D2600V2, Serial No. 1061 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.

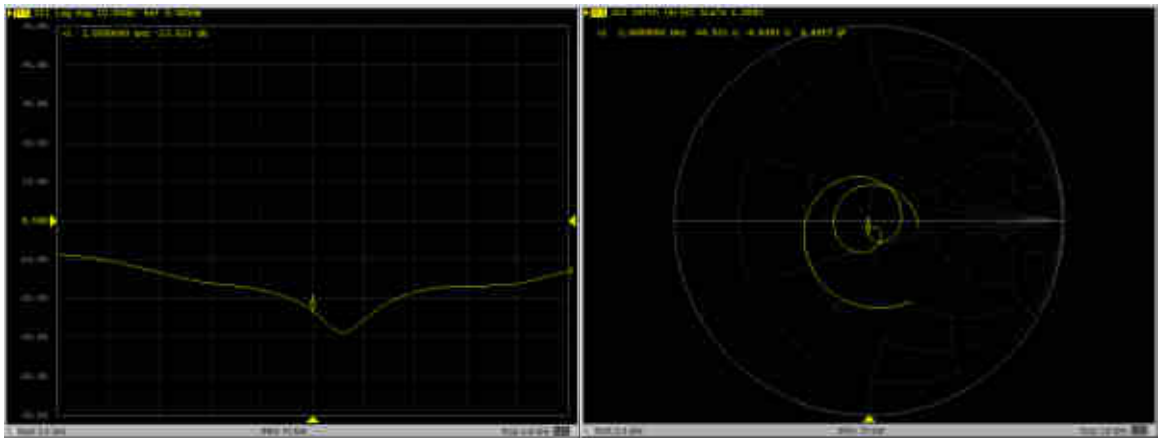
2600V2 – serial no. 1061												
	2600 Head						2600 Body					
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2018.12.07	-23.1		49.8		-7		-22.8		45.6		-5.41	
2019.11.27	-23.0	0.00	48.9	0.90	-6.83	0.17	-22.6	0.01	44.6	1	-5.29	0.12

<Justification of the extended calibration>

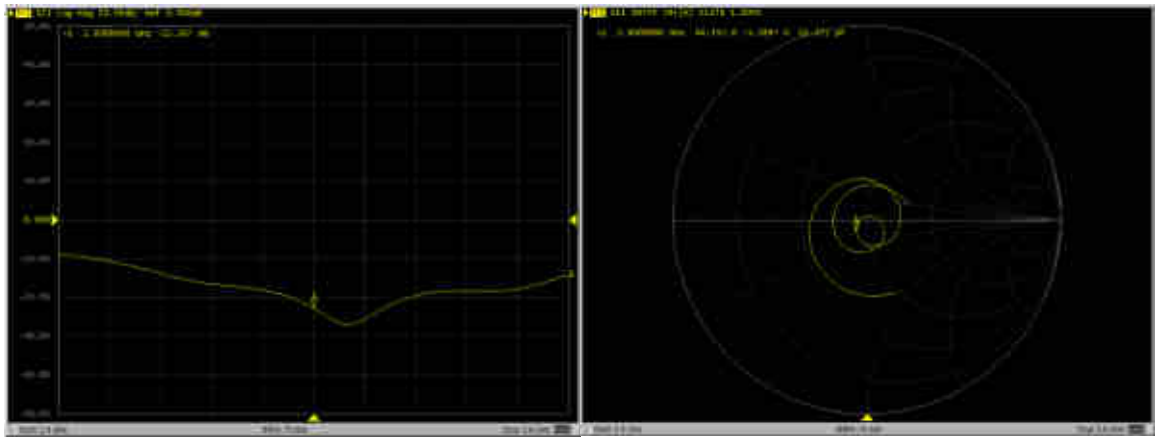
The return loss is < -20dB, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

Dipole Verification Data> D2600V2, serial no. 1061

2600MHz – Head



2600MHz – Body



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

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

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

Accreditation No.: SCS 0108

Client Sporton

Certificate No: D5GHzV2-1113_Sep19

CALIBRATION CERTIFICATE

Object: D5GHzV2 - SN:1113

Calibration procedure(s): QA CAL-22.v4
Calibration Procedure for SAR Validation Sources between 3-6 GHz

Calibration date: September 24, 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)°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	03-Apr-19 (No. 217-02892/02893)	Apr-20
Power sensor NRP-Z91	SN: 103244	03-Apr-19 (No. 217-02892)	Apr-20
Power sensor NRP-Z91	SN: 103245	03-Apr-19 (No. 217-02893)	Apr-20
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-19 (No. 217-02894)	Apr-20
Type-N mismatch combination	SN: 5047.2 / 06327	04-Apr-19 (No. 217-02895)	Apr-20
Reference Probe EX3DV4	SN: 3503	25-Mar-19 (No. EX3-3503_Mar19)	Mar-20
DAE4	SN: 601	30-Apr-19 (No. DAE4-601_Apr19)	Apr-20

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

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

Issued: September 25, 2019

Glossary:

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

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, "Measurement procedure for 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"

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%.

Measurement Conditions

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

DASY Version	DASY5	V52.10.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = 4.0 mm, dz = 1.4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	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	35.1 ± 6 %	4.53 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5250 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.09 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**80.5 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.33 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.1 W/kg ± 19.5 % (k=2)**

Head TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	35.5	5.07 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.6 ± 6 %	4.88 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5600 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.40 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**83.4 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.40 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.8 W/kg ± 19.5 % (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	34.4 ± 6 %	5.03 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °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	8.06 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**80.0 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.30 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**22.8 W/kg ± 19.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 5250 MHz

Impedance, transformed to feed point	51.7 Ω - 6.2 jΩ
Return Loss	- 24.0 dB

Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	56.0 Ω - 2.7 jΩ
Return Loss	- 24.1 dB

Antenna Parameters with Head TSL at 5750 MHz

Impedance, transformed to feed point	56.7 Ω - 1.0 jΩ
Return Loss	- 23.9 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.195 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

Date: 24.09.2019

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1113

Communication System: UID 0 - CW; Frequency: 5250 MHz, Frequency: 5600 MHz, Frequency: 5750 MHz
Medium parameters used: f = 5250 MHz; σ = 4.53 S/m; ε_r = 35.1; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5600 MHz; σ = 4.88 S/m; ε_r = 34.6; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5750 MHz; σ = 5.03 S/m; ε_r = 34.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.4, 5.4, 5.4) @ 5250 MHz, ConvF(4.95, 4.95, 4.95) @ 5600 MHz, ConvF(4.98, 4.98, 4.98) @ 5750 MHz; Calibrated: 25.03.2019
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.04.2019
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.2(1504); SEMCAD X 14.6.12(7470)

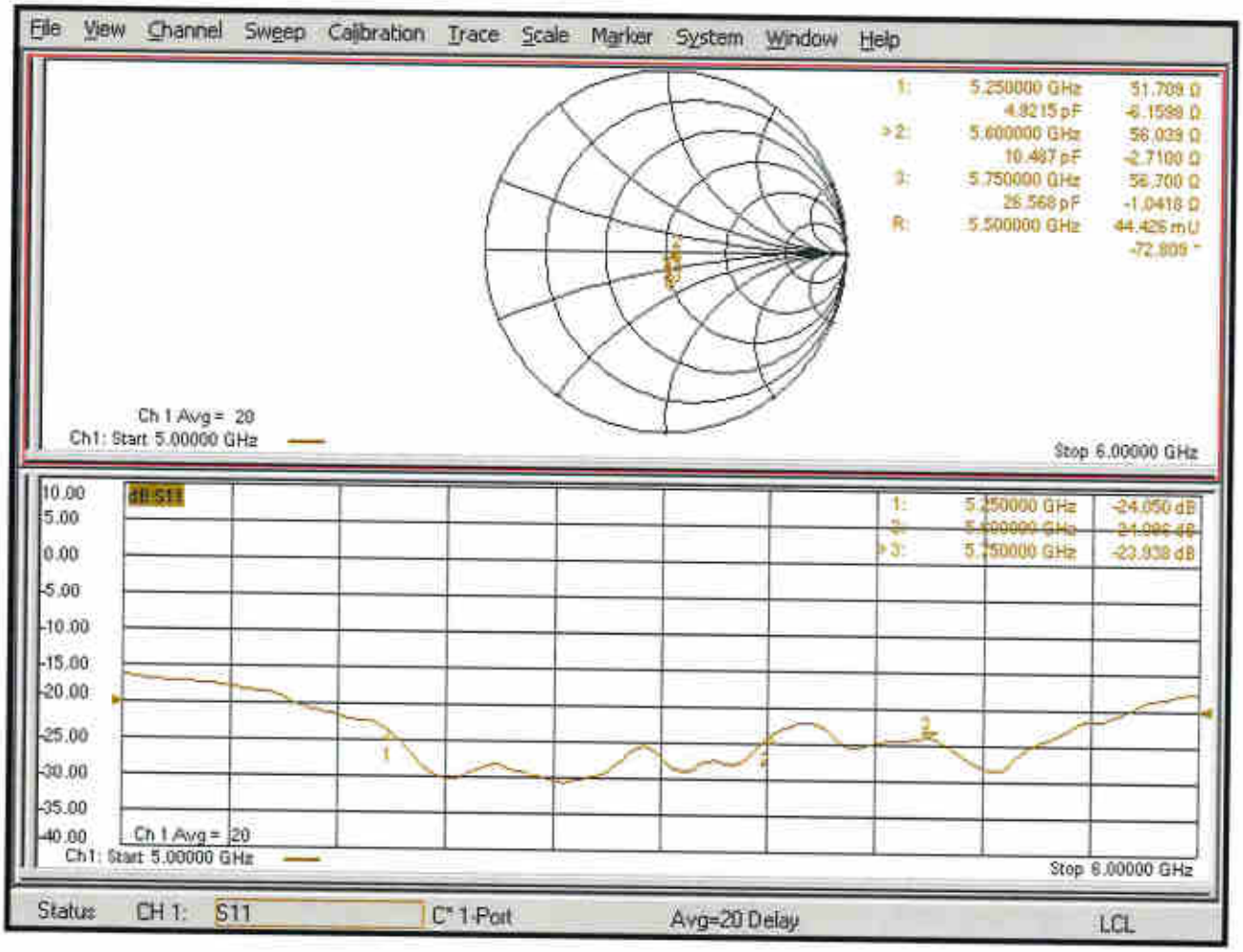
Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5250 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 78.54 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 27.9 W/kg
SAR(1 g) = 8.09 W/kg; SAR(10 g) = 2.33 W/kg
Maximum value of SAR (measured) = 18.1 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 78.00 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 31.1 W/kg
SAR(1 g) = 8.40 W/kg; SAR(10 g) = 2.40 W/kg
Maximum value of SAR (measured) = 19.4 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5750 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 75.13 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 31.8 W/kg
SAR(1 g) = 8.06 W/kg; SAR(10 g) = 2.30 W/kg
Maximum value of SAR (measured) = 19.0 W/kg

0 dB = 18.1 W/kg = 12.58 dBW/kg

Impedance Measurement Plot for Head TSL



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

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

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

Accreditation No.: SCS 0108

Client Sporton

Certificate No: DAE4-1338_Nov19

CALIBRATION CERTIFICATE

Object	DAE4 - SD 000 D04 BM - SN: 1338
Calibration procedure(s)	QA CAL-06.v29 Calibration procedure for the data acquisition electronics (DAE)
Calibration date:	November 20, 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)°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	07-Jan-19 (in house check)	In house check: Jan-20
Calibrator Box V2.1	SE UMS 006 AA 1002	07-Jan-19 (in house check)	In house check: Jan-20

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

Issued: November 20, 2019

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.

Appendix (Additional assessments outside the scope of SCS0108)

1. DC Voltage Linearity

High Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	200032.47	-3.15	-0.00
Channel X	+ Input	20005.24	-0.41	-0.00
Channel X	- Input	-20006.33	-0.08	0.00
Channel Y	+ Input	200035.56	-0.12	-0.00
Channel Y	+ Input	20004.04	-1.44	-0.01
Channel Y	- Input	-20008.42	-2.09	0.01
Channel Z	+ Input	200033.57	-2.10	-0.00
Channel Z	+ Input	20004.49	-0.96	-0.00
Channel Z	- Input	-20008.50	-2.10	0.01

Low Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	2001.19	0.11	0.01
Channel X	+ Input	201.01	-0.01	-0.00
Channel X	- Input	-199.18	-0.36	0.18
Channel Y	+ Input	2001.08	0.17	0.01
Channel Y	+ Input	199.87	-0.94	-0.47
Channel Y	- Input	-200.25	-1.26	0.64
Channel Z	+ Input	2000.89	-0.01	-0.00
Channel Z	+ Input	199.87	-0.86	-0.43
Channel Z	- Input	-199.91	-0.91	0.46

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	7.80	5.74
	- 200	-6.09	-7.67
Channel Y	200	-21.26	-21.58
	- 200	19.76	19.35
Channel Z	200	-2.47	-2.52
	- 200	0.78	0.74

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	-	3.28	-2.96
Channel Y	200	7.86	-	4.97
Channel Z	200	8.87	6.08	-

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	403.688 ± 0.02% (k=2)	404.268 ± 0.02% (k=2)	404.224 ± 0.02% (k=2)
Low Range	3.97425 ± 1.50% (k=2)	3.97933 ± 1.50% (k=2)	3.97493 ± 1.50% (k=2)

Connector Angle

Connector Angle to be used in DASY system	239.5 ° ± 1 °

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	16190	14025
Channel Y	16291	16862
Channel Z	16104	15099

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	-0.07	-1.18	1.09	0.42
Channel Y	-0.64	-1.62	0.80	0.39
Channel Z	-0.63	-1.81	0.20	0.36

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

In Collaboration with
s p e a g
CALIBRATION LABORATORY
Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com Http://www.chinattl.cn

中国认可
国际互认
校准
CALIBRATION
CNAS L0570

Client : **Amphenol** **Certificate No: Z20-60071**

CALIBRATION CERTIFICATE

Object	DAE4 - SN: 799
Calibration Procedure(s)	FF-Z11-002-01 Calibration Procedure for the Data Acquisition Electronics (DAEx)
Calibration date:	February 10, 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)℃ 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:	Lin Hao	SAR Test Engineer	
Approved by:	Qi Dianyuan	SAR Project Leader	

Issued: February 11, 2020

In Collaboration with
s p e a g
CALIBRATION LABORATORY
Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com Http://www.chinattl.cn

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.

