23.02	23.15	23.02		
5	QPSK	12	0	21.95	22.02	22.03	23.5	1
5	QPSK	12	7	22.06	22.11	22.03		
5	QPSK	12	13	22.07	22.04	22.14		
5	QPSK	25	0	22.04	22.15	22.07		
5	16QAM	1	0	22.57	22.42	22.28	23.5	1
5	16QAM	1	12	22.45	22.62	22.26		
5	16QAM	1	24	22.60	22.55	22.64		
5	16QAM	12	0	20.92	21.06	21.13	22.5	2
5	16QAM	12	7	21.13	21.19	21.12		
5	16QAM	12	13	21.14	21.12	21.20		
5	16QAM	25	0	20.99	20.99	20.98		
5	64QAM	1	0	21.41	21.37	21.29	22.5	2
5	64QAM	1	12	21.31	21.21	21.08		
5	64QAM	1	24	21.14	20.91	21.20		
5	64QAM	12	0	20.04	20.06	20.16	21.5	3
5	64QAM	12	7	20.18	20.10	20.13		
5	64QAM	12	13	20.22	20.10	20.14		
5	64QAM	25	0	19.97	20.10	19.90		

Band 26 for FCC
(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				26765	26865	26965		
Frequency (MHz)				821.5	831.5	841.5		
15	QPSK	1	0	23.76	23.81	23.62	24.8	0
15	QPSK	1	37	23.47	23.40	23.48		
15	QPSK	1	74	23.70	23.49	23.32		
15	QPSK	36	0	22.62	22.68	22.49	23.8	1
15	QPSK	36	20	22.52	22.90	22.53		
15	QPSK	36	39	22.53	22.70	22.57		
15	QPSK	75	0	22.51	22.82	22.79		
15	16QAM	1	0	22.76	22.72	22.63	23.8	1
15	16QAM	1	37	22.89	22.76	22.70		
15	16QAM	1	74	22.84	22.77	22.54		
15	16QAM	36	0	21.56	21.69	21.53	22.8	2
15	16QAM	36	20	21.45	21.37	21.56		
15	16QAM	36	39	21.48	21.70	21.67		
15	16QAM	75	0	21.48	21.77	21.56		
15	64QAM	1	0	21.52	21.84	21.98	22.8	2
15	64QAM	1	37	21.96	22.02	21.85		
15	64QAM	1	74	21.82	21.83	21.79		
15	64QAM	36	0	20.54	20.77	20.63	21.8	3
15	64QAM	36	20	20.44	20.70	20.62		
15	64QAM	36	39	20.54	20.80	20.66		
15	64QAM	75	0	20.48	20.78	20.58		
Channel				26740	26865	26990	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				819	831.5	844		
10	QPSK	1	0	23.61	23.69	23.40	24.8	0
10	QPSK	1	25	23.45	23.46	23.61		
10	QPSK	1	49	23.49	23.52	23.51		
10	QPSK	25	0	22.60	23.32	23.22	23.8	1
10	QPSK	25	12	22.48	22.89	23.27		
10	QPSK	25	25	22.55	22.78	23.26		
10	QPSK	50	0	22.64	23.23	23.21		
10	16QAM	1	0	22.78	23.45	23.33	23.8	1
10	16QAM	1	25	22.66	23.19	23.34		
10	16QAM	1	49	22.91	23.47	23.54		
10	16QAM	25	0	21.63	21.80	22.40	22.8	2
10	16QAM	25	12	21.56	21.82	22.13		
10	16QAM	25	25	21.66	21.84	22.24		
10	16QAM	50	0	21.63	21.95	22.32		
10	64QAM	1	0	21.55	22.24	22.27	22.8	2
10	64QAM	1	25	21.64	22.05	22.19		
10	64QAM	1	49	21.90	21.95	22.50		
10	64QAM	25	0	20.61	20.73	21.10	21.8	3
10	64QAM	25	12	20.54	20.84	21.18		
10	64QAM	25	25	20.64	20.86	21.28		
10	64QAM	50	0	20.56	20.90	21.24		
Channel				26715	26865	27015	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				816.5	831.5	846.5		
5	QPSK	1	0	23.47	23.56	23.60	24.8	0
5	QPSK	1	12	23.49	23.66	23.54		
5	QPSK	1	24	23.54	23.72	23.55		
5	QPSK	12	0	22.55	22.78	23.22	23.8	1
5	QPSK	12	7	22.56	22.77	23.27		
5	QPSK	12	13	22.57	22.80	23.23		
5	QPSK	25	0	22.56	22.80	23.16		
5	16QAM	1	0	23.11	23.08	23.39	23.8	1
5	16QAM	1	12	23.02	23.11	23.42		
5	16QAM	1	24	23.23	22.90	23.33		
5	16QAM	12	0	21.68	21.85	22.30	22.8	2
5	16QAM	12	7	21.75	21.79	22.18		
5	16QAM	12	13	21.76	21.88	22.20		
5	16QAM	25	0	21.61	21.76	22.25		
5	64QAM	1	0	21.93	22.29	22.03	22.8	2
5	64QAM	1	12	21.83	22.11	22.06		
5	64QAM	1	24	21.40	22.02	22.09		
5	64QAM	12	0	20.65	20.78	21.30	21.8	3
5	64QAM	12	7	20.73	20.79	21.19		
5	64QAM	12	13	20.75	20.88	21.27		
5	64QAM	25	0	20.66	20.69	21.23		
Channel				26705	26865	27025	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				815.5	831.5	847.5		
3	QPSK	1	0	23.44	23.55	23.68	24.8	0
3	QPSK	1	8	23.50	23.55	23.73		
3	QPSK	1	14	23.51	23.47	23.58		
3	QPSK	8	0	22.70	22.76	23.16	23.8	1
3	QPSK	8	4	22.60	22.69	23.21		
3	QPSK	8	7	22.49	22.76	23.30		
3	QPSK	15	0	22.56	22.77	23.18		
3	16QAM	1	0	23.20	23.47	23.26	23.8	1
3	16QAM	1	8	22.87	23.09	23.31		
3	16QAM	1	14	22.99	23.13	23.31		
3	16QAM	8	0	21.76	21.78	22.27	22.8	2
3	16QAM	8	4	21.71	21.82	22.31		
3	16QAM	8	7	21.61	21.79	22.27		
3	16QAM	15	0	21.72	21.68	22.37		
3	64QAM	1	0	21.72	22.08	22.35	22.8	2
3	64QAM	1	8	21.97	22.09	22.23		
3	64QAM	1	14	21.60	21.87	22.37		
3	64QAM	8	0	20.70	20.73	21.26	21.8	3
3	64QAM	8	4	20.70	20.76	21.30		
3	64QAM	8	7	20.77	20.73	21.16		
3	64QAM	15	0	20.61	20.85	21.24		
Channel				26697	26865	27033	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				814.7	831.5	848.3		
1.4	QPSK	1	0	23.35	23.38	23.64	24.8	0
1.4	QPSK	1	3	23.66	23.69	23.68		
1.4	QPSK	1	5	23.62	23.62	23.52		
1.4	QPSK	3	0	23.49	23.73	23.51		
1.4	QPSK	3	1	23.56	23.57	23.53		
1.4	QPSK	3	3	23.69	23.62	23.50		
1.4	QPSK	6	0	22.47	22.59	23.10	23.8	1
1.4	16QAM	1	0	23.02	23.09	23.30	23.8	1
1.4	16QAM	1	3	22.80	23.03	23.25		
1.4	16QAM	1	5	22.73	23.15	23.30		
1.4	16QAM	3	0	22.53	22.68	23.14		
1.4	16QAM	3	1	22.70	22.54	23.13		
1.4	16QAM	3	3	22.45	22.70	23.10		
1.4	16QAM	6	0	21.73	21.78	22.10	22.8	2
1.4	64QAM	1	0	21.74	21.83	22.22	22.8	2
1.4	64QAM	1	3	21.46	21.58	22.12		
1.4	64QAM	1	5	21.58	21.99	22.33		
1.4	64QAM	3	0	21.44	21.47	22.10		
1.4	64QAM	3	1	21.76	21.77	22.19		
1.4	64QAM	3	3	21.82	21.78	22.15		
1.4	64QAM	6	0	20.60	20.61	21.08	21.8	3

Band 38(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				37850	38000	38150		
Frequency (MHz)				2580	2595	2610		
20	QPSK	1	0	18.72	18.57	18.32	19	0
20	QPSK	1	49	18.57	18.45	18.33		
20	QPSK	1	99	18.79	18.54	18.31		
20	QPSK	50	0	18.41	18.36	18.53	19	0
20	QPSK	50	24	18.54	18.32	18.57		
20	QPSK	50	50	18.33	18.51	18.59		
20	QPSK	100	0	18.32	18.49	18.30		
20	16QAM	1	0	18.74	18.40	18.31	19	0
20	16QAM	1	49	18.39	18.34	18.38		
20	16QAM	1	99	18.31	18.52	18.75		
20	16QAM	50	0	18.39	18.42	18.31	19	0
20	16QAM	50	24	18.54	18.37	18.38		
20	16QAM	50	50	18.32	18.51	18.39		
20	16QAM	100	0	18.42	18.34	18.78		
20	64QAM	1	0	18.47	18.50	18.35	19	0
20	64QAM	1	49	18.38	18.31	18.42		
20	64QAM	1	99	18.39	18.02	18.39		
20	64QAM	50	0	18.28	18.36	18.36	19	0
20	64QAM	50	24	18.48	18.31	18.49		
20	64QAM	50	50	18.74	18.45	18.73		
20	64QAM	100	0	18.76	18.58	18.41		
Channel				37825	38000	38175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2577.5	2595	2612.5		
15	QPSK	1	0	18.78	18.72	18.48	19	0
15	QPSK	1	37	18.36	18.14	18.32		
15	QPSK	1	74	18.30	18.35	18.42		
15	QPSK	36	0	18.53	18.31	18.56	19	0
15	QPSK	36	20	18.72	18.28	18.31		
15	QPSK	36	39	18.38	18.47	18.42		
15	QPSK	75	0	18.74	18.40	18.33		
15	16QAM	1	0	18.38	18.33	18.34	19	0
15	16QAM	1	37	18.45	18.57	18.38		
15	16QAM	1	74	18.47	18.46	18.44		
15	16QAM	36	0	18.41	18.23	18.58	19	0
15	16QAM	36	20	18.38	18.38	18.38		
15	16QAM	36	39	18.72	18.57	18.77		
15	16QAM	75	0	18.74	18.42	18.33		
15	64QAM	1	0	18.48	18.50	18.40	19	0
15	64QAM	1	37	18.56	18.34	18.41		
15	64QAM	1	74	18.44	18.43	18.37		
15	64QAM	36	0	18.70	18.34	18.31	19	0
15	64QAM	36	20	18.39	18.40	18.55		
15	64QAM	36	39	18.43	18.50	18.40		
15	64QAM	75	0	18.72	18.50	18.39		
Channel				37800	38000	38200	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2575	2595	2615		
10	QPSK	1	0	18.46	18.36	18.42	19	0
10	QPSK	1	25	18.35	18.30	18.46		
10	QPSK	1	49	18.36	18.31	18.39		
10	QPSK	25	0	18.37	18.58	18.35	19	0
10	QPSK	25	12	18.37	18.46	18.39		
10	QPSK	25	25	18.34	18.45	18.48		
10	QPSK	50	0	18.43	18.34	18.37		
10	16QAM	1	0	18.34	18.45	18.39	19	0
10	16QAM	1	25	18.41	18.41	18.39		
10	16QAM	1	49	18.35	18.45	18.32		
10	16QAM	25	0	18.39	18.56	18.35	19	0
10	16QAM	25	12	18.38	18.50	18.36		
10	16QAM	25	25	18.35	18.50	18.37		
10	16QAM	50	0	18.46	18.36	18.36		
10	64QAM	1	0	18.36	18.30	18.32	19	0
10	64QAM	1	25	18.49	18.37	18.53		
10	64QAM	1	49	18.31	18.20	18.46		
10	64QAM	25	0	18.33	18.30	18.39	19	0
10	64QAM	25	12	18.42	18.43	18.31		
10	64QAM	25	25	18.39	18.54	18.42		
10	64QAM	50	0	18.40	18.52	18.38		
Channel				37775	38000	38225	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2572.5	2595	2617.5		
5	QPSK	1	0	18.46	18.59	18.39	19	0
5	QPSK	1	12	18.42	18.55	18.38		
5	QPSK	1	24	18.46	18.41	18.37		
5	QPSK	12	0	18.35	18.53	18.43	19	0
5	QPSK	12	7	18.57	18.45	18.44		
5	QPSK	12	13	18.35	18.46	18.43		
5	QPSK	25	0	18.38	18.49	18.47		
5	16QAM	1	0	18.45	18.36	18.41	19	0
5	16QAM	1	12	18.30	18.47	18.31		
5	16QAM	1	24	18.47	18.31	18.45		
5	16QAM	12	0	18.31	18.53	18.47	19	0
5	16QAM	12	7	18.40	18.44	18.37		
5	16QAM	12	13	18.30	18.43	18.37		
5	16QAM	25	0	18.31	18.54	18.47		
5	64QAM	1	0	18.42	18.37	18.38	19	0
5	64QAM	1	12	18.33	18.43	18.35		
5	64QAM	1	24	18.34	18.36	18.59		
5	64QAM	12	0	18.38	18.51	18.44	19	0
5	64QAM	12	7	18.47	18.52	18.46		
5	64QAM	12	13	18.47	18.42	18.44		
5	64QAM	25	0	18.35	18.47	18.40		