In Collaboration with
s p e a g
CALIBRATION LABORATORY
Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com Http://www.chinattl.cn

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	405.644 ± 0.15% (k=2)	405.087 ± 0.15% (k=2)	405.831 ± 0.15% (k=2)
Low Range	3.98565 ± 0.7% (k=2)	4.00142 ± 0.7% (k=2)	4.00514 ± 0.7% (k=2)

Connector Angle

Connector Angle to be used in DASY system	177° ± 1 °

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

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

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

Accreditation No.: SCS 0108

Client Sporton-CN (Auden)

Certificate No: DAE4-1210_Jul19

CALIBRATION CERTIFICATE

Object	DAE4 - SD 000 D04 BM - SN: 1210
Calibration procedure(s)	QA CAL-06.v29 Calibration procedure for the data acquisition electronics (DAE)
Calibration date:	July 23, 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)°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-18 (No:23488)	Sep-19
Secondary Standards	**ID #**	**Check Date (in house)**	**Scheduled Check**
Auto DAE Calibration Unit	SE UWS 053 AA 1001	07-Jan-19 (in house check)	In house check: Jan-20
Calibrator Box V2.1	SE UMS 006 AA 1002	07-Jan-19 (in house check)	In house check: Jan-20

	Name	Function	Signature
Calibrated by:	Adrian Gehring	Laboratory Technician	
Approved by:	Sven Kühn	Deputy Manager	

Issued: July 23, 2019

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	404.166 ± 0.02% (k=2)	404.988 ± 0.02% (k=2)	405.096 ± 0.02% (k=2)
Low Range	3.99856 ± 1.50% (k=2)	3.98348 ± 1.50% (k=2)	3.99912 ± 1.50% (k=2)

Connector Angle

Connector Angle to be used in DASY system	345.5 ° ± 1 °

Appendix (Additional assessments outside the scope of SCS0108)

1. DC Voltage Linearity

High Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	199994.14	-1.58	-0.00
Channel X	+ Input	20003.24	1.63	0.01
Channel X	- Input	-19999.69	2.15	-0.01
Channel Y	+ Input	199994.24	-1.47	-0.00
Channel Y	+ Input	19999.92	-1.59	-0.01
Channel Y	- Input	-20002.36	-0.45	0.00
Channel Z	+ Input	199993.01	-3.18	-0.00
Channel Z	+ Input	20001.72	0.33	0.00
Channel Z	- Input	-20001.83	0.22	-0.00

Low Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	2000.95	0.12	0.01
Channel X	+ Input	201.39	0.23	0.11
Channel X	- Input	-198.00	0.76	-0.38
Channel Y	+ Input	2000.37	-0.36	-0.02
Channel Y	+ Input	200.27	-0.81	-0.40
Channel Y	- Input	-199.65	-0.81	0.41
Channel Z	+ Input	2000.08	-0.54	-0.03
Channel Z	+ Input	200.54	-0.42	-0.21
Channel Z	- Input	-199.83	-0.88	0.44

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	-6.17	-7.94
	- 200	9.53	7.51
Channel Y	200	-9.87	-9.68
	- 200	8.28	8.02
Channel Z	200	12.52	12.54
	- 200	-13.97	-14.14

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	-	2.17	-3.57
Channel Y	200	8.43	-	2.81
Channel Z	200	9.90	6.07	-

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	15961	16608
Channel Y	15954	15680
Channel Z	15869	16574

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	-0.75	-1.83	0.18	0.39
Channel Y	0.12	-0.92	0.78	0.38
Channel Z	1.30	-0.57	3.07	0.63

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

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

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

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

Accreditation No.: SCS 0108

Client Sporton

Certificate No: ES3-3293_Nov19

CALIBRATION CERTIFICATE

Object: ES3DV3 - SN:3293

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

Calibration date: November 25, 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)°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	03-Apr-19 (No. 217-02892/02893)	Apr-20
Power sensor NRP-Z91	SN: 103244	03-Apr-19 (No. 217-02892)	Apr-20
Power sensor NRP-Z91	SN: 103245	03-Apr-19 (No. 217-02893)	Apr-20
Reference 20 dB Attenuator	SN: S5277 (20x)	04-Apr-19 (No. 217-02894)	Apr-20
DAE4	SN: 660	07-Oct-19 (No. DAE4-660_Oct19)	Oct-20
Reference Probe ES3DV2	SN: 3013	31-Dec-18 (No. ES3-3013_Dec18)	Dec-19
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: November 26, 2019

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

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

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

Accreditation No.: SCS 0108

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: ES3DV3 - SN:3293

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	1.09	0.90	0.71	± 10.1 %
DCP (mV)[B]	105.6	104.0	109.8	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dB$\sqrt{\mu V}$	C	D dB	VR mV	Max dev.	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	197.9	±3.5 %	± 4.7 %
		Y	0.0	0.0	1.0		199.0		
		Z	0.0	0.0	1.0		206.6		

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

[A] The uncertainties of 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: ES3DV3 - SN:3293

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-4.6
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	4 mm
Probe Tip to Sensor X Calibration Point	2 mm
Probe Tip to Sensor Y Calibration Point	2 mm
Probe Tip to Sensor Z Calibration Point	2 mm
Recommended Measurement Distance from Surface	3 mm

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3293

Calibration Parameter Determined in Head Tissue Simulating Media

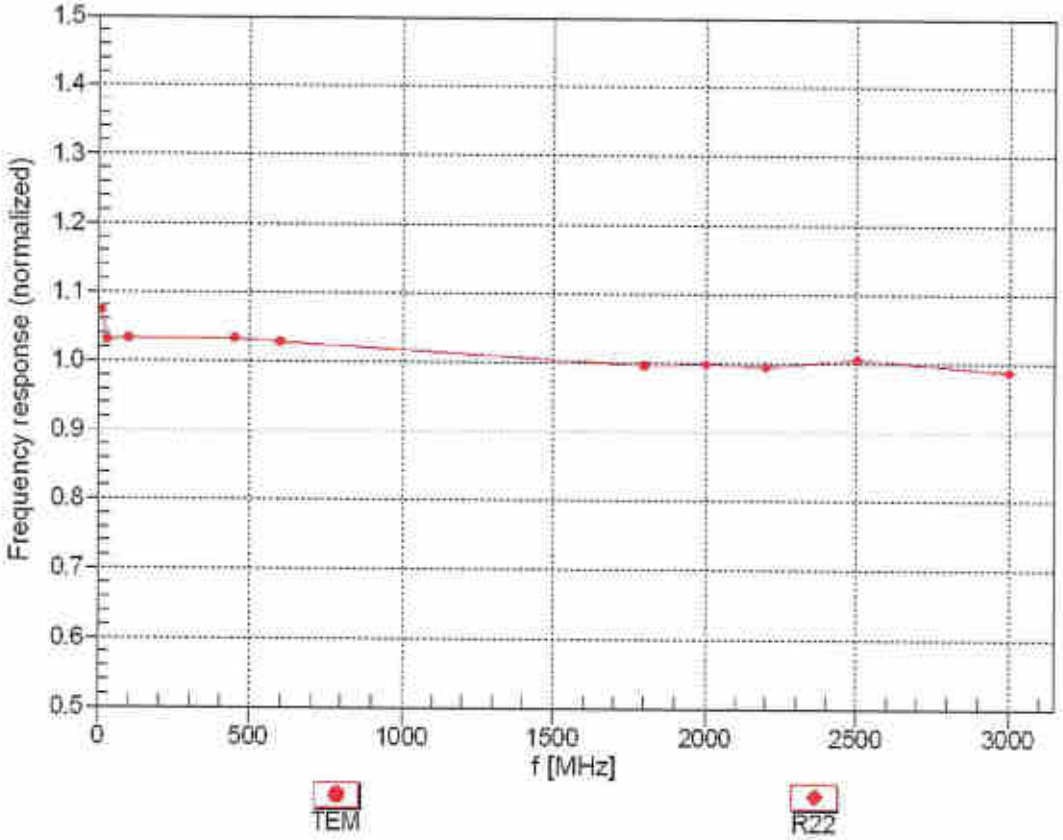
f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
750	41.9	0.89	6.56	6.56	6.56	0.80	1.23	± 12.0 %
835	41.5	0.90	6.39	6.39	6.39	0.80	1.26	± 12.0 %
900	41.5	0.97	6.23	6.23	6.23	0.72	1.30	± 12.0 %
1450	40.5	1.20	5.89	5.89	5.89	0.48	1.49	± 12.0 %
1750	40.1	1.37	5.53	5.53	5.53	0.55	1.38	± 12.0 %
1900	40.0	1.40	5.32	5.32	5.32	0.67	1.30	± 12.0 %
2000	40.0	1.40	5.25	5.25	5.25	0.50	1.55	± 12.0 %
2300	39.5	1.67	4.89	4.89	4.89	0.63	1.42	± 12.0 %
2450	39.2	1.80	4.60	4.60	4.60	0.80	1.33	± 12.0 %
2600	39.0	1.96	4.39	4.39	4.39	0.75	1.41	± 12.0 %

[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 below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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

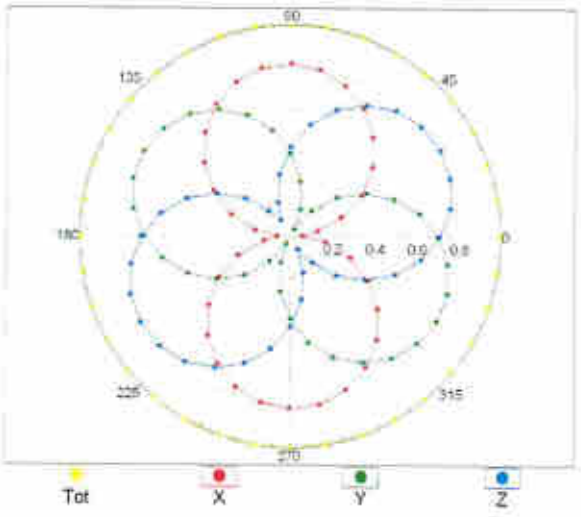
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



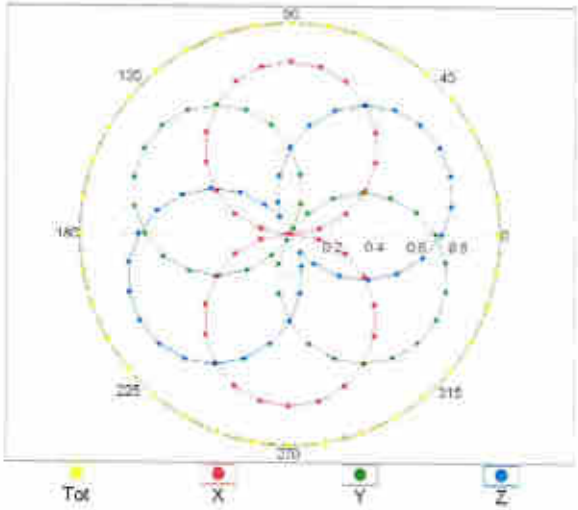
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

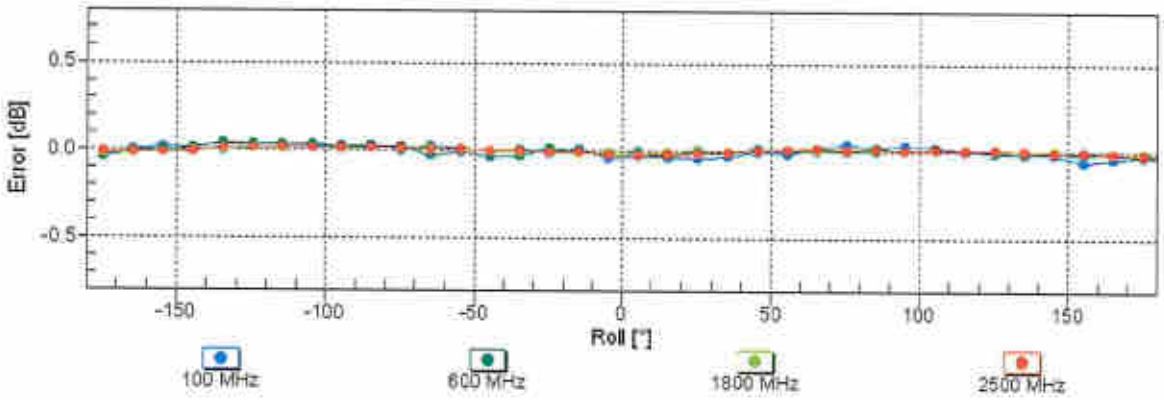
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