Band 41 (2.6G Band)

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				39750	40185	40620	41055	41490		
Frequency (MHz)				2506	2549.5	2593	2636.5	2680		
20	QPSK	1	0	18.29	18.36	18.41	18.38	18.44	19	0
20	QPSK	1	49	18.23	18.35	18.40	18.32	18.30		
20	QPSK	1	99	18.43	18.35	18.31	18.38	18.32		
20	QPSK	50	0	18.24	18.20	18.22	18.23	18.43	19	0
20	QPSK	50	24	18.23	18.22	18.26	18.25	18.27		
20	QPSK	50	50	18.33	18.33	18.35	18.35	18.39		
20	QPSK	100	0	18.25	18.30	18.26	18.37	18.38		
20	16QAM	1	0	18.34	18.21	18.25	18.22	18.38	19	0
20	16QAM	1	49	18.31	18.28	18.25	18.20	18.39		
20	16QAM	1	99	18.34	18.27	18.30	18.25	18.30		
20	16QAM	50	0	18.26	18.20	18.22	18.22	18.26	19	0
20	16QAM	50	24	18.31	18.23	18.27	18.26	18.33		
20	16QAM	50	50	18.22	18.26	18.27	18.35	18.37		
20	16QAM	100	0	18.36	18.34	18.27	18.26	18.35		
20	64QAM	1	0	18.38	18.29	18.15	18.28	18.26	19	0
20	64QAM	1	49	18.14	18.39	18.31	18.37	18.38		
20	64QAM	1	99	18.27	18.27	18.20	18.27	18.31		
20	64QAM	50	0	18.30	18.33	18.35	18.35	18.21	19	0
20	64QAM	50	24	18.24	18.26	18.21	18.27	18.27		
20	64QAM	50	50	18.35	18.20	18.39	18.38	18.32		
20	64QAM	100	0	18.20	18.37	18.29	18.29	18.39		
Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5		
15	QPSK	1	0	17.86	18.01	17.94	18.07	18.22	19	0
15	QPSK	1	37	18.17	17.89	18.27	18.25	18.20		
15	QPSK	1	74	17.78	17.71	17.73	17.73	17.82		
15	QPSK	36	0	18.36	18.22	18.35	18.21	18.39	19	0
15	QPSK	36	20	18.25	18.24	18.32	18.32	18.27		
15	QPSK	36	39	17.89	18.18	18.03	18.09	18.16		
15	QPSK	75	0	18.18	18.30	18.24	18.24	18.21		
15	16QAM	1	0	18.20	18.22	18.24	18.31	18.33	19	0
15	16QAM	1	37	18.22	18.32	18.35	18.30	18.25		
15	16QAM	1	74	17.70	18.18	17.86	17.87	17.78		
15	16QAM	36	0	18.32	18.21	18.39	18.27	18.30	19	0
15	16QAM	36	20	18.20	18.25	18.29	18.38	18.28		
15	16QAM	36	39	17.82	18.17	17.93	17.95	18.15		
15	16QAM	75	0	18.12	18.31	18.25	18.22	18.35		
15	64QAM	1	0	17.96	18.19	18.15	17.76	18.17	19	0
15	64QAM	1	37	18.26	18.03	18.23	18.23	18.27		
15	64QAM	1	74	17.31	17.98	17.51	17.70	17.82		
15	64QAM	36	0	18.35	18.34	18.33	18.38	18.20	19	0
15	64QAM	36	20	18.23	18.34	18.31	18.38	18.21		
15	64QAM	36	39	18.07	18.31	17.95	18.06	18.26		
15	64QAM	75	0	18.09	18.30	18.13	18.22	18.24		
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	17.43	17.54	17.48	17.68	17.76	19	0
10	QPSK	1	25	17.28	17.44	17.35	17.50	17.45		
10	QPSK	1	49	17.24	17.42	17.45	17.62	17.50		
10	QPSK	25	0	17.12	17.47	17.41	17.64	17.72	19	0
10	QPSK	25	12	17.14	17.47	17.27	17.59	17.53		
10	QPSK	25	25	17.22	17.33	17.25	17.51	17.57		
10	QPSK	50	0	17.04	17.45	17.45	17.56	17.60		
10	16QAM	1	0	17.61	17.70	17.77	18.08	17.97	19	0
10	16QAM	1	25	17.64	17.51	17.47	18.03	17.82		
10	16QAM	1	49	17.60	17.32	17.72	17.86	17.86		
10	16QAM	25	0	17.32	17.42	17.43	17.66	17.61	19	0
10	16QAM	25	12	17.39	17.33	17.27	17.63	17.58		
10	16QAM	25	25	17.10	17.38	17.27	17.52	17.54		
10	16QAM	50	0	17.26	17.47	17.35	17.58	17.58		
10	64QAM	1	0	17.02	17.50	17.56	17.89	17.86	19	0
10	64QAM	1	25	17.13	17.65	17.44	17.48	17.85		
10	64QAM	1	49	17.42	17.56	17.57	17.78	17.48		
10	64QAM	25	0	17.33	17.55	17.52	17.63	17.43	19	0
10	64QAM	25	12	17.33	17.53	17.38	17.57	17.80		
10	64QAM	25	25	17.28	17.43	17.39	17.68	17.44		
10	64QAM	50	0	17.26	17.49	17.43	17.59	17.64		
Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5		
5	QPSK	1	0	17.37	17.30	17.25	17.45	17.56	19	0
5	QPSK	1	12	17.17	17.17	17.12	17.51	17.48		
5	QPSK	1	24	17.13	17.31	17.18	17.29	17.53		
5	QPSK	12	0	17.22	17.32	17.34	17.56	17.57	19	0
5	QPSK	12	7	17.21	17.31	17.35	17.45	17.52		
5	QPSK	12	13	17.16	17.33	17.25	17.46	17.52		
5	QPSK	25	0	17.24	17.24	17.29	17.51	17.55		
5	16QAM	1	0	17.42	17.34	17.32	17.69	17.88	19	0
5	16QAM	1	12	17.46	17.47	17.42	17.87	18.05		
5	16QAM	1	24	17.53	17.23	17.30	17.65	17.68		
5	16QAM	12	0	17.27	17.40	17.42	17.47	17.78	19	0
5	16QAM	12	7	17.20	17.39	17.32	17.47	17.54		
5	16QAM	12	13	17.12	17.19	17.22	17.48	17.38		
5	16QAM	25	0	17.21	17.27	17.20	17.44	17.50		
5	64QAM	1	0	17.49	17.51	17.54	17.63	17.61	19	0
5	64QAM	1	12	17.44	17.23	17.26	17.51	17.50		
5	64QAM	1	24	17.27	17.38	17.30	17.58	17.50		
5	64QAM	12	0	17.30	17.36	17.32	17.71	17.73	19	0
5	64QAM	12	7	17.25	17.33	17.34	17.62	17.76		
5	64QAM	12	13	17.18	17.24	17.24	17.53	17.45		
5	64QAM	25	0	17.21	17.56	17.30	17.59	17.50		

WWAN Bottom Antenna--Receiver off

GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GSM 1 Tx slot	32.51	32.86	32.87	34.00	23.51	23.86	23.87	25.00
GPRS 1 Tx slot	32.49	32.79	32.86	34.00	23.49	23.79	23.86	25.00
GPRS 2 Tx slots	30.90	30.93	30.91	32.00	24.90	24.93	24.91	26.00
GPRS 3 Tx slots	28.44	28.66	28.85	30.00	24.18	24.40	24.59	25.74
GPRS 4 Tx slots	27.94	28.10	28.08	29.00	24.94	25.10	25.08	26.00
EDGE(GMSK 1 Tx slot)	32.41	32.74	32.82	34.00	23.41	23.74	23.82	25.00
EDGE(GMSK 2 Tx slots)	30.88	30.90	30.88	32.00	24.88	24.90	24.88	26.00
EDGE(GMSK 3 Tx slots)	28.39	28.61	28.82	30.00	24.13	24.35	24.56	25.74
EDGE(GMSK 4 Tx slots)	27.91	28.08	28.01	29.00	24.91	25.08	25.01	26.00
EDGE(8PSK 1 Tx slot)	25.53	25.67	25.61	27.00	16.53	16.67	16.61	18.00
EDGE(8PSK 2 Tx slots)	24.42	24.19	24.34	25.50	18.42	18.19	18.34	19.50
EDGE(8PSK 3 Tx slots)	23.41	22.92	23.20	24.50	19.15	18.66	18.94	20.24
EDGE(8PSK 4 Tx slots)	22.64	22.31	22.47	23.50	19.64	19.31	19.47	20.50

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM 1 Tx slot	24.48	24.89	24.63	26.00	15.48	15.89	15.63	17.00
GPRS 1 Tx slot	24.45	24.82	24.58	26.00	15.45	15.82	15.58	17.00
GPRS 2 Tx slots	21.30	21.51	21.80	23.00	15.30	15.51	15.80	17.00
GPRS 3 Tx slots	20.69	20.85	21.00	22.00	16.43	16.59	16.74	17.74
GPRS 4 Tx slots	19.87	19.78	19.85	21.00	16.87	16.78	16.85	18.00
EDGE(GMSK 1 Tx slot)	24.42	24.82	24.56	26.00	15.42	15.82	15.56	17.00
EDGE(GMSK 2 Tx slots)	21.28	21.45	21.71	23.00	15.28	15.45	15.71	17.00
EDGE(GMSK 3 Tx slots)	20.65	20.82	20.95	22.00	16.39	16.56	16.69	17.74
EDGE(GMSK 4 Tx slots)	19.53	19.73	19.82	21.00	16.53	16.73	16.82	18.00
EDGE(8PSK 1 Tx slot)	21.63	21.64	21.51	23.00	12.63	12.64	12.51	14.00
EDGE(8PSK 2 Tx slots)	18.84	18.88	18.76	20.00	12.84	12.88	12.76	14.00
EDGE(8PSK 3 Tx slots)	17.44	17.58	17.54	19.00	13.18	13.32	13.28	14.74
EDGE(8PSK 4 Tx slots)	15.57	15.87	15.74	17.00	12.57	12.87	12.74	14.00