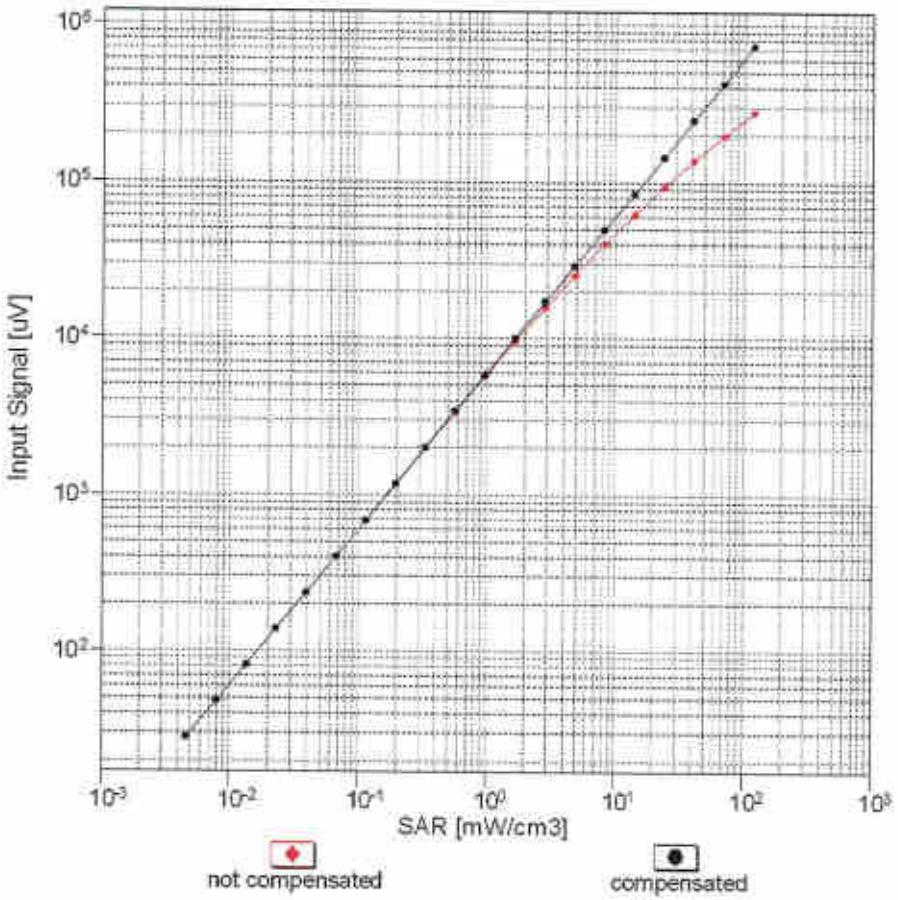
f=1800 MHz,R22

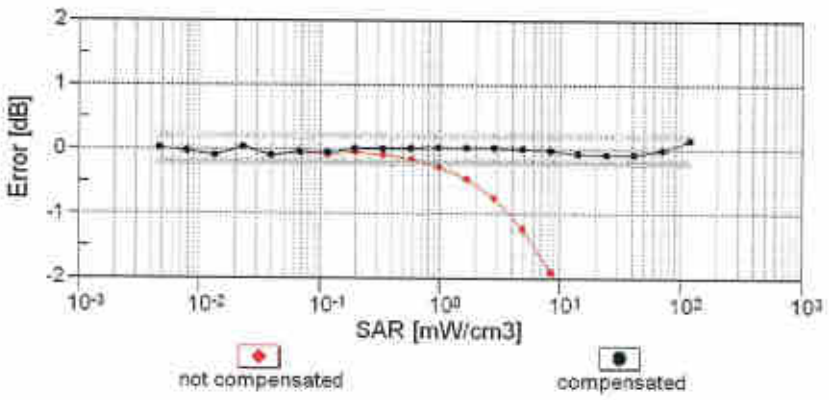




Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

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

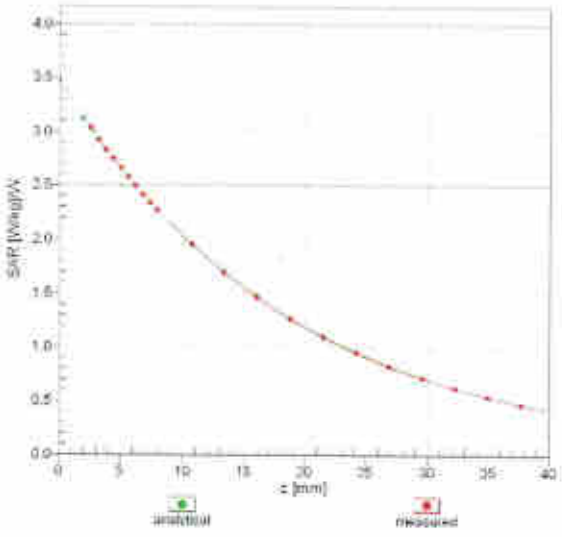




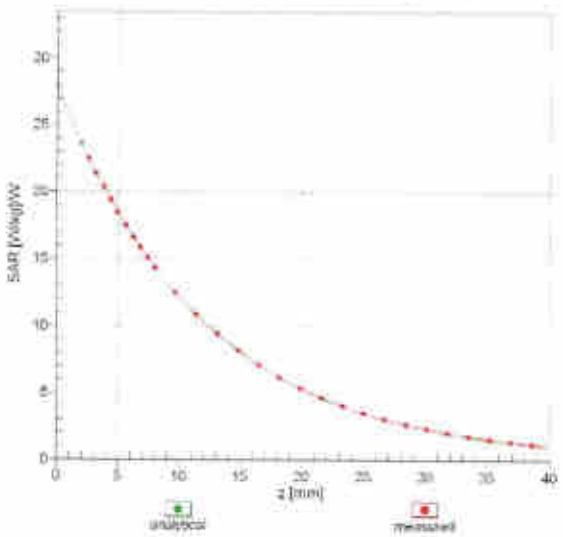
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment

f = 835 MHz,WGLS R9 (H_convF)

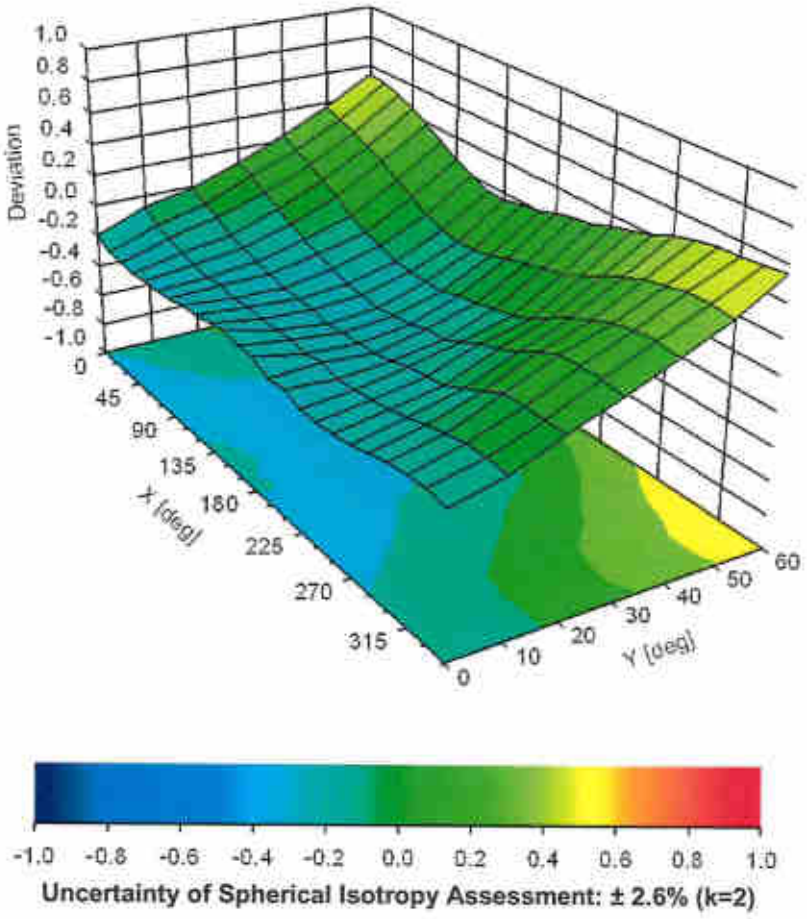


f = 1900 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz



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

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

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

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

Accreditation No.: SCS 0108

Client **Sporton**

Certificate No: EX3-3857_May19

CALIBRATION CERTIFICATE

Object: EX3DV4 - SN:3857

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: May 27, 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)°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	03-Apr-19 (No. 217-02892/02893)	Apr-20
Power sensor NRP-Z91	SN: 103244	03-Apr-19 (No. 217-02892)	Apr-20
Power sensor NRP-Z91	SN: 103245	03-Apr-19 (No. 217-02893)	Apr-20
Reference 20 dB Attenuator	SN: S5277 (20x)	04-Apr-19 (No. 217-02894)	Apr-20
DAE4	SN: 660	19-Dec-18 (No. DAE4-660_Dec18)	Dec-19
Reference Probe ES3DV2	SN: 3013	31-Dec-18 (No. ES3-3013_Dec18)	Dec-19
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-18)	In house check: Oct-19

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

Issued: May 28, 2019

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

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

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

Accreditation No.: SCS 0108

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:3857

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	0.17	0.43	0.45	± 10.1 %
DCP (mV)[B]	102.0	100.4	103.0	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Max dev.	Max Unc[E] (k=2)
0	CW	X	0.00	0.00	1.00	0.00	149.1	± 3.5 %	± 4.7 %
		Y	0.00	0.00	1.00		142.5		
		Z	0.00	0.00	1.00		128.7		
10352-AAA	Pulse Waveform (200Hz, 10%)	X	5.02	71.79	14.46	10.00	60.0	± 3.0 %	± 9.6 %
		Y	15.00	85.65	19.05		60.0		
		Z	15.00	87.33	19.76		60.0		
10353-AAA	Pulse Waveform (200Hz, 20%)	X	4.86	73.94	13.94	6.99	80.0	± 1.7 %	± 9.6 %
		Y	15.00	86.82	18.12		80.0		
		Z	15.00	88.67	19.12		80.0		
10354-AAA	Pulse Waveform (200Hz, 40%)	X	7.38	78.94	13.73	3.98	95.0	± 1.4 %	± 9.6 %
		Y	15.00	86.36	16.11		95.0		
		Z	15.00	93.83	20.13		95.0		
10355-AAA	Pulse Waveform (200Hz, 60%)	X	0.64	63.16	6.75	2.22	120.0	± 1.5 %	± 9.6 %
		Y	13.05	81.68	12.64		120.0		
		Z	15.00	101.47	22.26		120.0		
10387-AAA	QPSK Waveform, 1 MHz	X	1.68	72.66	15.43	0.00	150.0	± 2.7 %	± 9.6 %
		Y	0.57	60.00	7.58		150.0		
		Z	0.99	66.12	11.92		150.0		
10388-AAA	QPSK Waveform, 10 MHz	X	3.08	73.93	18.74	0.00	150.0	± 1.2 %	± 9.6 %
		Y	2.07	67.07	15.14		150.0		
		Z	2.60	71.16	17.43		150.0		
10396-AAA	64-QAM Waveform, 100 kHz	X	3.51	72.69	19.87	3.01	150.0	± 1.6 %	± 9.6 %
		Y	2.69	68.94	18.38		150.0		
		Z	3.62	74.43	20.55		150.0		
10399-AAA	64-QAM Waveform, 40 MHz	X	3.84	69.00	17.04	0.00	150.0	± 2.3 %	± 9.6 %
		Y	3.40	66.62	15.52		150.0		
		Z	3.68	68.33	16.53		150.0		
10414-AAA	WLAN CCDF, 64-QAM, 40MHz	X	5.12	66.37	16.23	0.00	150.0	± 4.3 %	± 9.6 %
		Y	4.79	65.33	15.44		150.0		
		Z	4.99	66.28	15.97		150.0		

Note: For details on UID parameters see Appendix

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:3857

Sensor Model Parameters

	C1 fF	C2 fF	α V^{-1}	T1 $ms.V^{-2}$	T2 $ms.V^{-1}$	T3 ms	T4 V^{-2}	T5 V^{-1}	T6
X	59.0	455.93	38.07	9.66	1.32	5.00	0.00	0.69	1.01
Y	45.9	356.07	37.98	10.21	0.83	5.05	0.00	0.48	1.01
Z	48.1	356.44	35.21	11.94	0.51	5.06	1.47	0.28	1.01

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-43.5
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3857