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)	WCDMA V			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel		9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
3GPP Rel 99	AMR 12.2Kbps	20.17	20.21	20.31	21.50	20.25	20.36	19.98	21.30	23.65	23.74	23.81	25.00
3GPP Rel 99	RMC 12.2Kbps	20.18	20.23	20.32	21.50	20.24	20.38	20.00	21.30	23.66	23.75	23.82	25.00
3GPP Rel 6	HSDPA Subtest-1	19.15	19.24	19.24	20.50	19.24	19.24	19.03	20.30	22.34	22.45	22.58	24.00
3GPP Rel 6	HSDPA Subtest-2	19.17	19.23	19.23	20.50	19.26	19.21	18.98	20.30	22.34	22.46	22.58	24.00
3GPP Rel 6	HSDPA Subtest-3	18.66	18.70	18.70	20.00	18.78	18.75	18.50	19.80	21.87	21.96	22.09	23.50
3GPP Rel 6	HSDPA Subtest-4	18.65	18.71	18.72	20.00	18.77	18.74	18.50	19.80	21.84	21.96	22.08	23.50
3GPP Rel 8	DC-HSDPA Subtest-1	19.11	19.22	19.13	20.50	19.17	19.20	18.99	20.30	22.29	22.34	22.45	24.00
3GPP Rel 8	DC-HSDPA Subtest-2	19.10	19.17	19.09	20.50	19.21	19.17	18.96	20.30	22.28	22.33	22.43	24.00
3GPP Rel 8	DC-HSDPA Subtest-3	18.42	18.57	18.56	20.00	18.66	18.63	18.31	19.80	21.79	21.88	21.99	23.50
3GPP Rel 8	DC-HSDPA Subtest-4	18.40	18.60	18.57	20.00	18.63	18.62	18.32	19.80	21.80	21.89	21.99	23.50
3GPP Rel 6	HSUPA Subtest-1	16.52	16.70	16.77	18.00	16.35	16.57	16.32	17.80	21.86	21.91	22.07	24.00
3GPP Rel 6	HSUPA Subtest-2	14.61	14.66	14.64	16.00	14.45	14.62	14.41	15.80	19.85	19.98	20.17	22.00
3GPP Rel 6	HSUPA Subtest-3	15.62	15.68	15.59	17.00	15.51	15.74	15.46	16.80	20.88	20.99	21.15	23.00
3GPP Rel 6	HSUPA Subtest-4	14.76	14.73	14.58	16.00	15.16	15.18	14.70	15.80	19.83	20.03	20.17	22.00
3GPP Rel 6	HSUPA Subtest-5	16.40	16.60	16.80	18.00	16.90	17.00	16.70	17.80	21.90	22.00	22.10	24.00
3GPP Rel 7	HSPA+ (16QAM) Subtest-1	14.39	14.58	14.41	15.50	14.28	14.54	14.34	15.30	19.72	19.83	19.94	21.50

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				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	19.68	19.69	19.80		
20	QPSK	1	49	19.58	19.84	19.50	20.6	0
20	QPSK	1	99	19.55	19.76	19.54		
20	QPSK	50	0	19.54	19.74	19.61		
20	QPSK	50	24	19.58	19.52	19.56	20.6	0
20	QPSK	50	50	19.50	19.43	19.52		
20	QPSK	100	0	19.55	19.73	19.72		
20	16QAM	1	0	19.53	19.52	19.60		
20	16QAM	1	49	19.42	19.78	19.76	20.6	0
20	16QAM	1	99	19.48	19.47	19.46		
20	16QAM	50	0	19.54	19.59	19.53		
20	16QAM	50	24	19.58	19.54	19.53	20.6	0
20	16QAM	50	50	19.48	19.43	19.51		
20	16QAM	100	0	19.50	19.52	19.53		
20	64QAM	1	0	19.47	19.41	19.58		
20	64QAM	1	49	19.52	19.57	19.54	20.6	0
20	64QAM	1	99	19.54	19.50	19.57		
20	64QAM	50	0	19.54	19.59	19.54		
20	64QAM	50	24	19.59	19.52	19.53	20.6	0
20	64QAM	50	50	19.49	19.42	19.50		
20	64QAM	100	0	19.55	19.55	19.54		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	19.79	19.47	19.47		
15	QPSK	1	37	19.43	19.49	19.37	20.6	0
15	QPSK	1	74	19.71	19.74	19.76		
15	QPSK	36	0	19.47	19.51	19.62		
15	QPSK	36	20	19.48	19.41	19.63	20.6	0
15	QPSK	36	39	19.46	19.49	19.64		
15	QPSK	75	0	19.53	19.46	19.66		
15	16QAM	1	0	19.56	19.61	19.64		
15	16QAM	1	37	19.46	19.42	19.77	20.6	0
15	16QAM	1	74	19.50	19.50	19.57		
15	16QAM	36	0	19.50	19.56	19.68		
15	16QAM	36	20	19.48	19.40	19.63	20.6	0
15	16QAM	36	39	19.47	19.47	19.62		
15	16QAM	75	0	19.57	19.47	19.62		
15	64QAM	1	0	19.41	19.49	19.53		
15	64QAM	1	37	19.45	19.32	19.66	20.6	0
15	64QAM	1	74	19.44	19.43	19.42		
15	64QAM	36	0	19.49	19.56	19.65		
15	64QAM	36	20	19.48	19.42	19.66	20.6	0
15	64QAM	36	39	19.46	19.48	19.67		
15	64QAM	75	0	19.52	19.45	19.62		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	19.52	19.58	19.50		
10	QPSK	1	25	19.45	19.32	19.58	20.6	0
10	QPSK	1	49	19.45	19.59	19.66		
10	QPSK	25	0	19.53	19.54	19.67		
10	QPSK	25	12	19.59	19.43	19.61	20.6	0
10	QPSK	25	25	19.57	19.43	19.74		
10	QPSK	50	0	19.53	19.51	19.41		
10	16QAM	1	0	19.47	19.48	19.51		
10	16QAM	1	25	19.48	19.40	19.58	20.6	0
10	16QAM	1	49	19.57	19.48	19.56		
10	16QAM	25	0	19.52	19.53	19.52		
10	16QAM	25	12	19.51	19.42	19.53	20.6	0
10	16QAM	25	25	19.56	19.39	19.52		
10	16QAM	50	0	19.48	19.53	19.40		
10	64QAM	1	0	19.44	19.48	19.46		
10	64QAM	1	25	19.56	19.55	19.41	20.6	0
10	64QAM	1	49	19.44	19.59	19.49		
10	64QAM	25	0	19.51	19.51	19.53		
10	64QAM	25	12	19.51	19.41	19.52	20.6	0
10	64QAM	25	25	19.59	19.44	19.54		
10	64QAM	50	0	19.49	19.52	19.40		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	19.51	19.59	19.58		
5	QPSK	1	12	19.32	19.33	19.49	20.6	0
5	QPSK	1	24	19.47	19.39	19.58		
5	QPSK	12	0	19.56	19.56	19.64		
5	QPSK	12	7	19.48	19.47	19.67	20.6	0
5	QPSK	12	13	19.60	19.46	19.60		
5	QPSK	25	0	19.56	19.51	19.64		
5	16QAM	1	0	19.49	19.54	19.45		
5	16QAM	1	12	19.53	19.59	19.43	20.6	0
5	16QAM	1	24	19.58	19.69	19.48		
5	16QAM	12	0	19.57	19.59	19.66		
5	16QAM	12	7	19.48	19.50	19.68	20.6	0
5	16QAM	12	13	19.60	19.50	19.63		
5	16QAM	25	0	19.58	19.50	19.64		
5	64QAM	1	0	19.59	19.47	19.43		
5	64QAM	1	12	19.69	19.62	19.57	20.6	0
5	64QAM	1	24	19.50	19.66	19.54		
5	64QAM	12	0	19.57	19.56	19.67		
5	64QAM	12	7	19.49	19.49	19.68	20.6	0
5	64QAM	12	13	19.60	19.47	19.65		
5	64QAM	25	0	19.55	19.50	19.64		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	19.41	19.41	19.53		
3	QPSK	1	8	19.42	19.29	19.57	20.6	0
3	QPSK	1	14	19.35	19.35	19.53		
3	QPSK	8	0	19.46	19.49	19.63		
3	QPSK	8	4	19.50	19.46	19.61	20.6	0
3	QPSK	8	7	19.42	19.48	19.59		
3	QPSK	15	0	19.45	19.42	19.64		
3	16QAM	1	0	19.79	19.70	19.49		
3	16QAM	1	8	19.75	19.74	19.48	20.6	0
3	16QAM	1	14	19.61	19.67	19.46		
3	16QAM	8	0	19.55	19.58	19.50		
3	16QAM	8	4	19.54	19.54	19.51	20.6	0
3	16QAM	8	7	19.50	19.57	19.68		
3	16QAM	15	0	19.49	19.46	19.60		
3	64QAM	1	0	19.51	19.63	19.43		
3	64QAM	1	8	19.59	19.68	19.54	20.6	0
3	64QAM	1	14	19.56	19.57	19.55		
3	64QAM	8	0	19.54	19.52	19.67		
3	64QAM	8	4	19.53	19.50	19.68	20.6	0
3	64QAM	8	7	19.48	19.50	19.62		
3	64QAM	15	0	19.49	19.43	19.65		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	19.40	19.37	19.46		
1.4	QPSK	1	3	19.47	19.38	19.63		
1.4	QPSK	1	5	19.38	19.30	19.54	20.6	0
1.4	QPSK	3	0	19.42	19.35	19.55		
1.4	QPSK	3	1	19.49	19.33	19.61		
1.4	QPSK	3	3	19.43	19.30	19.57		
1.4	QPSK	6	0	19.45	19.30	19.58	20.6	0
1.4	16QAM	1	0	19.71	19.64	19.41		
1.4	16QAM	1	3	19.70	19.69	19.43		
1.4	16QAM	1	5	19.62	19.69	19.43	20.6	0
1.4	16QAM	3	0	19.52	19.50	19.65		
1.4	16QAM	3	1	19.61	19.53	19.67		
1.4	16QAM	3	3	19.49	19.50	19.62		
1.4	16QAM	6	0	19.46	19.39	19.59	20.6	0
1.4	64QAM	1	0	19.60	19.64	19.53		
1.4	64QAM	1	3	19.55	19.57	19.55		
1.4	64QAM	1	5	19.58	19.60	19.57	20.6	0
1.4	64QAM	3	0	19.57	19.57	19.67		
1.4	64QAM	3	1	19.65	19.56	19.57		
1.4	64QAM	3	3	19.55	19.53	19.51		
1.4	64QAM	6	0	19.45	19.41	19.59	20.6	0