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	9.77	9.77	9.77	0.42	0.99	± 12.0 %
835	41.5	0.90	9.48	9.48	9.48	0.46	0.80	± 12.0 %
900	41.5	0.97	9.34	9.34	9.34	0.29	1.12	± 12.0 %
1750	40.1	1.37	8.46	8.46	8.46	0.34	0.80	± 12.0 %
1900	40.0	1.40	8.10	8.10	8.10	0.34	0.80	± 12.0 %
2000	40.0	1.40	8.04	8.04	8.04	0.26	0.88	± 12.0 %
2300	39.5	1.67	7.88	7.88	7.88	0.33	0.90	± 12.0 %
2450	39.2	1.80	7.50	7.50	7.50	0.37	0.93	± 12.0 %
2600	39.0	1.96	7.31	7.31	7.31	0.35	0.93	± 12.0 %
3300	38.2	2.71	6.96	6.96	6.96	0.30	1.25	± 14.0 %
3500	37.9	2.91	6.92	6.92	6.92	0.30	1.25	± 14.0 %
3700	37.7	3.12	6.65	6.65	6.65	0.30	1.25	± 14.0 %
3900	37.5	3.32	6.60	6.60	6.60	0.40	1.60	± 14.0 %
4100	37.2	3.53	5.99	5.99	5.99	0.40	1.60	± 14.0 %
4200	37.1	3.63	5.98	5.98	5.98	0.40	1.70	± 14.0 %
4400	36.9	3.84	5.86	5.86	5.86	0.45	1.75	± 14.0 %
4600	36.7	4.04	5.83	5.83	5.83	0.45	1.75	± 14.0 %
4800	36.4	4.25	5.73	5.73	5.73	0.45	1.75	± 14.0 %
4950	36.3	4.40	5.53	5.53	5.53	0.40	1.80	± 14.0 %
5250	35.9	4.71	5.19	5.19	5.19	0.40	1.80	± 14.0 %
5600	35.5	5.07	4.92	4.92	4.92	0.40	1.80	± 14.0 %
5750	35.4	5.22	5.17	5.17	5.17	0.40	1.80	± 14.0 %

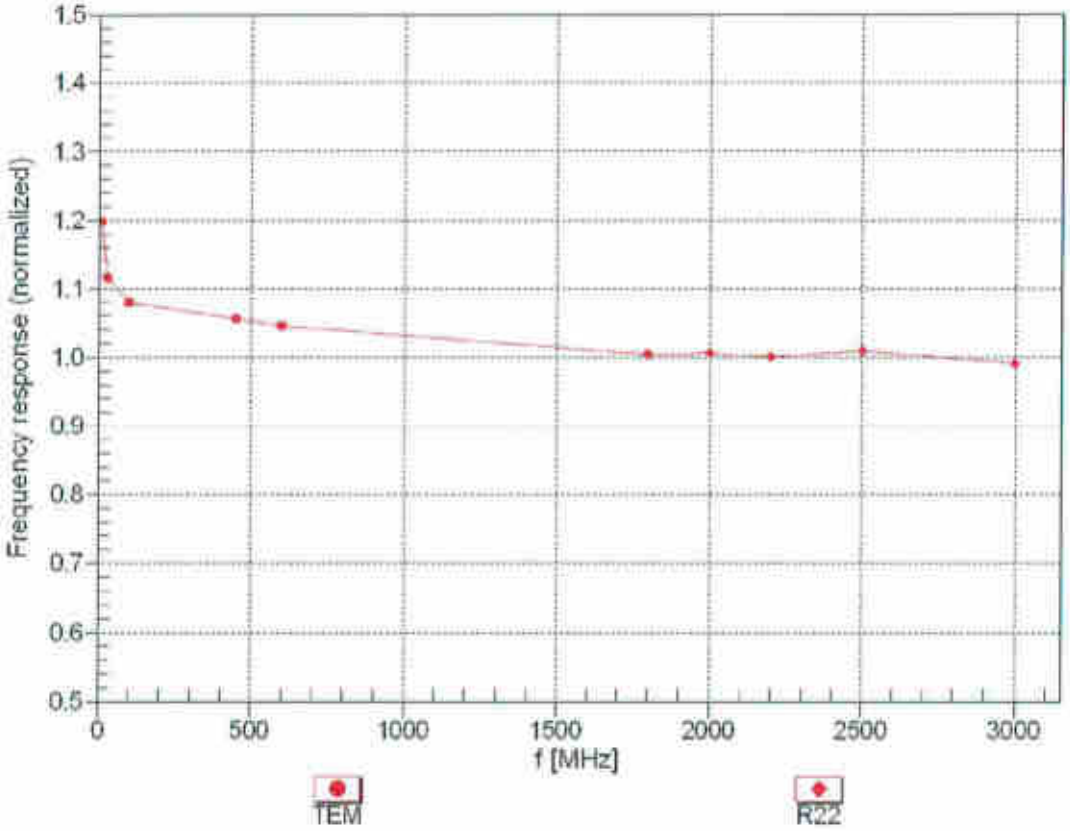
[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz 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 below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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

Frequency Response of E-Field

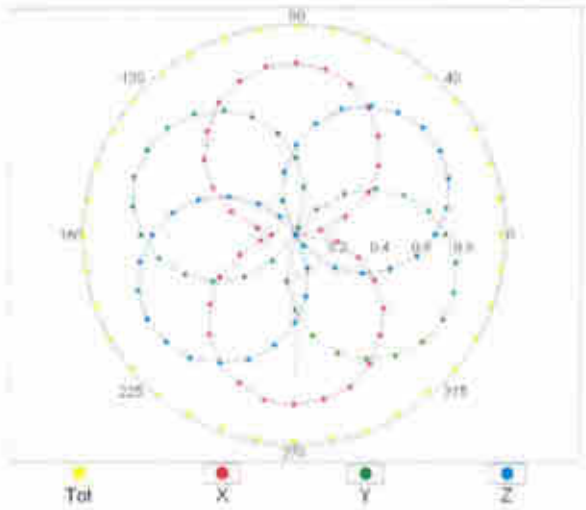
(TEM-Cell:ifi110 EXX, Waveguide: R22)



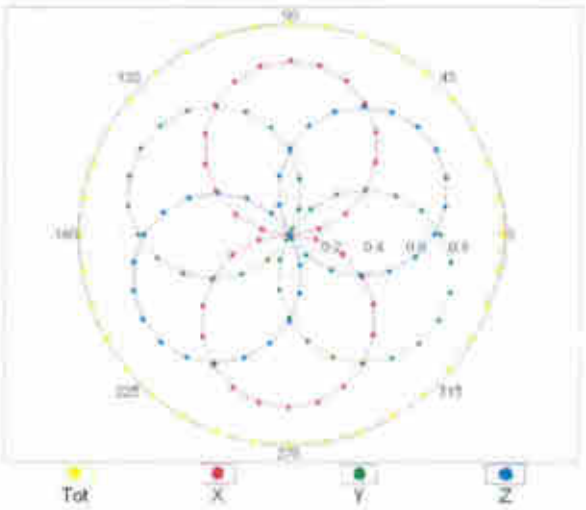
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

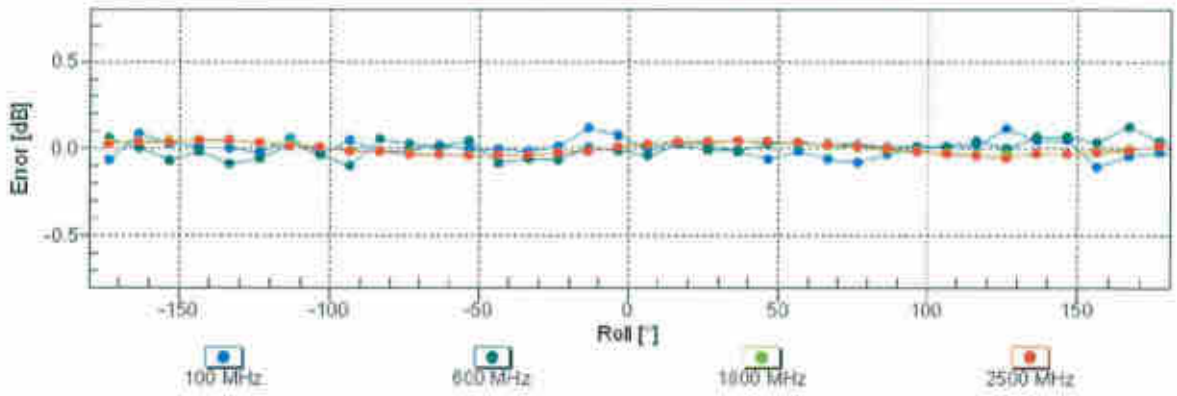
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



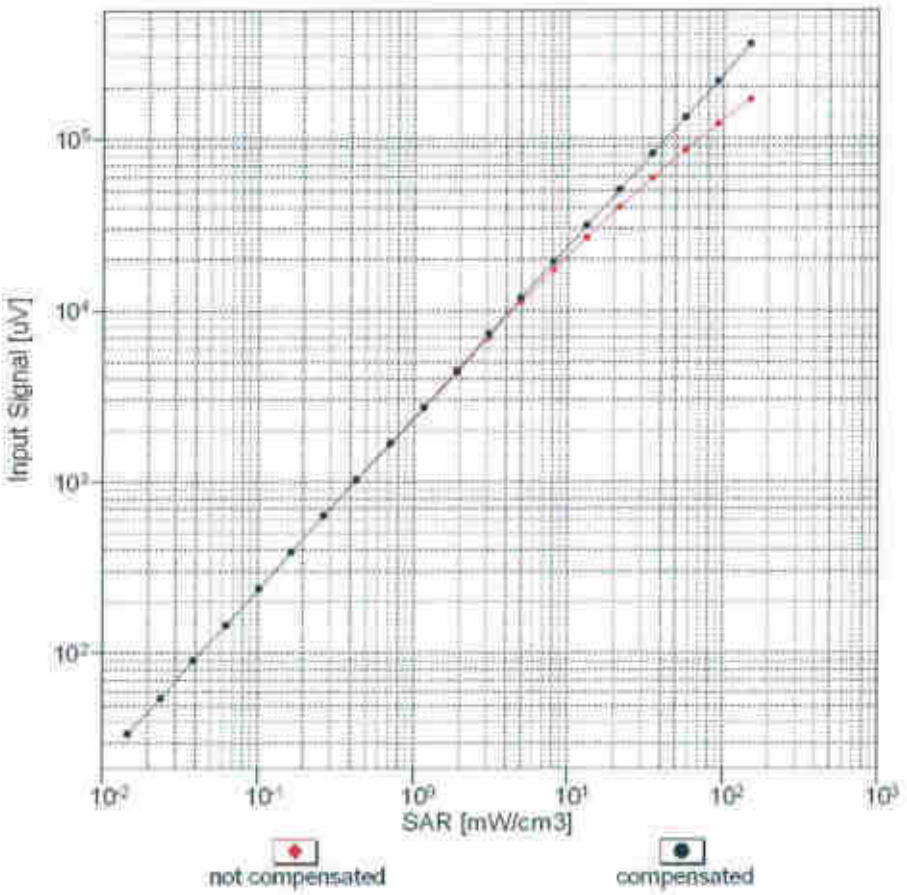
f=1800 MHz,R22

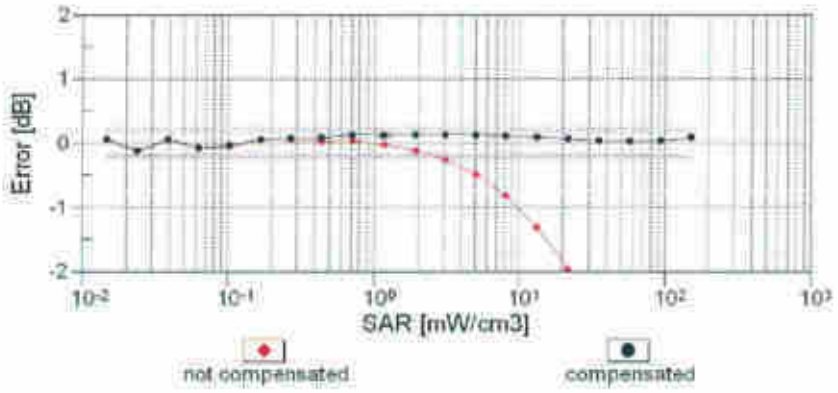




Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

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

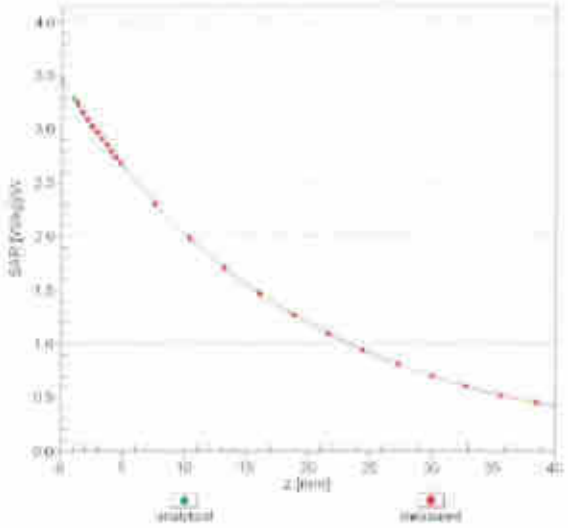




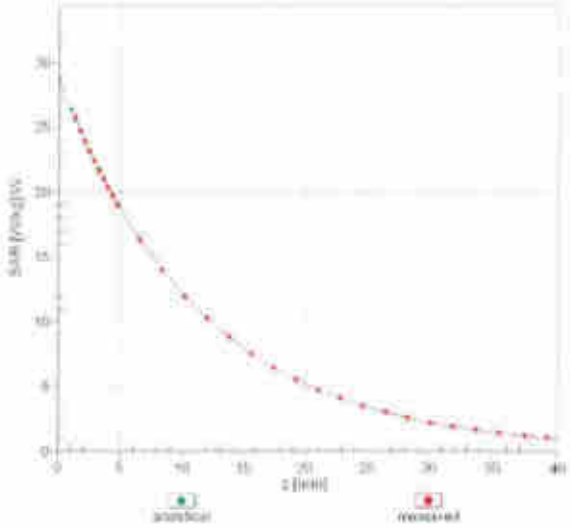
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment

f = 835 MHz,WGLS R9 (H_convF)