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				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	19.62	19.81	19.75		
20	QPSK	1	49	19.36	19.44	19.59	20.6	0
20	QPSK	1	99	19.70	19.85	19.73		
20	QPSK	50	0	19.68	19.78	19.44		
20	QPSK	50	24	19.62	19.69	19.69	20.6	0
20	QPSK	50	50	19.64	19.70	19.76		
20	QPSK	100	0	19.69	19.70	19.65		
20	16QAM	1	0	19.55	19.65	19.64		
20	16QAM	1	49	19.45	19.48	19.57	20.6	0
20	16QAM	1	99	19.59	19.62	19.69		
20	16QAM	50	0	19.66	19.74	19.44		
20	16QAM	50	24	19.62	19.67	19.50	20.6	0
20	16QAM	50	50	19.62	19.52	19.59		
20	16QAM	100	0	19.50	19.54	19.55		
20	64QAM	1	0	19.47	19.51	19.54		
20	64QAM	1	49	19.66	19.65	19.42	20.6	0
20	64QAM	1	99	19.43	19.58	19.60		
20	64QAM	50	0	19.51	19.55	19.43		
20	64QAM	50	24	19.60	19.66	19.52	20.6	0
20	64QAM	50	50	19.65	19.51	19.56		
20	64QAM	100	0	19.50	19.53	19.52		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	19.43	19.54	19.55		
15	QPSK	1	37	19.42	19.45	19.43	20.6	0
15	QPSK	1	74	19.46	19.57	19.46		
15	QPSK	36	0	19.68	19.67	19.56		
15	QPSK	36	20	19.50	19.52	19.55	20.6	0
15	QPSK	36	39	19.55	19.66	19.61		
15	QPSK	75	0	19.62	19.67	19.58		
15	16QAM	1	0	19.67	19.64	19.69		
15	16QAM	1	37	19.59	19.44	19.52	20.6	0
15	16QAM	1	74	19.61	19.61	19.66		
15	16QAM	36	0	19.67	19.51	19.57		
15	16QAM	36	20	19.54	19.53	19.54	20.6	0
15	16QAM	36	39	19.56	19.67	19.59		
15	16QAM	75	0	19.61	19.65	19.59		
15	64QAM	1	0	19.56	19.69	19.61		
15	64QAM	1	37	19.68	19.63	19.56	20.6	0
15	64QAM	1	74	19.61	19.66	19.55		
15	64QAM	36	0	19.69	19.66	19.59		
15	64QAM	36	20	19.54	19.55	19.58	20.6	0
15	64QAM	36	39	19.56	19.51	19.62		
15	64QAM	75	0	19.57	19.64	19.57		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	19.76	19.45	19.41		
10	QPSK	1	25	19.41	19.53	19.53	20.6	0
10	QPSK	1	49	19.76	19.52	19.53		
10	QPSK	25	0	19.49	19.61	19.70		
10	QPSK	25	12	19.57	19.68	19.75	20.6	0
10	QPSK	25	25	19.62	19.63	19.75		
10	QPSK	50	0	19.54	19.63	19.77		
10	16QAM	1	0	19.56	19.66	19.60		
10	16QAM	1	25	19.47	19.52	19.59	20.6	0
10	16QAM	1	49	19.60	19.61	19.61		
10	16QAM	25	0	19.49	19.65	19.51		
10	16QAM	25	12	19.56	19.68	19.55	20.6	0
10	16QAM	25	25	19.61	19.60	19.52		
10	16QAM	50	0	19.56	19.65	19.54		
10	64QAM	1	0	19.55	19.57	19.59		
10	64QAM	1	25	19.50	19.50	19.59	20.6	0
10	64QAM	1	49	19.56	19.53	19.62		
10	64QAM	25	0	19.49	19.63	19.68		
10	64QAM	25	12	19.55	19.65	19.55	20.6	0
10	64QAM	25	25	19.61	19.63	19.53		
10	64QAM	50	0	19.56	19.64	19.57		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	19.60	19.62	19.69		
5	QPSK	1	12	19.33	19.49	19.50	20.6	0
5	QPSK	1	24	19.41	19.53	19.61		
5	QPSK	12	0	19.45	19.64	19.73		
5	QPSK	12	7	19.46	19.59	19.64	20.6	0
5	QPSK	12	13	19.42	19.59	19.64		
5	QPSK	25	0	19.50	19.57	19.69		
5	16QAM	1	0	19.50	19.51	19.56		
5	16QAM	1	12	19.56	19.51	19.52	20.6	0
5	16QAM	1	24	19.55	19.47	19.55		
5	16QAM	12	0	19.52	19.65	19.55		
5	16QAM	12	7	19.50	19.63	19.68	20.6	0
5	16QAM	12	13	19.47	19.57	19.65		
5	16QAM	25	0	19.52	19.57	19.51		
5	64QAM	1	0	19.55	19.48	19.54		
5	64QAM	1	12	19.58	19.52	19.43	20.6	0
5	64QAM	1	24	19.61	19.51	19.42		
5	64QAM	12	0	19.49	19.65	19.57		
5	64QAM	12	7	19.51	19.65	19.66	20.6	0
5	64QAM	12	13	19.44	19.58	19.67		
5	64QAM	25	0	19.50	19.54	19.68		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	19.51	19.63	19.61		
3	QPSK	1	8	19.31	19.54	19.59	20.6	0
3	QPSK	1	14	19.36	19.51	19.60		
3	QPSK	8	0	19.38	19.58	19.65		
3	QPSK	8	4	19.36	19.61	19.63	20.6	0
3	QPSK	8	7	19.40	19.63	19.64		
3	QPSK	15	0	19.48	19.67	19.58		
3	16QAM	1	0	19.59	19.59	19.55		
3	16QAM	1	8	19.55	19.51	19.55	20.6	0
3	16QAM	1	14	19.54	19.44	19.49		
3	16QAM	8	0	19.56	19.65	19.55		
3	16QAM	8	4	19.53	19.65	19.50	20.6	0
3	16QAM	8	7	19.53	19.65	19.69		
3	16QAM	15	0	19.53	19.65	19.65		
3	64QAM	1	0	19.68	19.42	19.55		
3	64QAM	1	8	19.64	19.57	19.57	20.6	0
3	64QAM	1	14	19.68	19.53	19.47		
3	64QAM	8	0	19.52	19.60	19.50		
3	64QAM	8	4	19.54	19.66	19.68	20.6	0
3	64QAM	8	7	19.50	19.64	19.67		
3	64QAM	15	0	19.49	19.65	19.61		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	19.48	19.53	19.59		
1.4	QPSK	1	3	19.34	19.59	19.64		
1.4	QPSK	1	5	19.22	19.54	19.55	20.6	0
1.4	QPSK	3	0	19.39	19.58	19.62		
1.4	QPSK	3	1	19.42	19.57	19.66		
1.4	QPSK	3	3	19.32	19.57	19.59		
1.4	QPSK	6	0	19.31	19.54	19.63	20.6	0
1.4	16QAM	1	0	19.58	19.47	19.48		
1.4	16QAM	1	3	19.66	19.48	19.56		
1.4	16QAM	1	5	19.54	19.45	19.48	20.6	0
1.4	16QAM	3	0	19.44	19.65	19.68		
1.4	16QAM	3	1	19.44	19.62	19.53		
1.4	16QAM	3	3	19.33	19.57	19.65		
1.4	16QAM	6	0	19.41	19.59	19.68	20.6	0
1.4	64QAM	1	0	19.48	19.53	19.57		
1.4	64QAM	1	3	19.52	19.54	19.59		
1.4	64QAM	1	5	19.35	19.64	19.50	20.6	0
1.4	64QAM	3	0	19.48	19.50	19.52		
1.4	64QAM	3	1	19.66	19.50	19.40		
1.4	64QAM	3	3	19.52	19.66	19.52		
1.4	64QAM	6	0	19.43	19.54	19.65	20.6	0

Band 5 (Celluar Band)
Part 22H(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				20450	20525	20600		
Frequency (MHz)				829	836.5	844		
10	QPSK	1	0	23.54	23.51	23.54		
10	QPSK	1	25	23.37	23.41	23.56	24.8	0
10	QPSK	1	49	23.93	23.92	23.90		
10	QPSK	25	0	23.02	22.78	22.98		
10	QPSK	25	12	22.63	22.65	22.95	23.8	1
10	QPSK	25	25	22.59	22.77	22.95		
10	QPSK	50	0	22.86	22.70	22.82		
10	16QAM	1	0	22.47	23.11	23.10		
10	16QAM	1	25	22.62	22.78	22.97	23.8	1
10	16QAM	1	49	23.25	22.94	23.25		
10	16QAM	25	0	21.59	21.64	22.06		
10	16QAM	25	12	21.60	21.73	22.01	22.8	2
10	16QAM	25	25	21.58	21.78	22.03		
10	16QAM	50	0	21.52	21.67	21.89		
10	64QAM	1	0	21.83	21.77	22.35		
10	64QAM	1	25	21.68	21.93	21.95	22.8	2
10	64QAM	1	49	21.63	21.98	22.29		
10	64QAM	25	0	20.41	20.70	21.00		
10	64QAM	25	12	20.48	20.71	21.04	21.8	3
10	64QAM	25	25	20.51	20.78	20.91		
10	64QAM	50	0	20.58	20.69	20.96		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	23.46	23.50	23.48		
5	QPSK	1	12	23.26	23.38	23.37	24.8	0
5	QPSK	1	24	23.41	23.59	23.72		
5	QPSK	12	0	22.39	22.71	22.71		
5	QPSK	12	7	22.37	22.64	22.69	23.8	1
5	QPSK	12	13	22.28	22.64	22.72		
5	QPSK	25	0	22.45	22.62	22.70		
5	16QAM	1	0	22.97	22.78	22.67		
5	16QAM	1	12	22.27	22.78	22.84	23.8	1
5	16QAM	1	24	22.93	22.85	22.88		
5	16QAM	12	0	21.39	21.74	21.70		
5	16QAM	12	7	21.40	21.73	21.66	22.8	2
5	16QAM	12	13	21.40	21.71	21.81		
5	16QAM	25	0	21.42	21.62	21.71		
5	64QAM	1	0	21.44	21.71	21.91		
5	64QAM	1	12	21.50	21.71	21.90	22.8	2
5	64QAM	1	24	21.69	21.75	21.95		
5	64QAM	12	0	20.41	20.72	20.79		
5	64QAM	12	7	20.35	20.68	20.66	21.8	3
5	64QAM	12	13	20.34	20.77	20.70		
5	64QAM	25	0	20.39	20.54	20.69		
Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	23.30	23.43	23.44		
3	QPSK	1	8	23.29	23.39	23.51	24.8	0
3	QPSK	1	14	23.32	23.70	23.64		
3	QPSK	8	0	22.44	22.70	22.72		
3	QPSK	8	4	22.33	22.65	22.65	23.8	1
3	QPSK	8	7	22.33	22.63	22.71		
3	QPSK	15	0	22.36	22.66	22.72		
3	16QAM	1	0	22.62	22.91	23.00		
3	16QAM	1	8	22.80	23.05	23.07	23.8	1
3	16QAM	1	14	22.42	23.15	23.09		
3	16QAM	8	0	21.23	21.69	21.68		
3	16QAM	8	4	21.37	21.71	21.72	22.8	2
3	16QAM	8	7	21.45	21.73	21.78		
3	16QAM	15	0	21.30	21.70	21.61		
3	64QAM	1	0	21.59	21.80	21.93		
3	64QAM	1	8	21.58	21.91	21.92	22.8	2
3	64QAM	1	14	21.27	21.95	21.99		
3	64QAM	8	0	20.25	20.63	20.66		
3	64QAM	8	4	20.30	20.61	20.76	21.8	3
3	64QAM	8	7	20.48	20.61	20.79		
3	64QAM	15	0	20.22	20.54	20.64		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	23.31	23.38	23.34		
1.4	QPSK	1	3	23.31	23.37	23.44		
1.4	QPSK	1	5	23.22	23.44	23.55	24.8	0
1.4	QPSK	3	0	23.28	23.53	23.50		
1.4	QPSK	3	1	23.37	23.55	23.52		
1.4	QPSK	3	3	23.36	23.50	23.56		
1.4	QPSK	6	0	22.23	22.54	22.60	23.8	1
1.4	16QAM	1	0	22.65	22.49	22.71		
1.4	16QAM	1	3	22.61	22.75	22.71		
1.4	16QAM	1	5	22.93	23.15	22.53	23.8	1
1.4	16QAM	3	0	22.34	22.50	22.75		
1.4	16QAM	3	1	22.38	22.65	22.66		
1.4	16QAM	3	3	22.34	22.62	22.69		
1.4	16QAM	6	0	21.24	21.64	21.77	22.8	2
1.4	64QAM	1	0	21.56	21.75	21.55		
1.4	64QAM	1	3	21.56	21.85	21.43		
1.4	64QAM	1	5	21.59	21.87	21.62	22.8	2
1.4	64QAM	3	0	21.46	21.62	21.78		
1.4	64QAM	3	1	21.12	21.71	21.81		
1.4	64QAM	3	3	21.08	21.62	21.80		
1.4	64QAM	6	0	20.29	20.48	20.63	21.8	3