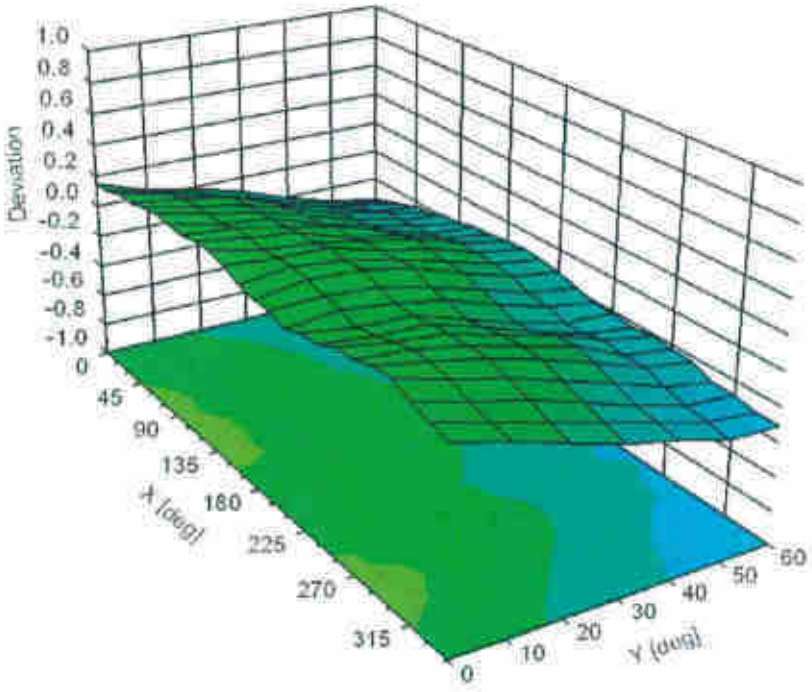


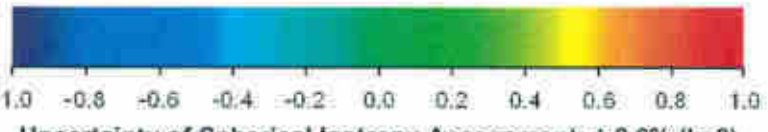
f = 1900 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz





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

Appendix: Modulation Calibration Parameters

UID	Rev	Communication System Name	Group	PAR (dB)	Unc[F] (k=2)
0		CW	CW	0.00	± 4.7 %
10010	CAA	SAR Validation (Square, 100ms, 10ms)	Test	10.00	± 9.6 %
10011	CAB	UMTS-FDD (WCDMA)	WCDMA	2.91	± 9.6 %
10012	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	WLAN	1.87	± 9.6 %
10013	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)	WLAN	9.46	± 9.6 %
10021	DAC	GSM-FDD (TDMA, GMSK)	GSM	9.39	± 9.6 %
10023	DAC	GPRS-FDD (TDMA, GMSK, TN 0)	GSM	9.57	± 9.6 %
10024	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	GSM	6.56	± 9.6 %
10025	DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	GSM	12.62	± 9.6 %
10026	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	GSM	9.55	± 9.6 %
10027	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	GSM	4.80	± 9.6 %
10028	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	GSM	3.55	± 9.6 %
10029	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	GSM	7.78	± 9.6 %
10030	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	Bluetooth	5.30	± 9.6 %
10031	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	Bluetooth	1.87	± 9.6 %
10032	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	Bluetooth	1.16	± 9.6 %
10033	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	Bluetooth	7.74	± 9.6 %
10034	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	Bluetooth	4.53	± 9.6 %
10035	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	Bluetooth	3.83	± 9.6 %
10036	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	Bluetooth	8.01	± 9.6 %
10037	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	Bluetooth	4.77	± 9.6 %
10038	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	Bluetooth	4.10	± 9.6 %
10039	CAB	CDMA2000 (1xRTT, RC1)	CDMA2000	4.57	± 9.6 %
10042	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate)	AMPS	7.78	± 9.6 %
10044	CAA	IS-91/EIA/TIA-553 FDD (FDMA, FM)	AMPS	0.00	± 9.6 %
10048	CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	DECT	13.80	± 9.6 %
10049	CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	DECT	10.79	± 9.6 %
10056	CAA	UMTS-TDD (TD-SCDMA, 1.28 Mcps)	TD-SCDMA	11.01	± 9.6 %
10058	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	GSM	6.52	± 9.6 %
10059	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)	WLAN	2.12	± 9.6 %
10060	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	WLAN	2.83	± 9.6 %
10061	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	WLAN	3.60	± 9.6 %
10062	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)	WLAN	8.68	± 9.6 %
10063	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)	WLAN	8.63	± 9.6 %
10064	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)	WLAN	9.09	± 9.6 %
10065	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)	WLAN	9.00	± 9.6 %
10066	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)	WLAN	9.38	± 9.6 %
10067	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)	WLAN	10.12	± 9.6 %
10068	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)	WLAN	10.24	± 9.6 %
10069	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)	WLAN	10.56	± 9.6 %
10071	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)	WLAN	9.83	± 9.6 %
10072	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)	WLAN	9.62	± 9.6 %
10073	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	WLAN	9.94	± 9.6 %
10074	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)	WLAN	10.30	± 9.6 %
10075	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)	WLAN	10.77	± 9.6 %
10076	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	WLAN	10.94	± 9.6 %
10077	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	WLAN	11.00	± 9.6 %
10081	CAB	CDMA2000 (1xRTT, RC3)	CDMA2000	3.97	± 9.6 %
10082	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate)	AMPS	4.77	± 9.6 %
10090	DAC	GPRS-FDD (TDMA, GMSK, TN 0-4)	GSM	6.56	± 9.6 %
10097	CAB	UMTS-FDD (HSDPA)	WCDMA	3.98	± 9.6 %
10098	CAB	UMTS-FDD (HSUPA, Subtest 2)	WCDMA	3.98	± 9.6 %
10099	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	GSM	9.55	± 9.6 %
10100	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-FDD	5.67	± 9.6 %
10101	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	± 9.6 %
10102	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10103	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-TDD	9.29	± 9.6 %
10104	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-TDD	9.97	± 9.6 %
10105	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-TDD	10.01	± 9.6 %
10108	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-FDD	5.80	± 9.6 %

10109	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10110	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-FDD	5.75	± 9.6 %
10111	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-FDD	6.44	± 9.6 %
10112	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-FDD	6.59	± 9.6 %
10113	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-FDD	6.62	± 9.6 %
10114	CAC	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	WLAN	8.10	± 9.6 %
10115	CAC	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	WLAN	8.46	± 9.6 %
10116	CAC	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	WLAN	8.15	± 9.6 %
10117	CAC	IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	WLAN	8.07	± 9.6 %
10118	CAC	IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)	WLAN	8.59	± 9.6 %
10119	CAC	IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)	WLAN	8.13	± 9.6 %
10140	CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-FDD	6.49	± 9.6 %
10141	CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-FDD	6.53	± 9.6 %
10142	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10143	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-FDD	6.35	± 9.6 %
10144	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-FDD	6.65	± 9.6 %
10145	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-FDD	5.76	± 9.6 %
10146	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.41	± 9.6 %
10147	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.72	± 9.6 %
10149	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	± 9.6 %
10150	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10151	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-TDD	9.28	± 9.6 %
10152	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-TDD	9.92	± 9.6 %
10153	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-TDD	10.05	± 9.6 %
10154	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-FDD	5.75	± 9.6 %
10155	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10156	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-FDD	5.79	± 9.6 %
10157	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-FDD	6.49	± 9.6 %
10158	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-FDD	6.62	± 9.6 %
10159	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-FDD	6.56	± 9.6 %
10160	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-FDD	5.82	± 9.6 %
10161	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10162	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-FDD	6.58	± 9.6 %
10166	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-FDD	5.46	± 9.6 %
10167	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.21	± 9.6 %
10168	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.79	± 9.6 %
10169	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10170	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10171	AAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-FDD	6.49	± 9.6 %
10172	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10173	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10174	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10175	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10176	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10177	CAI	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10178	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10179	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10180	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10181	CAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10182	CAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10183	AAD	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10184	CAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10185	CAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-FDD	6.51	± 9.6 %
10186	AAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10187	CAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10188	CAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10189	AAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10193	CAC	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	WLAN	8.09	± 9.6 %
10194	CAC	IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)	WLAN	8.12	± 9.6 %
10195	CAC	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	WLAN	8.21	± 9.6 %
10196	CAC	IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	WLAN	8.10	± 9.6 %
10197	CAC	IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)	WLAN	8.13	± 9.6 %
10198	CAC	IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)	WLAN	8.27	± 9.6 %
10219	CAC	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	WLAN	8.03	± 9.6 %

10220	CAC	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	WLAN	8.13	± 9.6 %
10221	CAC	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)	WLAN	8.27	± 9.6 %
10222	CAC	IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	WLAN	8.06	± 9.6 %
10223	CAC	IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)	WLAN	8.48	± 9.6 %
10224	CAC	IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)	WLAN	8.08	± 9.6 %
10225	CAB	UMTS-FDD (HSPA+)	WCDMA	5.97	± 9.6 %
10226	CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.49	± 9.6 %
10227	CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.26	± 9.6 %
10228	CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-TDD	9.22	± 9.6 %
10229	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10230	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10231	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-TDD	9.19	± 9.6 %
10232	CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10233	CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10234	CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10235	CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10236	CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10237	CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10238	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10239	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10240	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10241	CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.82	± 9.6 %
10242	CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-TDD	9.86	± 9.6 %
10243	CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-TDD	9.46	± 9.6 %
10244	CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-TDD	10.06	± 9.6 %
10245	CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-TDD	10.06	± 9.6 %
10246	CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-TDD	9.30	± 9.6 %
10247	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-TDD	9.91	± 9.6 %
10248	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-TDD	10.09	± 9.6 %
10249	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-TDD	9.29	± 9.6 %
10250	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-TDD	9.81	± 9.6 %
10251	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-TDD	10.17	± 9.6 %
10252	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-TDD	9.24	± 9.6 %
10253	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-TDD	9.90	± 9.6 %
10254	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-TDD	10.14	± 9.6 %
10255	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-TDD	9.20	± 9.6 %
10256	CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.96	± 9.6 %
10257	CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.08	± 9.6 %
10258	CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-TDD	9.34	± 9.6 %
10259	CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-TDD	9.98	± 9.6 %
10260	CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-TDD	9.97	± 9.6 %
10261	CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-TDD	9.24	± 9.6 %
10262	CAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-TDD	9.83	± 9.6 %
10263	CAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-TDD	10.16	± 9.6 %
10264	CAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-TDD	9.23	± 9.6 %
10265	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-TDD	9.92	± 9.6 %
10266	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-TDD	10.07	± 9.6 %
10267	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-TDD	9.30	± 9.6 %
10268	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-TDD	10.06	± 9.6 %
10269	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-TDD	10.13	± 9.6 %
10270	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-TDD	9.58	± 9.6 %
10274	CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)	WCDMA	4.87	± 9.6 %
10275	CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)	WCDMA	3.96	± 9.6 %
10277	CAA	PHS (QPSK)	PHS	11.81	± 9.6 %
10278	CAA	PHS (QPSK, BW 884MHz, Rolloff 0.5)	PHS	11.81	± 9.6 %
10279	CAA	PHS (QPSK, BW 884MHz, Rolloff 0.38)	PHS	12.18	± 9.6 %
10290	AAB	CDMA2000, RC1, SO55, Full Rate	CDMA2000	3.91	± 9.6 %
10291	AAB	CDMA2000, RC3, SO55, Full Rate	CDMA2000	3.46	± 9.6 %
10292	AAB	CDMA2000, RC3, SO32, Full Rate	CDMA2000	3.39	± 9.6 %
10293	AAB	CDMA2000, RC3, SO3, Full Rate	CDMA2000	3.50	± 9.6 %
10295	AAB	CDMA2000, RC1, SO3, 1/8th Rate 25 fr.	CDMA2000	12.49	± 9.6 %
10297	AAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-FDD	5.81	± 9.6 %
10298	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10299	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-FDD	6.39	± 9.6 %