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	19.69	19.77	19.71	20.5	0
20	QPSK	1	49	19.55	19.66	19.69		
20	QPSK	1	99	19.72	19.74	19.60		
20	QPSK	50	0	19.59	19.64	19.58	20.5	0
20	QPSK	50	24	19.44	19.42	19.41		
20	QPSK	50	50	19.43	19.43	19.46		
20	QPSK	100	0	19.66	19.68	19.55		
20	16QAM	1	0	19.66	19.69	19.42	20.5	0
20	16QAM	1	49	19.57	19.53	19.67		
20	16QAM	1	99	19.66	19.44	19.58		
20	16QAM	50	0	19.59	19.41	19.40	20.5	0
20	16QAM	50	24	19.41	19.44	19.45		
20	16QAM	50	50	19.42	19.44	19.46		
20	16QAM	100	0	19.40	19.43	19.45		
20	64QAM	1	0	19.44	19.67	19.57	20.5	0
20	64QAM	1	49	19.46	19.41	19.57		
20	64QAM	1	99	19.58	19.47	19.47		
20	64QAM	50	0	19.58	19.42	19.69	20.5	0
20	64QAM	50	24	19.40	19.43	19.45		
20	64QAM	50	50	19.41	19.44	19.46		
20	64QAM	100	0	19.41	19.44	19.40		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	19.34	19.42	19.40	20.5	0
15	QPSK	1	37	19.50	19.61	19.41		
15	QPSK	1	74	19.41	19.43	19.54		
15	QPSK	36	0	19.61	19.44	19.45	20.5	0
15	QPSK	36	20	19.66	19.47	19.43		
15	QPSK	36	39	19.64	19.45	19.47		
15	QPSK	75	0	19.63	19.46	19.49		
15	16QAM	1	0	19.45	19.69	19.63	20.5	0
15	16QAM	1	37	19.48	19.59	19.65		
15	16QAM	1	74	19.61	19.64	19.44		
15	16QAM	36	0	19.62	19.46	19.43	20.5	0
15	16QAM	36	20	19.67	19.45	19.69		
15	16QAM	36	39	19.66	19.46	19.42		
15	16QAM	75	0	19.58	19.47	19.53		
15	64QAM	1	0	19.44	19.57	19.51	20.5	0
15	64QAM	1	37	19.69	19.44	19.51		
15	64QAM	1	74	19.47	19.49	19.68		
15	64QAM	36	0	19.64	19.45	19.45	20.5	0
15	64QAM	36	20	19.68	19.47	19.46		
15	64QAM	36	39	19.66	19.47	19.46		
15	64QAM	75	0	19.56	19.46	19.50		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	19.41	19.52	19.52	20.5	0
10	QPSK	1	25	19.42	19.64	19.60		
10	QPSK	1	49	19.43	19.43	19.67		
10	QPSK	25	0	19.58	19.45	19.64	20.5	0
10	QPSK	25	12	19.42	19.62	19.60		
10	QPSK	25	25	19.59	19.49	19.66		
10	QPSK	50	0	19.62	19.67	19.43		
10	16QAM	1	0	19.42	19.49	19.44	20.5	0
10	16QAM	1	25	19.49	19.56	19.52		
10	16QAM	1	49	19.67	19.44	19.55		
10	16QAM	25	0	19.61	19.44	19.64	20.5	0
10	16QAM	25	12	19.43	19.64	19.60		
10	16QAM	25	25	19.58	19.49	19.63		
10	16QAM	50	0	19.62	19.65	19.42		
10	64QAM	1	0	19.57	19.68	19.62	20.5	0
10	64QAM	1	25	19.66	19.47	19.40		
10	64QAM	1	49	19.53	19.64	19.44		
10	64QAM	25	0	19.59	19.42	19.63	20.5	0
10	64QAM	25	12	19.43	19.62	19.59		
10	64QAM	25	25	19.62	19.49	19.40		
10	64QAM	50	0	19.61	19.68	19.41		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	19.42	19.43	19.48	20.5	0
5	QPSK	1	12	19.56	19.57	19.53		
5	QPSK	1	24	19.50	19.64	19.57		
5	QPSK	12	0	19.63	19.41	19.66	20.5	0
5	QPSK	12	7	19.66	19.65	19.65		
5	QPSK	12	13	19.52	19.40	19.62		
5	QPSK	25	0	19.54	19.66	19.66		
5	16QAM	1	0	19.46	19.63	19.59	20.5	0
5	16QAM	1	12	19.49	19.46	19.49		
5	16QAM	1	24	19.48	19.52	19.50		
5	16QAM	12	0	19.65	19.41	19.41	20.5	0
5	16QAM	12	7	19.57	19.65	19.64		
5	16QAM	12	13	19.49	19.43	19.63		
5	16QAM	25	0	19.56	19.66	19.40		
5	64QAM	1	0	19.42	19.52	19.48	20.5	0
5	64QAM	1	12	19.69	19.44	19.47		
5	64QAM	1	24	19.66	19.40	19.40		
5	64QAM	12	0	19.66	19.40	19.41	20.5	0
5	64QAM	12	7	19.65	19.69	19.69		
5	64QAM	12	13	19.49	19.44	19.69		
5	64QAM	25	0	19.66	19.63	19.68		

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	23.31	23.31	23.32	24.5	0
10	QPSK	1	25	23.34	23.57	23.43		
10	QPSK	1	49	23.38	23.68	23.56		
10	QPSK	25	0	22.18	22.37	22.27	23.5	1
10	QPSK	25	12	22.26	22.26	22.30		
10	QPSK	25	25	22.26	22.24	22.25		
10	QPSK	50	0	22.29	22.35	22.32		
10	16QAM	1	0	22.79	22.65	22.31	23.5	1
10	16QAM	1	25	22.29	22.64	22.60		
10	16QAM	1	49	22.60	22.85	22.60		
10	16QAM	25	0	21.29	21.30	21.31	22.5	2
10	16QAM	25	12	21.22	21.27	21.39		
10	16QAM	25	25	21.24	21.28	21.34		
10	16QAM	50	0	21.32	21.27	21.44		
10	64QAM	1	0	21.61	21.46	21.58	22.5	2
10	64QAM	1	25	22.00	21.50	21.39		
10	64QAM	1	49	21.54	21.78	21.82		
10	64QAM	25	0	20.29	20.25	20.25	21.5	3
10	64QAM	25	12	20.31	20.29	20.32		
10	64QAM	25	25	20.29	20.26	20.29		
10	64QAM	50	0	20.29	20.26	20.29		
Channel				23035	23095	23155	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				701.5	707.5	713.5		
5	QPSK	1	0	23.07	23.24	23.11	24.5	0
5	QPSK	1	12	23.15	23.15	23.13		
5	QPSK	1	24	23.19	23.23	23.24		
5	QPSK	12	0	22.20	22.22	22.21	23.5	1
5	QPSK	12	7	22.15	22.16	22.20		
5	QPSK	12	13	22.17	22.18	22.32		
5	QPSK	25	0	22.17	22.15	22.24		
5	16QAM	1	0	22.36	22.77	22.84	23.5	1
5	16QAM	1	12	22.22	22.70	22.31		
5	16QAM	1	24	22.38	22.41	22.40		
5	16QAM	12	0	21.28	21.19	21.39	22.5	2
5	16QAM	12	7	21.24	21.12	21.25		
5	16QAM	12	13	21.23	21.22	21.26		
5	16QAM	25	0	21.31	21.16	21.24		
5	64QAM	1	0	21.27	21.48	21.49	22.5	2
5	64QAM	1	12	21.13	21.49	21.59		
5	64QAM	1	24	21.56	21.51	21.02		
5	64QAM	12	0	20.25	20.18	20.34	21.5	3
5	64QAM	12	7	20.29	20.35	20.25		
5	64QAM	12	13	20.25	20.13	20.27		
5	64QAM	25	0	20.21	20.27	20.24		
Channel				23025	23095	23165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				700.5	707.5	714.5		
3	QPSK	1	0	23.09	23.17	23.09	24.5	0
3	QPSK	1	8	23.15	23.27	23.17		
3	QPSK	1	14	23.11	23.20	23.22		
3	QPSK	8	0	22.14	22.23	22.18	23.5	1
3	QPSK	8	4	22.16	22.30	22.28		
3	QPSK	8	7	22.20	22.24	22.19		
3	QPSK	15	0	22.18	22.15	22.23		
3	16QAM	1	0	22.29	22.33	22.75	23.5	1
3	16QAM	1	8	22.37	22.68	22.82		
3	16QAM	1	14	22.57	22.68	22.61		
3	16QAM	8	0	21.24	21.25	21.16	22.5	2
3	16QAM	8	4	21.28	21.35	21.27		
3	16QAM	8	7	21.24	21.35	21.33		
3	16QAM	15	0	21.17	21.13	21.42		
3	64QAM	1	0	21.20	21.16	21.35	22.5	2
3	64QAM	1	8	21.51	21.29	21.50		
3	64QAM	1	14	21.35	21.43	21.04		
3	64QAM	8	0	20.20	20.29	20.18	21.5	3
3	64QAM	8	4	20.23	20.31	20.29		
3	64QAM	8	7	20.35	20.22	20.37		
3	64QAM	15	0	20.18	20.11	20.16		
Channel				23017	23095	23173	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				699.7	707.5	715.3		
1.4	QPSK	1	0	22.93	23.00	22.98	24.5	0
1.4	QPSK	1	3	23.26	23.12	23.29		
1.4	QPSK	1	5	23.09	23.21	23.06		
1.4	QPSK	3	0	23.11	23.04	23.04		
1.4	QPSK	3	1	23.07	23.06	23.09		
1.4	QPSK	3	3	23.15	23.30	23.09		
1.4	QPSK	6	0	22.00	22.02	22.05	23.5	1
1.4	16QAM	1	0	22.55	22.67	22.54	23.5	1
1.4	16QAM	1	3	22.57	22.49	22.08		
1.4	16QAM	1	5	22.17	22.26	22.15		
1.4	16QAM	3	0	22.13	21.97	22.13		
1.4	16QAM	3	1	22.18	22.09	22.17		
1.4	16QAM	3	3	21.93	22.23	22.09		
1.4	16QAM	6	0	21.23	21.18	21.22	22.5	2
1.4	64QAM	1	0	21.31	20.91	21.47	22.5	2
1.4	64QAM	1	3	21.36	21.29	21.50		
1.4	64QAM	1	5	21.36	21.12	21.34		
1.4	64QAM	3	0	21.35	21.27	21.28		
1.4	64QAM	3	1	20.96	21.28	21.42		
1.4	64QAM	3	3	21.33	21.20	21.13		
1.4	64QAM	6	0	20.05	20.01	20.06	21.5	3

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				23780	23790	23800		
Frequency (MHz)				709	710	711		
10	QPSK	1	0	23.21	23.07	23.27	24.5	0
10	QPSK	1	25	23.05	23.32	23.18		
10	QPSK	1	49	23.39	23.43	23.31		
10	QPSK	25	0	22.10	22.12	22.12	23.5	1
10	QPSK	25	12	22.12	22.05	22.08		
10	QPSK	25	25	22.15	22.16	22.11		
10	QPSK	50	0	22.14	22.16	22.12		
10	16QAM	1	0	22.41	22.32	22.27	23.5	1
10	16QAM	1	25	22.44	22.05	22.20		
10	16QAM	1	49	22.49	22.47	22.90		
10	16QAM	25	0	21.17	21.07	21.15	22.5	2
10	16QAM	25	12	21.11	21.08	21.08		
10	16QAM	25	25	21.16	21.21	21.03		
10	16QAM	50	0	21.07	21.13	21.19		
10	64QAM	1	0	21.61	21.47	21.60	22.5	2
10	64QAM	1	25	21.26	21.35	20.91		
10	64QAM	1	49	21.57	21.60	21.39		
10	64QAM	25	0	20.09	20.12	20.16	21.5	3
10	64QAM	25	12	20.15	20.16	20.14		
10	64QAM	25	25	20.19	20.09	20.12		
10	64QAM	50	0	20.15	20.06	20.11		
Channel				23755	23790	23825	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				706.5	710	713.5		
5	QPSK	1	0	22.98	23.05	23.06	24.5	0
5	QPSK	1	12	23.03	22.94	23.00		
5	QPSK	1	24	23.02	23.15	23.02		
5	QPSK	12	0	21.95	22.02	22.03	23.5	1
5	QPSK	12	7	22.06	22.11	22.03		
5	QPSK	12	13	22.07	22.04	22.14		
5	QPSK	25	0	22.04	22.15	22.07		
5	16QAM	1	0	22.57	22.42	22.28	23.5	1
5	16QAM	1	12	22.45	22.62	22.26		
5	16QAM	1	24	22.60	22.55	22.64		
5	16QAM	12	0	20.92	21.06	21.13	22.5	2
5	16QAM	12	7	21.13	21.19	21.12		
5	16QAM	12	13	21.14	21.12	21.20		
5	16QAM	25	0	20.99	20.99	20.98		
5	64QAM	1	0	21.41	21.37	21.29	22.5	2
5	64QAM	1	12	21.31	21.21	21.08		
5	64QAM	1	24	21.14	20.91	21.20		
5	64QAM	12	0	20.04	20.06	20.16	21.5	3
5	64QAM	12	7	20.18	20.10	20.13		
5	64QAM	12	13	20.22	20.10	20.14		
5	64QAM	25	0	19.97	20.10	19.90		