10300	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10301	AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	WiMAX	12.03	± 9.6 %
10302	AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3 CTRL symbols)	WiMAX	12.57	± 9.6 %
10303	AAA	IEEE 802.16e WiMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)	WiMAX	12.52	± 9.6 %
10304	AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)	WiMAX	11.86	± 9.6 %
10305	AAA	IEEE 802.16e WiMAX (31:15, 10ms, 10MHz, 64QAM, PUSC, 15 symbols)	WiMAX	15.24	± 9.6 %
10306	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC, 18 symbols)	WiMAX	14.67	± 9.6 %
10307	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC, 18 symbols)	WiMAX	14.49	± 9.6 %
10308	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	WiMAX	14.46	± 9.6 %
10309	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3, 18 symbols)	WiMAX	14.58	± 9.6 %
10310	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3, 18 symbols)	WiMAX	14.57	± 9.6 %
10311	AAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-FDD	6.06	± 9.6 %
10313	AAA	iDEN 1:3	iDEN	10.51	± 9.6 %
10314	AAA	iDEN 1:6	iDEN	13.48	± 9.6 %
10315	AAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc duty cycle)	WLAN	1.71	± 9.6 %
10316	AAB	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc duty cycle)	WLAN	8.36	± 9.6 %
10317	AAC	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)	WLAN	8.36	± 9.6 %
10352	AAA	Pulse Waveform (200Hz, 10%)	Generic	10.00	± 9.6 %
10353	AAA	Pulse Waveform (200Hz, 20%)	Generic	6.99	± 9.6 %
10354	AAA	Pulse Waveform (200Hz, 40%)	Generic	3.98	± 9.6 %
10355	AAA	Pulse Waveform (200Hz, 60%)	Generic	2.22	± 9.6 %
10356	AAA	Pulse Waveform (200Hz, 80%)	Generic	0.97	± 9.6 %
10387	AAA	QPSK Waveform, 1 MHz	Generic	5.10	± 9.6 %
10388	AAA	QPSK Waveform, 10 MHz	Generic	5.22	± 9.6 %
10396	AAA	64-QAM Waveform, 100 kHz	Generic	6.27	± 9.6 %
10399	AAA	64-QAM Waveform, 40 MHz	Generic	6.27	± 9.6 %
10400	AAD	IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc duty cycle)	WLAN	8.37	± 9.6 %
10401	AAD	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc duty cycle)	WLAN	8.60	± 9.6 %
10402	AAD	IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc duty cycle)	WLAN	8.53	± 9.6 %
10403	AAB	CDMA2000 (1xEV-DO, Rev. 0)	CDMA2000	3.76	± 9.6 %
10404	AAB	CDMA2000 (1xEV-DO, Rev. A)	CDMA2000	3.77	± 9.6 %
10406	AAB	CDMA2000, RC3, SO32, SCH0, Full Rate	CDMA2000	5.22	± 9.6 %
10410	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9, Subframe Conf=4)	LTE-TDD	7.82	± 9.6 %
10414	AAA	WLAN CCDF, 64-QAM, 40MHz	Generic	8.54	± 9.6 %
10415	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)	WLAN	1.54	± 9.6 %
10416	AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.23	± 9.6 %
10417	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.23	± 9.6 %
10418	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Long preambule)	WLAN	8.14	± 9.6 %
10419	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule)	WLAN	8.19	± 9.6 %
10422	AAB	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	WLAN	8.32	± 9.6 %
10423	AAB	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	WLAN	8.47	± 9.6 %
10424	AAB	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	WLAN	8.40	± 9.6 %
10425	AAB	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	WLAN	8.41	± 9.6 %
10426	AAB	IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	WLAN	8.45	± 9.6 %
10427	AAB	IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)	WLAN	8.41	± 9.6 %
10430	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	LTE-FDD	8.28	± 9.6 %
10431	AAD	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	LTE-FDD	8.38	± 9.6 %
10432	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)	LTE-FDD	8.34	± 9.6 %
10433	AAC	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	LTE-FDD	8.34	± 9.6 %
10434	AAA	W-CDMA (BS Test Model 1, 64 DPCH)	WCDMA	8.60	± 9.6 %
10435	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10447	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.56	± 9.6 %
10448	AAD	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clippin 44%)	LTE-FDD	7.53	± 9.6 %
10449	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Cliping 44%)	LTE-FDD	7.51	± 9.6 %
10450	AAC	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.48	± 9.6 %

10451	AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	WCDMA	7.59	± 9.6 %
10456	AAB	IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc duty cycle)	WLAN	8.63	± 9.6 %
10457	AAA	UMTS-FDD (DC-HSDPA)	WCDMA	6.62	± 9.6 %
10458	AAA	CDMA2000 (1xEV-DO, Rev. B, 2 carriers)	CDMA2000	6.55	± 9.6 %
10459	AAA	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	CDMA2000	8.25	± 9.6 %
10460	AAA	UMTS-FDD (WCDMA, AMR)	WCDMA	2.39	± 9.6 %
10461	AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10462	AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.30	± 9.6 %
10463	AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.56	± 9.6 %
10464	AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10465	AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10466	AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	± 9.6 %
10467	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10468	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10469	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.56	± 9.6 %
10470	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10471	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10472	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	± 9.6 %
10473	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10474	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10475	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	± 9.6 %
10477	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10478	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	± 9.6 %
10479	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	± 9.6 %
10480	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.18	± 9.6 %
10481	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.45	± 9.6 %
10482	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.71	± 9.6 %
10483	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.39	± 9.6 %
10484	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.47	± 9.6 %
10485	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.59	± 9.6 %
10486	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.38	± 9.6 %
10487	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.60	± 9.6 %
10488	AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.70	± 9.6 %
10489	AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.31	± 9.6 %
10490	AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.54	± 9.6 %
10491	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	± 9.6 %

10492	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.41	± 9.6 %
10493	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.55	± 9.6 %
10494	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	± 9.6 %
10495	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.37	± 9.6 %
10496	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.54	± 9.6 %
10497	AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.67	± 9.6 %
10498	AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.40	± 9.6 %
10499	AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.68	± 9.6 %
10500	AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.67	± 9.6 %
10501	AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.44	± 9.6 %
10502	AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.52	± 9.6 %
10503	AAE	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.72	± 9.6 %
10504	AAE	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.31	± 9.6 %
10505	AAE	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.54	± 9.6 %
10506	AAE	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	± 9.6 %
10507	AAE	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.36	± 9.6 %
10508	AAE	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.55	± 9.6 %
10509	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.99	± 9.6 %
10510	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.49	± 9.6 %
10511	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.51	± 9.6 %
10512	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	± 9.6 %
10513	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.42	± 9.6 %
10514	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.45	± 9.6 %
10515	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)	WLAN	1.58	± 9.6 %
10516	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle)	WLAN	1.57	± 9.6 %
10517	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle)	WLAN	1.58	± 9.6 %
10518	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle)	WLAN	8.23	± 9.6 %
10519	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)	WLAN	8.39	± 9.6 %
10520	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)	WLAN	8.12	± 9.6 %
10521	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)	WLAN	7.97	± 9.6 %
10522	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)	WLAN	8.45	± 9.6 %
10523	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)	WLAN	8.08	± 9.6 %
10524	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)	WLAN	8.27	± 9.6 %
10525	AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)	WLAN	8.36	± 9.6 %
10526	AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle)	WLAN	8.42	± 9.6 %
10527	AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle)	WLAN	8.21	± 9.6 %
10528	AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)	WLAN	8.36	± 9.6 %
10529	AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle)	WLAN	8.36	± 9.6 %
10531	AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)	WLAN	8.43	± 9.6 %
10532	AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)	WLAN	8.29	± 9.6 %
10533	AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle)	WLAN	8.38	± 9.6 %
10534	AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 99pc duty cycle)	WLAN	8.45	± 9.6 %

10535	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc duty cycle)	WLAN	8.45	± 9.6 %
10536	AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 99pc duty cycle)	WLAN	8.32	± 9.6 %
10537	AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 99pc duty cycle)	WLAN	8.44	± 9.6 %
10538	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 99pc duty cycle)	WLAN	8.54	± 9.6 %
10540	AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 99pc duty cycle)	WLAN	8.39	± 9.6 %
10541	AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 99pc duty cycle)	WLAN	8.46	± 9.6 %
10542	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc duty cycle)	WLAN	8.65	± 9.6 %
10543	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc duty cycle)	WLAN	8.65	± 9.6 %
10544	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle)	WLAN	8.47	± 9.6 %
10545	AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc duty cycle)	WLAN	8.55	± 9.6 %
10546	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc duty cycle)	WLAN	8.35	± 9.6 %
10547	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc duty cycle)	WLAN	8.49	± 9.6 %
10548	AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 99pc duty cycle)	WLAN	8.37	± 9.6 %
10550	AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 99pc duty cycle)	WLAN	8.38	± 9.6 %
10551	AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 99pc duty cycle)	WLAN	8.50	± 9.6 %
10552	AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 99pc duty cycle)	WLAN	8.42	± 9.6 %
10553	AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc duty cycle)	WLAN	8.45	± 9.6 %
10554	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc duty cycle)	WLAN	8.48	± 9.6 %
10555	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 99pc duty cycle)	WLAN	8.47	± 9.6 %
10556	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc duty cycle)	WLAN	8.50	± 9.6 %
10557	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc duty cycle)	WLAN	8.52	± 9.6 %
10558	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 99pc duty cycle)	WLAN	8.61	± 9.6 %
10560	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc duty cycle)	WLAN	8.73	± 9.6 %
10561	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 99pc duty cycle)	WLAN	8.56	± 9.6 %
10562	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 99pc duty cycle)	WLAN	8.69	± 9.6 %
10563	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 99pc duty cycle)	WLAN	8.77	± 9.6 %
10564	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty cycle)	WLAN	8.25	± 9.6 %
10565	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty cycle)	WLAN	8.45	± 9.6 %
10566	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty cycle)	WLAN	8.13	± 9.6 %
10567	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty cycle)	WLAN	8.00	± 9.6 %
10568	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty cycle)	WLAN	8.37	± 9.6 %
10569	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty cycle)	WLAN	8.10	± 9.6 %
10570	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty cycle)	WLAN	8.30	± 9.6 %
10571	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)	WLAN	1.99	± 9.6 %
10572	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)	WLAN	1.99	± 9.6 %
10573	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)	WLAN	1.98	± 9.6 %
10574	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)	WLAN	1.98	± 9.6 %
10575	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)	WLAN	8.59	± 9.6 %
10576	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)	WLAN	8.60	± 9.6 %
10577	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)	WLAN	8.70	± 9.6 %
10578	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)	WLAN	8.49	± 9.6 %
10579	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)	WLAN	8.36	± 9.6 %
10580	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)	WLAN	8.76	± 9.6 %
10581	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)	WLAN	8.35	± 9.6 %
10582	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)	WLAN	8.67	± 9.6 %
10583	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)	WLAN	8.59	± 9.6 %
10584	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)	WLAN	8.60	± 9.6 %
10585	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)	WLAN	8.70	± 9.6 %
10586	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc duty cycle)	WLAN	8.49	± 9.6 %
10587	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc duty cycle)	WLAN	8.36	± 9.6 %

10588	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle)	WLAN	8.76	± 9.6 %
10589	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle)	WLAN	8.35	± 9.6 %
10590	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle)	WLAN	8.67	± 9.6 %
10591	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle)	WLAN	8.63	± 9.6 %
10592	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc duty cycle)	WLAN	8.79	± 9.6 %
10593	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc duty cycle)	WLAN	8.64	± 9.6 %
10594	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc duty cycle)	WLAN	8.74	± 9.6 %
10595	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc duty cycle)	WLAN	8.74	± 9.6 %
10596	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc duty cycle)	WLAN	8.71	± 9.6 %
10597	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc duty cycle)	WLAN	8.72	± 9.6 %
10598	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc duty cycle)	WLAN	8.50	± 9.6 %
10599	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc duty cycle)	WLAN	8.79	± 9.6 %
10600	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc duty cycle)	WLAN	8.88	± 9.6 %
10601	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10602	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc duty cycle)	WLAN	8.94	± 9.6 %
10603	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc duty cycle)	WLAN	9.03	± 9.6 %
10604	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc duty cycle)	WLAN	8.76	± 9.6 %
10605	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc duty cycle)	WLAN	8.97	± 9.6 %
10606	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10607	AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	WLAN	8.64	± 9.6 %
10608	AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10609	AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc duty cycle)	WLAN	8.57	± 9.6 %
10610	AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc duty cycle)	WLAN	8.78	± 9.6 %
10611	AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc duty cycle)	WLAN	8.70	± 9.6 %
10612	AAB	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10613	AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc duty cycle)	WLAN	8.94	± 9.6 %
10614	AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc duty cycle)	WLAN	8.59	± 9.6 %
10615	AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10616	AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10617	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10618	AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc duty cycle)	WLAN	8.58	± 9.6 %
10619	AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc duty cycle)	WLAN	8.86	± 9.6 %
10620	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc duty cycle)	WLAN	8.87	± 9.6 %
10621	AAB	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10622	AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc duty cycle)	WLAN	8.68	± 9.6 %
10623	AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10624	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc duty cycle)	WLAN	8.96	± 9.6 %
10625	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc duty cycle)	WLAN	8.96	± 9.6 %
10626	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle)	WLAN	8.83	± 9.6 %
10627	AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc duty cycle)	WLAN	8.88	± 9.6 %
10628	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc duty cycle)	WLAN	8.71	± 9.6 %
10629	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc duty cycle)	WLAN	8.85	± 9.6 %
10630	AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc duty cycle)	WLAN	8.72	± 9.6 %
10631	AAB	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10632	AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc duty cycle)	WLAN	8.74	± 9.6 %
10633	AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc duty cycle)	WLAN	8.83	± 9.6 %
10634	AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc duty cycle)	WLAN	8.80	± 9.6 %
10635	AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10636	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)	WLAN	8.83	± 9.6 %
10637	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)	WLAN	8.79	± 9.6 %
10638	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)	WLAN	8.86	± 9.6 %
10639	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)	WLAN	8.85	± 9.6 %
10640	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)	WLAN	8.98	± 9.6 %
10641	AAC	IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)	WLAN	9.06	± 9.6 %
10642	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)	WLAN	9.06	± 9.6 %
10643	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)	WLAN	8.89	± 9.6 %
10644	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)	WLAN	9.05	± 9.6 %
10645	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)	WLAN	9.11	± 9.6 %
10646	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)	LTE-TDD	11.96	± 9.6 %
10647	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7)	LTE-TDD	11.96	± 9.6 %
10648	AAA	CDMA2000 (1x Advanced)	CDMA2000	3.45	± 9.6 %
10652	AAD	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.91	± 9.6 %
10653	AAD	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.42	± 9.6 %
10654	AAD	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.96	± 9.6 %