Band 26 for FCC
(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				26765	26865	26965		
Frequency (MHz)				821.5	831.5	841.5		
15	QPSK	1	0	23.76	23.81	23.62		
15	QPSK	1	37	23.47	23.40	23.48	24.8	0
15	QPSK	1	74	23.70	23.49	23.32		
15	QPSK	36	0	22.62	22.68	22.49		
15	QPSK	36	20	22.52	22.90	22.53	23.8	1
15	QPSK	36	39	22.53	22.70	22.57		
15	QPSK	75	0	22.51	22.82	22.79		
15	16QAM	1	0	22.76	22.72	22.63		
15	16QAM	1	37	22.89	22.76	22.70	23.8	1
15	16QAM	1	74	22.84	22.77	22.54		
15	16QAM	36	0	21.56	21.69	21.53		
15	16QAM	36	20	21.45	21.37	21.56	22.8	2
15	16QAM	36	39	21.48	21.70	21.67		
15	16QAM	75	0	21.48	21.77	21.56		
15	64QAM	1	0	21.52	21.84	21.98		
15	64QAM	1	37	21.96	22.02	21.85	22.8	2
15	64QAM	1	74	21.82	21.83	21.79		
15	64QAM	36	0	20.54	20.77	20.63		
15	64QAM	36	20	20.44	20.70	20.62	21.8	3
15	64QAM	36	39	20.54	20.80	20.66		
15	64QAM	75	0	20.48	20.78	20.58		
Channel				26740	26865	26990	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				819	831.5	844		
10	QPSK	1	0	23.61	23.69	23.40		
10	QPSK	1	25	23.45	23.46	23.61	24.8	0
10	QPSK	1	49	23.49	23.52	23.51		
10	QPSK	25	0	22.60	23.32	23.22		
10	QPSK	25	12	22.48	22.89	23.27	23.8	1
10	QPSK	25	25	22.55	22.78	23.26		
10	QPSK	50	0	22.64	23.23	23.21		
10	16QAM	1	0	22.78	23.45	23.33		
10	16QAM	1	25	22.66	23.19	23.34	23.8	1
10	16QAM	1	49	22.91	23.47	23.54		
10	16QAM	25	0	21.63	21.80	22.40		
10	16QAM	25	12	21.56	21.82	22.13	22.8	2
10	16QAM	25	25	21.66	21.84	22.24		
10	16QAM	50	0	21.63	21.95	22.32		
10	64QAM	1	0	21.55	22.24	22.27		
10	64QAM	1	25	21.64	22.05	22.19	22.8	2
10	64QAM	1	49	21.90	21.95	22.50		
10	64QAM	25	0	20.61	20.73	21.10		
10	64QAM	25	12	20.54	20.84	21.18	21.8	3
10	64QAM	25	25	20.64	20.86	21.28		
10	64QAM	50	0	20.56	20.90	21.24		
Channel				26715	26865	27015	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				816.5	831.5	846.5		
5	QPSK	1	0	23.47	23.56	23.60		
5	QPSK	1	12	23.49	23.66	23.54	24.8	0
5	QPSK	1	24	23.54	23.72	23.55		
5	QPSK	12	0	22.55	22.78	23.22		
5	QPSK	12	7	22.56	22.77	23.27	23.8	1
5	QPSK	12	13	22.57	22.80	23.23		
5	QPSK	25	0	22.56	22.80	23.16		
5	16QAM	1	0	23.11	23.08	23.39		
5	16QAM	1	12	23.02	23.11	23.42	23.8	1
5	16QAM	1	24	23.23	22.90	23.33		
5	16QAM	12	0	21.68	21.85	22.30		
5	16QAM	12	7	21.75	21.79	22.18	22.8	2
5	16QAM	12	13	21.76	21.88	22.20		
5	16QAM	25	0	21.61	21.76	22.25		
5	64QAM	1	0	21.93	22.29	22.03		
5	64QAM	1	12	21.83	22.11	22.06	22.8	2
5	64QAM	1	24	21.40	22.02	22.09		
5	64QAM	12	0	20.65	20.78	21.30		
5	64QAM	12	7	20.73	20.79	21.19	21.8	3
5	64QAM	12	13	20.75	20.88	21.27		
5	64QAM	25	0	20.66	20.69	21.23		
Channel				26705	26865	27025	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				815.5	831.5	847.5		
3	QPSK	1	0	23.44	23.55	23.68		
3	QPSK	1	8	23.50	23.55	23.73	24.8	0
3	QPSK	1	14	23.51	23.47	23.58		
3	QPSK	8	0	22.70	22.76	23.16		
3	QPSK	8	4	22.60	22.69	23.21	23.8	1
3	QPSK	8	7	22.49	22.76	23.30		
3	QPSK	15	0	22.56	22.77	23.18		
3	16QAM	1	0	23.20	23.47	23.26		
3	16QAM	1	8	22.87	23.09	23.31	23.8	1
3	16QAM	1	14	22.99	23.13	23.31		
3	16QAM	8	0	21.76	21.78	22.27		
3	16QAM	8	4	21.71	21.82	22.31	22.8	2
3	16QAM	8	7	21.61	21.79	22.27		
3	16QAM	15	0	21.72	21.68	22.37		
3	64QAM	1	0	21.72	22.08	22.35		
3	64QAM	1	8	21.97	22.09	22.23	22.8	2
3	64QAM	1	14	21.60	21.87	22.37		
3	64QAM	8	0	20.70	20.73	21.26		
3	64QAM	8	4	20.70	20.76	21.30	21.8	3
3	64QAM	8	7	20.77	20.73	21.16		
3	64QAM	15	0	20.61	20.85	21.24		
Channel				26697	26865	27033	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				814.7	831.5	848.3		
1.4	QPSK	1	0	23.35	23.38	23.64		
1.4	QPSK	1	3	23.66	23.69	23.68		
1.4	QPSK	1	5	23.62	23.62	23.52	24.8	0
1.4	QPSK	3	0	23.49	23.73	23.51		
1.4	QPSK	3	1	23.56	23.57	23.53		
1.4	QPSK	3	3	23.69	23.62	23.50		
1.4	QPSK	6	0	22.47	22.59	23.10	23.8	1
1.4	16QAM	1	0	23.02	23.09	23.30		
1.4	16QAM	1	3	22.80	23.03	23.25		
1.4	16QAM	1	5	22.73	23.15	23.30	23.8	1
1.4	16QAM	3	0	22.53	22.68	23.14		
1.4	16QAM	3	1	22.70	22.54	23.13		
1.4	16QAM	3	3	22.45	22.70	23.10		
1.4	16QAM	6	0	21.73	21.78	22.10	22.8	2
1.4	64QAM	1	0	21.74	21.83	22.22		
1.4	64QAM	1	3	21.46	21.58	22.12		
1.4	64QAM	1	5	21.58	21.99	22.33	22.8	2
1.4	64QAM	3	0	21.44	21.47	22.10		
1.4	64QAM	3	1	21.76	21.77	22.19		
1.4	64QAM	3	3	21.82	21.78	22.15		
1.4	64QAM	6	0	20.60	20.61	21.08	21.8	3

Band 38(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				37850	38000	38150		
Frequency (MHz)				2580	2595	2610		
20	QPSK	1	0	19.42	19.40	19.39	20.5	0
20	QPSK	1	49	19.33	19.24	19.40		
20	QPSK	1	99	19.48	19.14	19.41		
20	QPSK	50	0	19.23	18.89	19.38	20.5	0
20	QPSK	50	24	19.32	18.91	19.37		
20	QPSK	50	50	19.38	19.27	19.30		
20	QPSK	100	0	19.36	19.10	19.33		
20	16QAM	1	0	19.05	19.05	19.02	20.5	0
20	16QAM	1	49	19.02	19.05	19.01		
20	16QAM	1	99	19.04	18.84	18.82		
20	16QAM	50	0	19.18	19.04	19.08	20.5	0
20	16QAM	50	24	19.00	18.97	19.00		
20	16QAM	50	50	19.01	19.13	19.01		
20	16QAM	100	0	19.02	19.02	19.09		
20	64QAM	1	0	19.01	19.09	19.03	20.5	0
20	64QAM	1	49	19.18	18.94	19.04		
20	64QAM	1	99	19.06	18.81	18.71		
20	64QAM	50	0	19.08	19.06	19.01	20.5	0
20	64QAM	50	24	19.17	18.83	19.02		
20	64QAM	50	50	19.00	19.08	19.08		
20	64QAM	100	0	19.07	19.06	19.02		
Channel				37825	38000	38175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2577.5	2595	2612.5		
15	QPSK	1	0	19.32	19.34	19.22	20.5	0
15	QPSK	1	37	19.39	19.13	19.28		
15	QPSK	1	74	19.22	19.02	19.22		
15	QPSK	36	0	19.33	18.90	19.24	20.5	0
15	QPSK	36	20	19.38	19.02	19.35		
15	QPSK	36	39	19.31	19.25	19.22		
15	QPSK	75	0	19.38	19.14	19.35		
15	16QAM	1	0	19.33	19.26	19.32	20.5	0
15	16QAM	1	37	19.21	19.03	19.32		
15	16QAM	1	74	19.30	19.17	19.28		
15	16QAM	36	0	19.00	18.81	19.01	20.5	0
15	16QAM	36	20	19.05	19.11	19.07		
15	16QAM	36	39	19.06	19.15	19.09		
15	16QAM	75	0	19.05	19.15	19.03		
15	64QAM	1	0	19.01	19.02	19.09	20.5	0
15	64QAM	1	37	19.00	18.89	19.01		
15	64QAM	1	74	19.07	18.83	18.96		
15	64QAM	36	0	19.01	18.91	19.01	20.5	0
15	64QAM	36	20	19.36	19.03	19.38		
15	64QAM	36	39	19.21	19.26	19.31		
15	64QAM	75	0	19.37	19.15	19.21		
Channel				37800	38000	38200	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2575	2595	2615		
10	QPSK	1	0	19.38	19.24	19.30	20.5	0
10	QPSK	1	25	19.22	19.31	19.31		
10	QPSK	1	49	19.34	19.39	19.38		
10	QPSK	25	0	19.24	19.38	19.34	20.5	0
10	QPSK	25	12	19.38	19.31	19.27		
10	QPSK	25	25	19.21	19.36	19.23		
10	QPSK	50	0	19.24	19.37	19.26		
10	16QAM	1	0	19.26	19.26	19.32	20.5	0
10	16QAM	1	25	19.29	19.25	19.37		
10	16QAM	1	49	19.31	19.38	19.11		
10	16QAM	25	0	19.25	19.31	19.28	20.5	0
10	16QAM	25	12	19.38	19.33	19.23		
10	16QAM	25	25	19.32	19.30	19.25		
10	16QAM	50	0	19.36	19.31	19.20		
10	64QAM	1	0	19.20	19.32	19.20	20.5	0
10	64QAM	1	25	19.24	19.32	19.16		
10	64QAM	1	49	19.25	19.04	18.93		
10	64QAM	25	0	19.39	19.35	19.22	20.5	0
10	64QAM	25	12	19.32	19.14	19.37		
10	64QAM	25	25	19.34	19.31	19.37		
10	64QAM	50	0	19.23	19.32	19.22		
Channel				37775	38000	38225	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2572.5	2595	2617.5		
5	QPSK	1	0	19.26	19.39	19.36	20.5	0
5	QPSK	1	12	19.29	19.23	19.39		
5	QPSK	1	24	19.35	19.34	19.34		
5	QPSK	12	0	19.34	19.35	19.29	20.5	0
5	QPSK	12	7	19.30	19.21	19.21		
5	QPSK	12	13	19.36	19.33	19.20		
5	QPSK	25	0	19.26	19.38	19.24		
5	16QAM	1	0	19.29	19.39	19.35	20.5	0
5	16QAM	1	12	19.22	19.22	19.23		
5	16QAM	1	24	19.31	19.29	19.36		
5	16QAM	12	0	19.27	19.21	19.39	20.5	0
5	16QAM	12	7	19.32	19.31	19.26		
5	16QAM	12	13	19.31	19.10	19.36		
5	16QAM	25	0	19.20	19.32	19.26		
5	64QAM	1	0	19.36	19.29	19.32	20.5	0
5	64QAM	1	12	19.35	19.31	19.37		
5	64QAM	1	24	19.31	19.23	19.37		
5	64QAM	12	0	19.39	19.17	19.24	20.5	0
5	64QAM	12	7	19.21	19.21	19.21		
5	64QAM	12	13	19.39	19.28	19.39		
5	64QAM	25	0	19.37	19.34	19.29		

Band 41 (2.6G Band)

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				39750	40185	40620	41055	41490		
Frequency (MHz)				2506	2549.5	2593	2636.5	2680		
20	QPSK	1	0	19.28	19.28	19.10	19.18	19.29	20.5	0
20	QPSK	1	49	19.18	19.07	18.88	19.15	18.88		
20	QPSK	1	99	19.24	19.27	19.19	19.25	19.09		
20	QPSK	50	0	19.18	19.16	19.07	19.14	19.23	20.5	0
20	QPSK	50	24	19.16	19.17	19.01	19.05	19.22		
20	QPSK	50	50	19.13	19.00	19.14	19.05	19.15		
20	QPSK	100	0	19.14	19.09	19.00	18.96	19.20		
20	16QAM	1	0	19.00	19.22	19.09	19.02	19.15	20.5	0
20	16QAM	1	49	19.21	19.21	19.21	19.12	19.09		
20	16QAM	1	99	19.04	19.01	19.26	19.04	19.24		
20	16QAM	50	0	19.22	19.14	19.21	19.06	19.21	20.5	0
20	16QAM	50	24	19.22	19.06	19.02	18.93	19.18		
20	16QAM	50	50	19.20	19.14	19.02	19.05	19.11		
20	16QAM	100	0	19.05	19.17	19.08	18.96	19.07		
20	64QAM	1	0	19.04	19.07	19.05	18.91	19.02	20.5	0
20	64QAM	1	49	19.11	19.05	18.96	18.66	19.04		
20	64QAM	1	99	18.66	19.22	19.09	18.93	19.01		
20	64QAM	50	0	19.15	19.19	19.22	18.95	19.21	20.5	0
20	64QAM	50	24	19.20	19.02	18.94	18.96	19.16		
20	64QAM	50	50	19.22	19.07	19.04	18.95	19.13		
20	64QAM	100	0	19.25	19.24	19.21	18.98	19.20		
Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5		
15	QPSK	1	0	18.89	19.05	18.80	18.68	18.72	20.5	0
15	QPSK	1	37	18.86	18.93	18.86	18.64	18.83		
15	QPSK	1	74	18.84	18.73	18.72	18.79	18.74		
15	QPSK	36	0	19.21	19.05	18.96	18.96	19.21	20.5	0
15	QPSK	36	20	19.19	19.20	19.08	19.07	19.17		
15	QPSK	36	39	18.83	19.10	18.74	18.77	18.79		
15	QPSK	75	0	19.03	19.18	19.00	18.89	19.01		
15	16QAM	1	0	19.04	19.06	18.93	18.81	19.14	20.5	0
15	16QAM	1	37	18.94	19.01	19.15	18.80	19.02		
15	16QAM	1	74	18.80	19.01	18.60	18.76	18.60		
15	16QAM	36	0	19.08	19.06	19.02	18.96	19.07	20.5	0
15	16QAM	36	20	19.10	19.11	19.04	18.97	19.19		
15	16QAM	36	39	18.83	19.08	18.73	18.69	18.72		
15	16QAM	75	0	18.99	19.18	18.98	18.94	19.07		
15	64QAM	1	0	18.86	19.05	18.88	18.65	18.78	20.5	0
15	64QAM	1	37	19.00	19.02	18.80	18.63	18.95		
15	64QAM	1	74	18.81	18.79	18.82	18.87	18.83		
15	64QAM	36	0	19.07	19.01	19.00	18.97	19.10	20.5	0
15	64QAM	36	20	19.19	19.04	19.05	19.10	19.13		
15	64QAM	36	39	18.85	18.96	18.73	18.70	18.74		
15	64QAM	75	0	19.15	19.06	18.96	18.91	18.97		
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	19.09	19.19	19.10	19.10	19.06	20.5	0
10	QPSK	1	25	19.12	19.18	19.02	19.10	19.04		
10	QPSK	1	49	18.71	19.06	18.93	19.02	19.06		
10	QPSK	25	0	19.02	19.18	18.83	18.90	19.04	20.5	0
10	QPSK	25	12	18.80	19.03	18.87	18.89	18.95		
10	QPSK	25	25	18.78	19.08	18.85	18.97	18.90		
10	QPSK	50	0	18.89	19.11	18.77	18.97	18.95		
10	16QAM	1	0	19.07	19.09	19.07	19.13	19.01	20.5	0
10	16QAM	1	25	18.85	19.15	18.90	19.05	18.93		
10	16QAM	1	49	18.78	19.02	19.10	19.01	19.00		
10	16QAM	25	0	18.96	19.06	18.85	19.00	18.99	20.5	0
10	16QAM	25	12	18.91	19.14	18.77	18.98	18.88		
10	16QAM	25	25	18.85	18.97	18.73	18.87	18.84		
10	16QAM	50	0	18.89	18.99	18.84	19.07	18.96		
10	64QAM	1	0	18.81	19.07	18.80	19.07	19.05	20.5	0
10	64QAM	1	25	18.86	19.04	18.83	18.60	18.77		
10	64QAM	1	49	18.71	19.00	18.87	18.70	18.77		
10	64QAM	25	0	18.87	19.08	18.89	19.01	18.94	20.5	0
10	64QAM	25	12	18.83	18.94	18.89	18.90	18.92		
10	64QAM	25	25	18.76	19.07	18.94	18.87	18.79		
10	64QAM	50	0	18.90	19.02	18.85	18.87	18.90		
Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5		
5	QPSK	1	0	19.06	19.10	19.19	19.16	19.06	20.5	0
5	QPSK	1	12	19.02	19.03	18.90	19.02	18.92		
5	QPSK	1	24	18.74	19.06	19.04	18.65	18.82		
5	QPSK	12	0	18.78	19.00	18.65	18.89	18.75	20.5	0
5	QPSK	12	7	18.77	19.00	18.73	18.77	18.83		
5	QPSK	12	13	18.78	18.98	18.63	18.75	18.88		
5	QPSK	25	0	18.88	19.10	18.75	18.81	18.85		
5	16QAM	1	0	19.11	18.97	18.84	18.90	19.17	20.5	0
5	16QAM	1	12	18.94	19.02	18.78	18.72	19.01		
5	16QAM	1	24	18.90	18.90	18.89	18.86	18.82		
5	16QAM	12	0	18.76	18.99	18.76	19.04	18.89	20.5	0
5	16QAM	12	7	18.77	19.06	18.74	18.92	18.79		
5	16QAM	12	13	18.78	18.97	18.62	18.81	18.76		
5	16QAM	25	0	18.87	19.05	18.74	19.01	18.89		
5	64QAM	1	0	18.67	18.83	18.60	18.85	18.86	20.5	0
5	64QAM	1	12	18.66	18.94	18.81	18.77	18.87		
5	64QAM	1	24	18.61	19.00	18.74	18.74	18.76		
5	64QAM	12	0	18.82	19.06	18.72	18.88	18.79	20.5	0
5	64QAM	12	7	18.75	18.99	18.72	18.97	18.79		
5	64QAM	12	13	18.83	19.04	18.60	18.85	18.86		
5	64QAM	25	0	18.68	18.93	18.77	18.92	18.83		

Bottom Antenna UL CA

CA_7C											
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					
20850	21048	QPSK	1	0	0	0	1	0	Receiver on	23.81	24.5
21100	20902	QPSK	1	0	0	0	1	0	Receiver on	23.88	24.5
21350	21152	QPSK	1	0	0	0	1	0	Receiver on	23.51	24.5
20850	21048	QPSK	1	0	0	0	1	0	Receiver off	19.51	20.5
21100	20902	QPSK	1	0	0	0	1	0	Receiver off	19.62	20.5
21350	21152	QPSK	1	0	0	0	1	0	Receiver off	19.54	20.5

CA_38C											
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					
37850	38048	QPSK	1	99	0	0	1	0	Receiver on	23.53	24.5
37901	38099	QPSK	1	99	0	0	1	0	Receiver on	23.37	24.5
38150	37952	QPSK	1	99	0	0	1	0	Receiver on	23.43	24.5
37850	38048	QPSK	1	99	0	0	1	0	Receiver off	19.27	20.5
37901	38099	QPSK	1	99	0	0	1	0	Receiver off	19.05	20.5
38150	37952	QPSK	1	99	0	0	1	0	Receiver off	19.02	20.5

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	0	0	0	1	0	Receiver on	22.88	24.5
40185	39987	QPSK	1	0	0	0	1	0	Receiver on	23.37	24.5
40620	40422	QPSK	1	0	0	0	1	0	Receiver on	23.46	24.5
41055	40857	QPSK	1	0	0	0	1	0	Receiver on	23.48	24.5
41490	41292	QPSK	1	0	0	0	1	0	Receiver on	23.61	24.5
39750	39948	QPSK	1	0	0	0	1	0	Receiver off	19.05	20.5
40185	39987	QPSK	1	0	0	0	1	0	Receiver off	19.11	20.5
40620	40422	QPSK	1	0	0	0	1	0	Receiver off	18.99	20.5
41055	40857	QPSK	1	0	0	0	1	0	Receiver off	19.02	20.5
41490	41292	QPSK	1	0	0	0	1	0	Receiver off	19.18	20.5

Top Antenna UL CA

CA_7C											
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					
20850	21048	QPSK	1	0	0	0	1	0	Receiver on	17.44	18.5
21100	20902	QPSK	1	0	0	0	1	0	Receiver on	17.78	18.5
21350	21152	QPSK	1	0	0	0	1	0	Receiver on	17.62	18.5
20850	21048	QPSK	1	0	0	0	1	0	Receiver off	19.03	19.5
21100	20902	QPSK	1	0	0	0	1	0	Receiver off	19.22	19.5
21350	21152	QPSK	1	0	0	0	1	0	Receiver off	19.21	19.5

CA_38C											
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					
37850	38048	QPSK	1	99	0	0	1	0	Receiver on	19.87	20.5
37901	38099	QPSK	1	99	0	0	1	0	Receiver on	19.56	20.5
38150	37952	QPSK	1	99	0	0	1	0	Receiver on	19.81	20.5
37850	38048	QPSK	1	99	0	0	1	0	Receiver off	18.32	19.0
37901	38099	QPSK	1	99	0	0	1	0	Receiver off	18.29	19.0
38150	37952	QPSK	1	99	0	0	1	0	Receiver off	18.31	19.0

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	0	0	0	1	0	Receiver on	19.71	20.5
40185	39987	QPSK	1	0	0	0	1	0	Receiver on	19.78	20.5
40620	40422	QPSK	1	0	0	0	1	0	Receiver on	19.66	20.5
41055	40857	QPSK	1	0	0	0	1	0	Receiver on	19.82	20.5
41490	41292	QPSK	1	0	0	0	1	0	Receiver on	19.91	20.5
39750	39948	QPSK	1	0	0	0	1	0	Receiver off	18.19	19.0
40185	39987	QPSK	1	0	0	0	1	0	Receiver off	18.27	19.0
40620	40422	QPSK	1	0	0	0	1	0	Receiver off	18.33	19.0
41055	40857	QPSK	1	0	0	0	1	0	Receiver off	18.31	19.0
41490	41292	QPSK	1	0	0	0	1	0	Receiver off	18.41	19.0

2CA DL

Configure		CA List	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)	Without CA Tx. Power (dBm)
Inter-Band		CA_5A-41A	Band 5	10M	829	20450	QPSK	1	49	Band 41	20M	2593	40620	23.88	23.93
			Band 41	20M	2680	41490	QPSK	1	0	Band 5	10M	881.5	2525	23.59	23.75
Inter-Band	Contiguous	CA_7B	Band 7	15M	2535	21100	QPSK	1	0	Band 7	5M	2664.3	3193	23.91	24.02
		CA_7C	Band 7	20M	2535	21100	QPSK	1	0	Band 7	20M	2674.8	3298	23.89	24.02
		CA_38C	Band 38	20M	2580	37850	QPSK	1	99	Band 38	20M	2599.8	38048	23.61	23.73
		CA_41C	Band 41	20M	2680	41490	QPSK	1	0	Band 41	20M	2660.2	41292	23.55	23.75
	Non-Contiguous	CA_7A-7A	Band 7	20M	2535	21100	QPSK	1	0	Band 7	5M	2687.5	3425	23.85	24.02
		CA_41A-41A	Band 41	20M	2680	41490	QPSK	1	0	Band 41	5M	2498.5	39675	23.64	23.75

Default Power

2.4GHz WLAN	Ant 1					
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	18.80	20.00	99.24
		6	2437	19.00	20.00	
		11	2462	18.40	20.00	
	802.11g 6Mbps	1	2412	16.20	18.00	98.33
		6	2437	17.90	19.50	
		11	2462	15.80	17.50	
	802.11n-HT20 MCS0	1	2412	16.10	18.00	98.21
		6	2437	17.80	19.50	
		11	2462	16.00	17.50	

5GHz WLAN	Ant 1					
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	17.50	19.00	98.28
		40	5200	17.50	19.00	
		44	5220	17.44	19.00	
		48	5240	17.44	19.00	
	802.11n-HT20 MCS0	36	5180	16.52	18.00	98.16
		40	5200	16.55	18.00	
		44	5220	16.55	18.00	
		48	5240	16.48	18.00	
	802.11n-HT40 MCS0	38	5190	15.66	17.00	96.32
		46	5230	16.27	18.00	
	802.11ac-VHT20 MCS0	36	5180	17.34	19.00	98.16
		40	5200	17.33	19.00	
		44	5220	17.28	19.00	
		48	5240	17.28	19.00	
	802.11ac-VHT40 MCS0	38	5190	15.72	17.00	95.91
		46	5230	17.25	18.00	
	802.11ac-VHT80 MCS0	42	5210	13.89	15.00	93.04