10655	AAE	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.21	± 9.6 %
10658	AAA	Pulse Waveform (200Hz, 10%)	Test	10.00	± 9.6 %
10659	AAA	Pulse Waveform (200Hz, 20%)	Test	6.99	± 9.6 %
10660	AAA	Pulse Waveform (200Hz, 40%)	Test	3.98	± 9.6 %
10661	AAA	Pulse Waveform (200Hz, 60%)	Test	2.22	± 9.6 %
10662	AAA	Pulse Waveform (200Hz, 80%)	Test	0.97	± 9.6 %
10670	AAA	Bluetooth Low Energy	Bluetooth	2.19	± 9.6 %
10671	AAA	IEEE 802.11ax (20MHz, MCS0, 90pc duty cycle)	WLAN	9.09	± 9.6 %
10672	AAA	IEEE 802.11ax (20MHz, MCS1, 90pc duty cycle)	WLAN	8.57	± 9.6 %
10673	AAA	IEEE 802.11ax (20MHz, MCS2, 90pc duty cycle)	WLAN	8.78	± 9.6 %
10674	AAA	IEEE 802.11ax (20MHz, MCS3, 90pc duty cycle)	WLAN	8.74	± 9.6 %
10675	AAA	IEEE 802.11ax (20MHz, MCS4, 90pc duty cycle)	WLAN	8.90	± 9.6 %
10676	AAA	IEEE 802.11ax (20MHz, MCS5, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10677	AAA	IEEE 802.11ax (20MHz, MCS6, 90pc duty cycle)	WLAN	8.73	± 9.6 %
10678	AAA	IEEE 802.11ax (20MHz, MCS7, 90pc duty cycle)	WLAN	8.78	± 9.6 %
10679	AAA	IEEE 802.11ax (20MHz, MCS8, 90pc duty cycle)	WLAN	8.89	± 9.6 %
10680	AAA	IEEE 802.11ax (20MHz, MCS9, 90pc duty cycle)	WLAN	8.80	± 9.6 %
10681	AAA	IEEE 802.11ax (20MHz, MCS10, 90pc duty cycle)	WLAN	8.62	± 9.6 %
10682	AAA	IEEE 802.11ax (20MHz, MCS11, 90pc duty cycle)	WLAN	8.83	± 9.6 %
10683	AAA	IEEE 802.11ax (20MHz, MCS0, 99pc duty cycle)	WLAN	8.42	± 9.6 %
10684	AAA	IEEE 802.11ax (20MHz, MCS1, 99pc duty cycle)	WLAN	8.26	± 9.6 %
10685	AAA	IEEE 802.11ax (20MHz, MCS2, 99pc duty cycle)	WLAN	8.33	± 9.6 %
10686	AAA	IEEE 802.11ax (20MHz, MCS3, 99pc duty cycle)	WLAN	8.28	± 9.6 %
10687	AAA	IEEE 802.11ax (20MHz, MCS4, 99pc duty cycle)	WLAN	8.45	± 9.6 %
10688	AAA	IEEE 802.11ax (20MHz, MCS5, 99pc duty cycle)	WLAN	8.29	± 9.6 %
10689	AAA	IEEE 802.11ax (20MHz, MCS6, 99pc duty cycle)	WLAN	8.55	± 9.6 %
10690	AAA	IEEE 802.11ax (20MHz, MCS7, 99pc duty cycle)	WLAN	8.29	± 9.6 %
10691	AAA	IEEE 802.11ax (20MHz, MCS8, 99pc duty cycle)	WLAN	8.25	± 9.6 %
10692	AAA	IEEE 802.11ax (20MHz, MCS9, 99pc duty cycle)	WLAN	8.29	± 9.6 %
10693	AAA	IEEE 802.11ax (20MHz, MCS10, 99pc duty cycle)	WLAN	8.25	± 9.6 %
10694	AAA	IEEE 802.11ax (20MHz, MCS11, 99pc duty cycle)	WLAN	8.57	± 9.6 %
10695	AAA	IEEE 802.11ax (40MHz, MCS0, 90pc duty cycle)	WLAN	8.78	± 9.6 %
10696	AAA	IEEE 802.11ax (40MHz, MCS1, 90pc duty cycle)	WLAN	8.91	± 9.6 %
10697	AAA	IEEE 802.11ax (40MHz, MCS2, 90pc duty cycle)	WLAN	8.61	± 9.6 %
10698	AAA	IEEE 802.11ax (40MHz, MCS3, 90pc duty cycle)	WLAN	8.89	± 9.6 %
10699	AAA	IEEE 802.11ax (40MHz, MCS4, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10700	AAA	IEEE 802.11ax (40MHz, MCS5, 90pc duty cycle)	WLAN	8.73	± 9.6 %
10701	AAA	IEEE 802.11ax (40MHz, MCS6, 90pc duty cycle)	WLAN	8.86	± 9.6 %
10702	AAA	IEEE 802.11ax (40MHz, MCS7, 90pc duty cycle)	WLAN	8.70	± 9.6 %
10703	AAA	IEEE 802.11ax (40MHz, MCS8, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10704	AAA	IEEE 802.11ax (40MHz, MCS9, 90pc duty cycle)	WLAN	8.56	± 9.6 %
10705	AAA	IEEE 802.11ax (40MHz, MCS10, 90pc duty cycle)	WLAN	8.69	± 9.6 %
10706	AAA	IEEE 802.11ax (40MHz, MCS11, 90pc duty cycle)	WLAN	8.66	± 9.6 %
10707	AAA	IEEE 802.11ax (40MHz, MCS0, 99pc duty cycle)	WLAN	8.32	± 9.6 %
10708	AAA	IEEE 802.11ax (40MHz, MCS1, 99pc duty cycle)	WLAN	8.55	± 9.6 %
10709	AAA	IEEE 802.11ax (40MHz, MCS2, 99pc duty cycle)	WLAN	8.33	± 9.6 %
10710	AAA	IEEE 802.11ax (40MHz, MCS3, 99pc duty cycle)	WLAN	8.29	± 9.6 %
10711	AAA	IEEE 802.11ax (40MHz, MCS4, 99pc duty cycle)	WLAN	8.39	± 9.6 %
10712	AAA	IEEE 802.11ax (40MHz, MCS5, 99pc duty cycle)	WLAN	8.67	± 9.6 %
10713	AAA	IEEE 802.11ax (40MHz, MCS6, 99pc duty cycle)	WLAN	8.33	± 9.6 %
10714	AAA	IEEE 802.11ax (40MHz, MCS7, 99pc duty cycle)	WLAN	8.26	± 9.6 %
10715	AAA	IEEE 802.11ax (40MHz, MCS8, 99pc duty cycle)	WLAN	8.45	± 9.6 %
10716	AAA	IEEE 802.11ax (40MHz, MCS9, 99pc duty cycle)	WLAN	8.30	± 9.6 %
10717	AAA	IEEE 802.11ax (40MHz, MCS10, 99pc duty cycle)	WLAN	8.48	± 9.6 %
10718	AAA	IEEE 802.11ax (40MHz, MCS11, 99pc duty cycle)	WLAN	8.24	± 9.6 %
10719	AAA	IEEE 802.11ax (80MHz, MCS0, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10720	AAA	IEEE 802.11ax (80MHz, MCS1, 90pc duty cycle)	WLAN	8.87	± 9.6 %
10721	AAA	IEEE 802.11ax (80MHz, MCS2, 90pc duty cycle)	WLAN	8.76	± 9.6 %
10722	AAA	IEEE 802.11ax (80MHz, MCS3, 90pc duty cycle)	WLAN	8.55	± 9.6 %
10723	AAA	IEEE 802.11ax (80MHz, MCS4, 90pc duty cycle)	WLAN	8.70	± 9.6 %
10724	AAA	IEEE 802.11ax (80MHz, MCS5, 90pc duty cycle)	WLAN	8.90	± 9.6 %
10725	AAA	IEEE 802.11ax (80MHz, MCS6, 90pc duty cycle)	WLAN	8.74	± 9.6 %
10726	AAA	IEEE 802.11ax (80MHz, MCS7, 90pc duty cycle)	WLAN	8.72	± 9.6 %
10727	AAA	IEEE 802.11ax (80MHz, MCS8, 90pc duty cycle)	WLAN	8.66	± 9.6 %

10728	AAA	IEEE 802.11ax (80MHz, MCS9, 90pc duty cycle)	WLAN	8.65	± 9.6 %
10729	AAA	IEEE 802.11ax (80MHz, MCS10, 90pc duty cycle)	WLAN	8.64	± 9.6 %
10730	AAA	IEEE 802.11ax (80MHz, MCS11, 90pc duty cycle)	WLAN	8.67	± 9.6 %
10731	AAA	IEEE 802.11ax (80MHz, MCS0, 99pc duty cycle)	WLAN	8.42	± 9.6 %
10732	AAA	IEEE 802.11ax (80MHz, MCS1, 99pc duty cycle)	WLAN	8.46	± 9.6 %
10733	AAA	IEEE 802.11ax (80MHz, MCS2, 99pc duty cycle)	WLAN	8.40	± 9.6 %
10734	AAA	IEEE 802.11ax (80MHz, MCS3, 99pc duty cycle)	WLAN	8.25	± 9.6 %
10735	AAA	IEEE 802.11ax (80MHz, MCS4, 99pc duty cycle)	WLAN	8.33	± 9.6 %
10736	AAA	IEEE 802.11ax (80MHz, MCS5, 99pc duty cycle)	WLAN	8.27	± 9.6 %
10737	AAA	IEEE 802.11ax (80MHz, MCS6, 99pc duty cycle)	WLAN	8.36	± 9.6 %
10738	AAA	IEEE 802.11ax (80MHz, MCS7, 99pc duty cycle)	WLAN	8.42	± 9.6 %
10739	AAA	IEEE 802.11ax (80MHz, MCS8, 99pc duty cycle)	WLAN	8.29	± 9.6 %
10740	AAA	IEEE 802.11ax (80MHz, MCS9, 99pc duty cycle)	WLAN	8.48	± 9.6 %
10741	AAA	IEEE 802.11ax (80MHz, MCS10, 99pc duty cycle)	WLAN	8.40	± 9.6 %
10742	AAA	IEEE 802.11ax (80MHz, MCS11, 99pc duty cycle)	WLAN	8.43	± 9.6 %
10743	AAA	IEEE 802.11ax (160MHz, MCS0, 90pc duty cycle)	WLAN	8.94	± 9.6 %
10744	AAA	IEEE 802.11ax (160MHz, MCS1, 90pc duty cycle)	WLAN	9.16	± 9.6 %
10745	AAA	IEEE 802.11ax (160MHz, MCS2, 90pc duty cycle)	WLAN	8.93	± 9.6 %
10746	AAA	IEEE 802.11ax (160MHz, MCS3, 90pc duty cycle)	WLAN	9.11	± 9.6 %
10747	AAA	IEEE 802.11ax (160MHz, MCS4, 90pc duty cycle)	WLAN	9.04	± 9.6 %
10748	AAA	IEEE 802.11ax (160MHz, MCS5, 90pc duty cycle)	WLAN	8.93	± 9.6 %
10749	AAA	IEEE 802.11ax (160MHz, MCS6, 90pc duty cycle)	WLAN	8.90	± 9.6 %
10750	AAA	IEEE 802.11ax (160MHz, MCS7, 90pc duty cycle)	WLAN	8.79	± 9.6 %
10751	AAA	IEEE 802.11ax (160MHz, MCS8, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10752	AAA	IEEE 802.11ax (160MHz, MCS9, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10753	AAA	IEEE 802.11ax (160MHz, MCS10, 90pc duty cycle)	WLAN	9.00	± 9.6 %
10754	AAA	IEEE 802.11ax (160MHz, MCS11, 90pc duty cycle)	WLAN	8.94	± 9.6 %
10755	AAA	IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle)	WLAN	8.64	± 9.6 %
10756	AAA	IEEE 802.11ax (160MHz, MCS1, 99pc duty cycle)	WLAN	8.77	± 9.6 %
10757	AAA	IEEE 802.11ax (160MHz, MCS2, 99pc duty cycle)	WLAN	8.77	± 9.6 %
10758	AAA	IEEE 802.11ax (160MHz, MCS3, 99pc duty cycle)	WLAN	8.69	± 9.6 %
10759	AAA	IEEE 802.11ax (160MHz, MCS4, 99pc duty cycle)	WLAN	8.58	± 9.6 %
10760	AAA	IEEE 802.11ax (160MHz, MCS5, 99pc duty cycle)	WLAN	8.49	± 9.6 %
10761	AAA	IEEE 802.11ax (160MHz, MCS6, 99pc duty cycle)	WLAN	8.58	± 9.6 %
10762	AAA	IEEE 802.11ax (160MHz, MCS7, 99pc duty cycle)	WLAN	8.49	± 9.6 %
10763	AAA	IEEE 802.11ax (160MHz, MCS8, 99pc duty cycle)	WLAN	8.53	± 9.6 %
10764	AAA	IEEE 802.11ax (160MHz, MCS9, 99pc duty cycle)	WLAN	8.54	± 9.6 %
10765	AAA	IEEE 802.11ax (160MHz, MCS10, 99pc duty cycle)	WLAN	8.54	± 9.6 %
10766	AAA	IEEE 802.11ax (160MHz, MCS11, 99pc duty cycle)	WLAN	8.51	± 9.6 %