5GHz WLAN	Ant 1					
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	52	5260	17.42	19.00	98.28
		56	5280	17.37	19.00	
		60	5300	17.28	19.00	
		64	5320	17.28	19.00	
	802.11n-HT20 MCS0	52	5260	16.47	18.00	98.16
		56	5280	16.42	18.00	
		60	5300	16.36	18.00	
		64	5320	16.23	18.00	
	802.11n-HT40 MCS0	54	5270	16.18	17.00	96.32
		62	5310	14.72	16.00	
	802.11ac-VHT20 MCS0	52	5260	17.25	19.00	98.16
		56	5280	17.20	19.00	
		60	5300	17.11	19.00	
		64	5320	17.12	19.00	
	802.11ac-VHT40 MCS0	54	5270	17.14	18.00	95.91
		62	5310	14.77	16.00	
	802.11ac-VHT80 MCS0	58	5290	13.74	15.00	93.04

5GHz WLAN	Ant 1					
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	100	5500	17.64	19.00	98.28
		116	5580	17.34	19.00	
		124	5620	17.28	19.00	
		132	5660	17.33	19.00	
		140	5700	17.04	19.00	
	802.11n-HT20 MCS0	100	5500	16.00	17.00	98.16
		116	5580	15.64	17.00	
		124	5620	15.55	17.00	
		132	5660	15.60	17.00	
		140	5700	15.12	17.00	
	802.11n-HT40 MCS0	102	5510	16.62	17.00	96.32
		110	5550	15.52	17.00	
		126	5630	15.28	17.00	
		134	5670	15.30	17.00	
	802.11ac-VHT20 MCS0	100	5500	16.79	17.00	98.16
		116	5580	16.44	17.00	
		124	5620	16.32	17.00	
		132	5660	16.34	17.00	
		140	5700	15.17	17.00	
	802.11ac-VHT40 MCS0	102	5510	16.67	17.00	95.91
		110	5550	16.49	17.00	
		126	5630	16.26	17.00	
		134	5670	16.30	17.00	
	802.11ac-VHT80 MCS0	106	5530	13.22	15.00	93.04
		122	5610	16.04	17.00	

5GHz WLAN	Ant 1					
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a 6Mbps	149	5745	16.17	16.50	98.28
		157	5785	16.28	16.50	
		165	5825	16.43	16.50	
	802.11n-HT20 MCS0	149	5745	15.01	15.50	98.16
		157	5785	15.13	15.50	
		165	5825	15.19	15.50	
	802.11n-HT40 MCS0	151	5755	15.03	15.50	96.32
		159	5795	14.70	15.50	
	802.11ac-VHT20 MCS0	149	5745	15.88	16.50	98.16
		157	5785	15.98	16.50	
		165	5825	16.10	16.50	
	802.11ac-VHT40 MCS0	151	5755	15.70	16.00	95.91
		159	5795	15.68	16.00	
	802.11ac-VHT80 MCS0	155	5775	15.52	16.00	93.04

Power Level for Receiver on

2.4GHz WLAN	Ant 1					
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	15.80	17.00	99.24
		6	2437	16.00	17.00	
		11	2462	15.40	17.00	
	802.11g 6Mbps	1	2412	13.20	15.00	98.33
		6	2437	14.90	16.50	
		11	2462	12.80	14.50	
	802.11n-HT20 MCS0	1	2412	13.10	15.00	98.21
		6	2437	14.80	16.50	
		11	2462	13.00	14.50	

5GHz WLAN	Ant 1					
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	16.40	18.00	98.28
		40	5200	16.50	18.00	
		44	5220	16.44	18.00	
		48	5240	16.44	18.00	
	802.11n-HT20 MCS0	36	5180	15.52	17.00	98.16
		40	5200	15.55	17.00	
		44	5220	15.55	17.00	
		48	5240	15.48	17.00	
	802.11n-HT40 MCS0	38	5190	14.66	16.00	96.32
		46	5230	15.27	17.00	
	802.11ac-VHT20 MCS0	36	5180	16.34	18.00	98.16
		40	5200	16.33	18.00	
		44	5220	16.28	18.00	
		48	5240	16.28	18.00	
	802.11ac-VHT40 MCS0	38	5190	14.72	16.00	95.91
		46	5230	16.25	17.00	
	802.11ac-VHT80 MCS0	42	5210	12.89	14.00	93.04

5GHz WLAN	Ant 1					
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	52	5260	16.42	18.00	98.28
		56	5280	16.37	18.00	
		60	5300	16.28	18.00	
		64	5320	16.28	18.00	
	802.11n-HT20 MCS0	52	5260	15.47	17.00	98.16
		56	5280	15.42	17.00	
		60	5300	15.36	17.00	
		64	5320	15.23	17.00	
	802.11n-HT40 MCS0	54	5270	15.18	16.00	96.32
		62	5310	13.72	15.00	
	802.11ac-VHT20 MCS0	52	5260	16.25	18.00	98.16
		56	5280	16.20	18.00	
		60	5300	16.11	18.00	
		64	5320	16.12	18.00	
	802.11ac-VHT40 MCS0	54	5270	16.14	17.00	95.91
		62	5310	13.77	15.00	
	802.11ac-VHT80 MCS0	58	5290	12.74	14.00	93.04

5GHz WLAN	Ant 1					
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	100	5500	16.64	18.00	98.28
		116	5580	16.34	18.00	
		124	5620	16.28	18.00	
		132	5660	16.33	18.00	
		140	5700	16.04	18.00	
	802.11n-HT20 MCS0	100	5500	15.00	16.00	98.16
		116	5580	14.64	16.00	
		124	5620	14.55	16.00	
		132	5660	14.60	16.00	
		140	5700	14.12	16.00	
	802.11n-HT40 MCS0	102	5510	15.62	16.00	96.32
		110	5550	14.52	16.00	
		126	5630	14.28	16.00	
		134	5670	14.30	16.00	
	802.11ac-VHT20 MCS0	100	5500	15.79	16.00	98.16
		116	5580	15.44	16.00	
		124	5620	15.32	16.00	
		132	5660	15.34	16.00	
		140	5700	14.17	16.00	
	802.11ac-VHT40 MCS0	102	5510	15.67	16.00	95.91
		110	5550	15.49	16.00	
		126	5630	15.26	16.00	
		134	5670	15.30	16.00	
	802.11ac-VHT80 MCS0	106	5530	12.22	14.00	93.04
		122	5610	15.04	16.00	

5GHz WLAN	Ant 1					
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a 6Mbps	149	5745	16.17	16.50	98.28
		157	5785	16.28	16.50	
		165	5825	16.43	16.50	
	802.11n-HT20 MCS0	149	5745	15.01	15.50	98.16
		157	5785	15.13	15.50	
		165	5825	15.19	15.50	
	802.11n-HT40 MCS0	151	5755	15.03	15.50	96.32
		159	5795	14.70	15.50	
	802.11ac-VHT20 MCS0	149	5745	15.88	16.50	98.16
		157	5785	15.98	16.50	
		165	5825	16.10	16.50	
	802.11ac-VHT40 MCS0	151	5755	15.70	16.00	95.91
		159	5795	15.68	16.00	
	802.11ac-VHT80 MCS0	155	5775	15.52	16.00	93.04

Power Level for Receiver off

2.4GHz WLAN	Ant 1					
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	18.80	20.00	99.24
		6	2437	19.00	20.00	
		11	2462	18.40	20.00	
	802.11g 6Mbps	1	2412	16.20	18.00	98.33
		6	2437	17.90	19.50	
		11	2462	15.80	17.50	
	802.11n-HT20 MCS0	1	2412	16.10	18.00	98.21
		6	2437	17.80	19.50	
		11	2462	16.00	17.50	

5GHz WLAN	Ant 1					
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	15.40	17.00	98.28
		40	5200	15.50	17.00	
		44	5220	15.44	17.00	
		48	5240	15.44	17.00	
	802.11n-HT20 MCS0	36	5180	14.52	16.00	98.16
		40	5200	14.55	16.00	
		44	5220	14.55	16.00	
		48	5240	14.48	16.00	
	802.11n-HT40 MCS0	38	5190	13.66	15.00	96.32
		46	5230	14.27	16.00	
	802.11ac-VHT20 MCS0	36	5180	15.34	17.00	98.16
		40	5200	15.33	17.00	
		44	5220	15.28	17.00	
		48	5240	15.28	17.00	
	802.11ac-VHT40 MCS0	38	5190	13.72	15.00	95.91
		46	5230	15.25	16.00	
	802.11ac-VHT80 MCS0	42	5210	11.89	13.00	93.04

5GHz WLAN	Ant 1					
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	52	5260	16.42	18.00	98.28
		56	5280	16.37	18.00	
		60	5300	16.28	18.00	
		64	5320	16.28	18.00	
	802.11n-HT20 MCS0	52	5260	15.47	17.00	98.16
		56	5280	15.42	17.00	
		60	5300	15.36	17.00	
		64	5320	15.23	17.00	
	802.11n-HT40 MCS0	54	5270	15.18	16.00	96.32
		62	5310	13.72	15.00	
	802.11ac-VHT20 MCS0	52	5260	16.25	18.00	98.16
		56	5280	16.20	18.00	
		60	5300	16.11	18.00	
		64	5320	16.12	18.00	
	802.11ac-VHT40 MCS0	54	5270	16.14	17.00	95.91
		62	5310	13.77	15.00	
	802.11ac-VHT80 MCS0	58	5290	12.74	14.00	93.04

5GHz WLAN	Ant 1					
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	100	5500	16.64	18.00	98.28
		116	5580	16.34	18.00	
		124	5620	16.28	18.00	
		132	5660	16.33	18.00	
		140	5700	16.04	18.00	
	802.11n-HT20 MCS0	100	5500	15.00	16.00	98.16
		116	5580	14.64	16.00	
		124	5620	14.55	16.00	
		132	5660	14.60	16.00	
		140	5700	14.12	16.00	
	802.11n-HT40 MCS0	102	5510	15.62	16.00	96.32
		110	5550	14.52	16.00	
		126	5630	14.28	16.00	
		134	5670	14.30	16.00	
	802.11ac-VHT20 MCS0	100	5500	15.79	16.00	98.16
		116	5580	15.44	16.00	
		124	5620	15.32	16.00	
		132	5660	15.34	16.00	
		140	5700	14.17	16.00	
	802.11ac-VHT40 MCS0	102	5510	15.67	16.00	95.91
		110	5550	15.49	16.00	
		126	5630	15.26	16.00	
		134	5670	15.30	16.00	
	802.11ac-VHT80 MCS0	106	5530	12.22	14.00	93.04
		122	5610	15.04	16.00	

5GHz WLAN	Ant 1					
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a 6Mbps	149	5745	16.17	16.50	98.28
		157	5785	16.28	16.50	
		165	5825	16.43	16.50	
	802.11n-HT20 MCS0	149	5745	15.01	15.50	98.16
		157	5785	15.13	15.50	
		165	5825	15.19	15.50	
	802.11n-HT40 MCS0	151	5755	15.03	15.50	96.32
		159	5795	14.70	15.50	
	802.11ac-VHT20 MCS0	149	5745	15.88	16.50	98.16
		157	5785	15.98	16.50	
		165	5825	16.10	16.50	
	802.11ac-VHT40 MCS0	151	5755	15.70	16.00	95.91
		159	5795	15.68	16.00	
	802.11ac-VHT80 MCS0	155	5775	15.52	16.00	93.04

Power Level for Receiver on/off

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	12.70	12.60	12.50	11.50	11.40	11.30	11.50	11.40	11.30	13.50
	CH 39	2441	**13.00**	12.90	12.90	**11.70**	11.60	11.60	**11.70**	11.60	11.60	
	CH 78	2480	11.90	11.80	11.70	10.80	10.70	10.60	10.80	10.60	10.60	

LE v4.0&5.0

Mode	Channel	Frequency (MHz)	Average power (dBm)
			GFSK
LE	CH 00	2402	8.20
	CH 19	2440	8.50
	CH 39	2480	7.90
Tune-up Limit			13.5