[5] Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

In Collaboration with
s p e a g
CALIBRATION LABORATORY
Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com Http://www.chinattl.cn

中国认可
国际互认
校准
CALIBRATION
CNAS L0570

Client **Amphenol** **Certificate No: Z20-60072**

CALIBRATION CERTIFICAT

Object	ES3DV3 - SN : SN:3166
Calibration Procedure(s)	FF-Z11-004-01 Calibration Procedures for Dosimetric E-field Probes
Calibration date:	March 02, 2020

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Power Meter NRP2	101919	18-Jun-19(CTTL, No.J19X05125)	Jun-20
Power sensor NRP-Z91	101547	18-Jun-19(CTTL, No.J19X05125)	Jun-20
Power sensor NRP-Z91	101548	18-Jun-19(CTTL, No.J19X05125)	Jun-20
Reference 10dBAttenuator	18N50W-10dB	10-Feb-20(CTTL, No.J20X00525)	Feb-22
Reference 20dBAttenuator	18N50W-20dB	10-Feb-20(CTTL, No.J20X00526)	Feb-22
Reference Probe EX3DV4	SN 7307	24-May-19(SPEAG, No.EX3-7307_May19/2)	May-20
DAE4	SN 1525	26-Aug-19(SPEAG, No.DAE4-1525_Aug19)	Aug-20

Secondary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
SignalGenerator MG3700A	6201052605	18-Jun-19(CTTL, No.J19X05127)	Jun-20
Network Analyzer E5071C	MY46110673	10-Feb-20(CTTL, No.J20X00515)	Feb-21

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

Issued: March 04, 2020

In Collaboration with
s p e a g
CALIBRATION LABORATORY
Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com Http://www.chinattl.cn

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 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≤900MHz in TEM-cell; f>1800MHz: waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not effect 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 (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;VRx,y,z:*A,B,C 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≤800MHz) and inside waveguide using analytical field distributions based on power measurements for f >800MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty valued 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±50MHz to±100MHz.
- *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).

In Collaboration with
s p e a g
CALIBRATION LABORATORY
Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com Http://www.chinattl.cn

Probe ES3DV3

SN: 3166

Calibrated: March 02, 2020

Calibrated for DASY/EASY Systems

(Note: non-compatible with DASY2 system!)

In Collaboration with
s p e a g
CALIBRATION LABORATORY
Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com Http://www.chinattl.cn

DASY/EASY – Parameters of Probe: ES3DV3 – SN: 3166

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (*k*=2)
Norm(μV/(V/m)²)[A]	0.84	1.16	1.32	±10.0%
DCP(mV)[B]	105.7	104.3	104.6	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Unc[E] (*k*=2)
0	CW	X	0.0	0.0	1.0	0.00	224.9	±2.2%
		Y	0.0	0.0	1.0		271.2	
		Z	0.0	0.0	1.0		295.7	

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] Uncertainly is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

In Collaboration with
s p e a g
CALIBRATION LABORATORY
Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com Http://www.chinattl.cn

DASY/EASY – Parameters of Probe : ES3DV3 – SN: 3166

Calibration Parameter Determined in Head Tissue Simulating Media

f [MHz][C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha[G]	Depth[G] (mm)	Unct. (k=2)
750	41.9	0.89	6.43	6.43	6.43	0.40	1.40	±12.1%
835	41.5	0.90	6.29	6.29	6.29	0.49	1.50	±12.1%
900	41.5	0.97	6.23	6.23	6.23	0.39	1.60	±12.1%
1750	40.1	1.37	5.35	5.35	5.35	0.56	1.36	±12.1%
1900	40.0	1.40	5.16	5.16	5.16	0.66	1.28	±12.1%
2000	40.0	1.40	5.20	5.20	5.20	0.62	1.31	±12.1%
2300	39.5	1.67	5.03	5.03	5.03	0.90	1.08	±12.1%
2450	39.2	1.80	4.76	4.76	4.76	0.90	1.10	±12.1%
2600	39.0	1.96	4.63	4.63	4.63	0.90	1.08	±12.1%

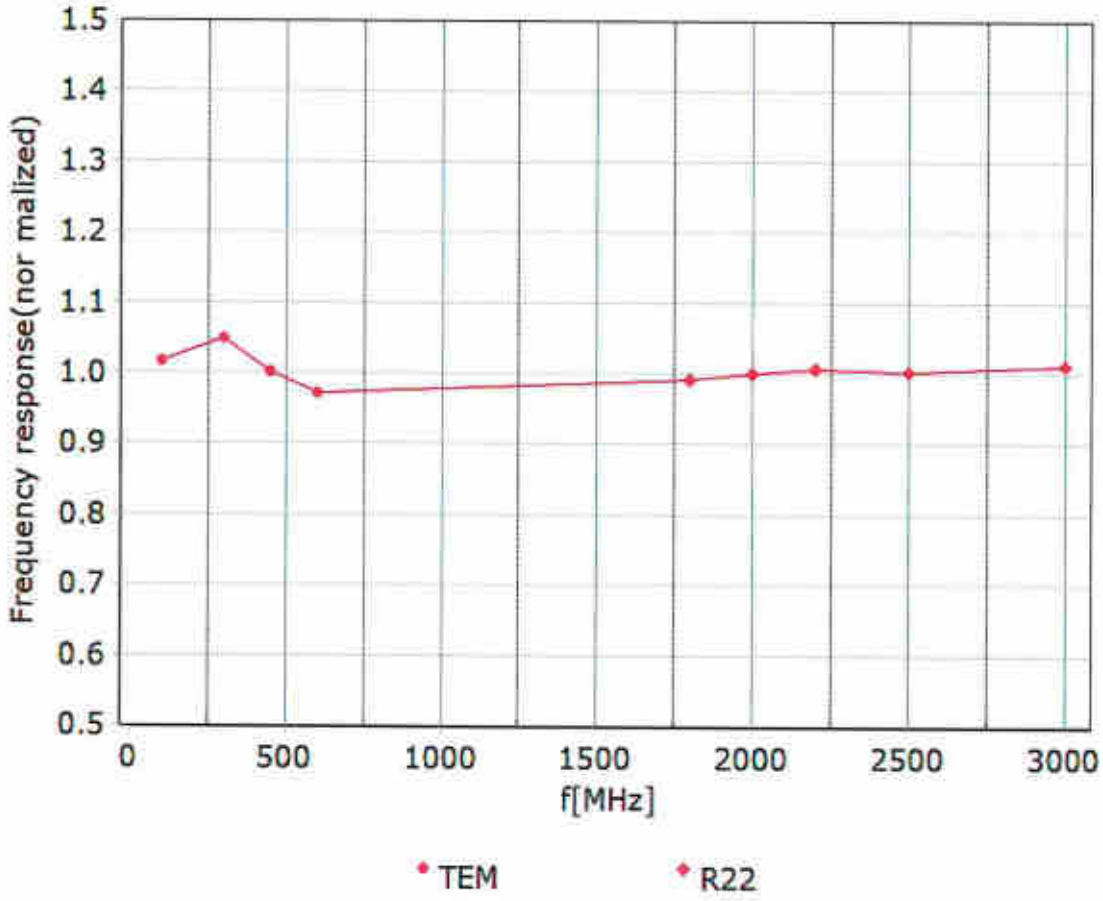
[C] Frequency validity above 300 MHz of ±100MHz only applies for DASY v4.4 and higher (Page 2), else it is restricted to ±50MHz. The uncertainty is the RSS of ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25,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

[F] At frequency below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ±10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ±5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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

In Collaboration with
s p e a g
CALIBRATION LABORATORY
Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com Http://www.chinattl.cn

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

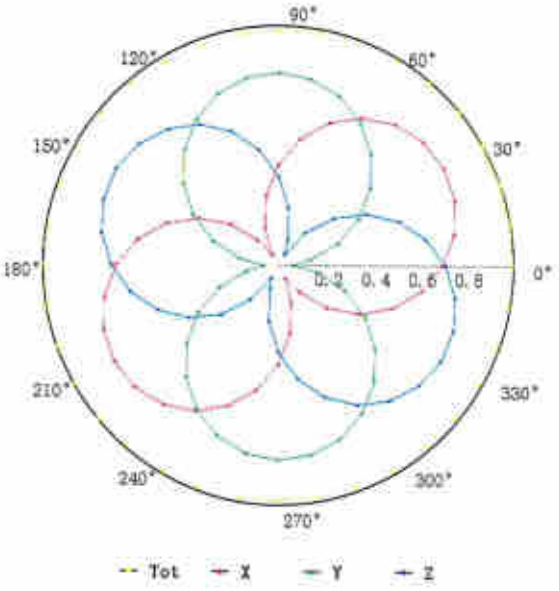


Uncertainty of Frequency Response of E-field: ±7.4% (*k*=2)

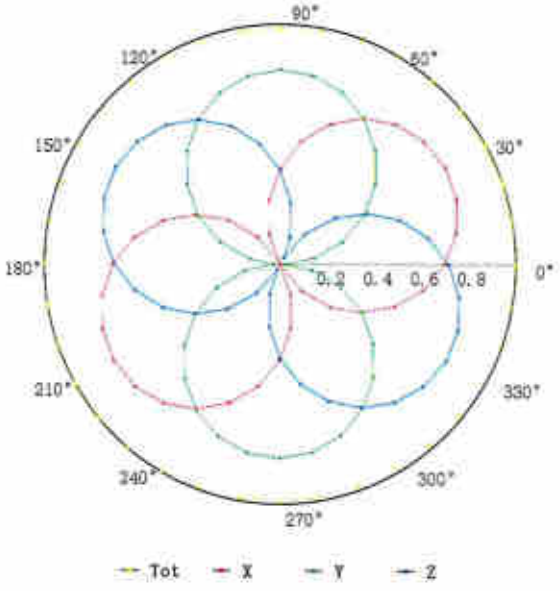
In Collaboration with
s p e a g
CALIBRATION LABORATORY
Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com Http://www.chinattl.cn

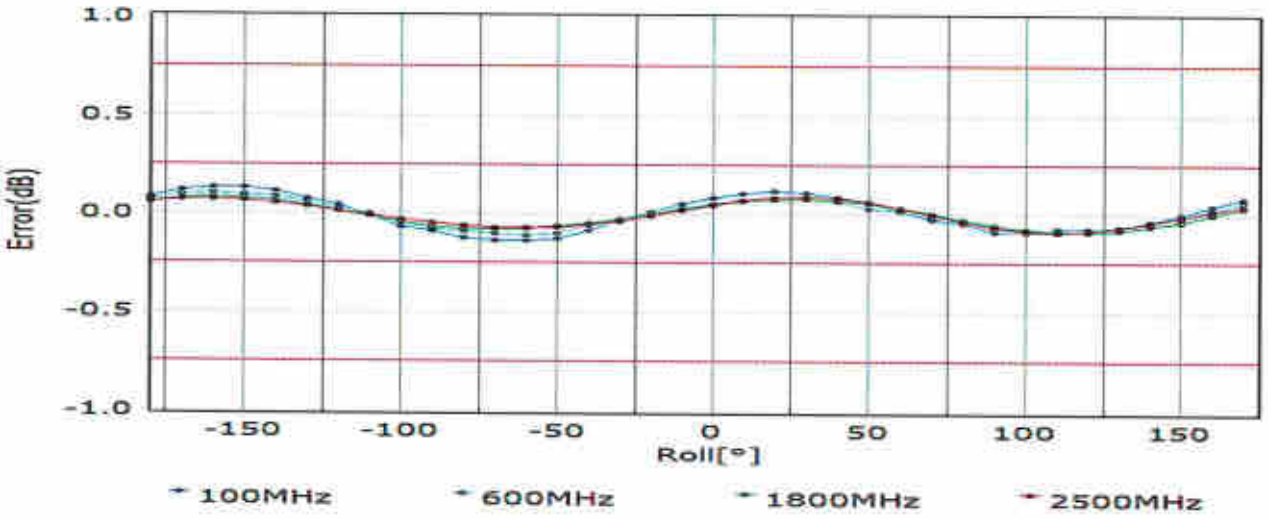
Receiving Pattern (Φ), θ=0°

f=600 MHz, TEM



f=1800 MHz, R22

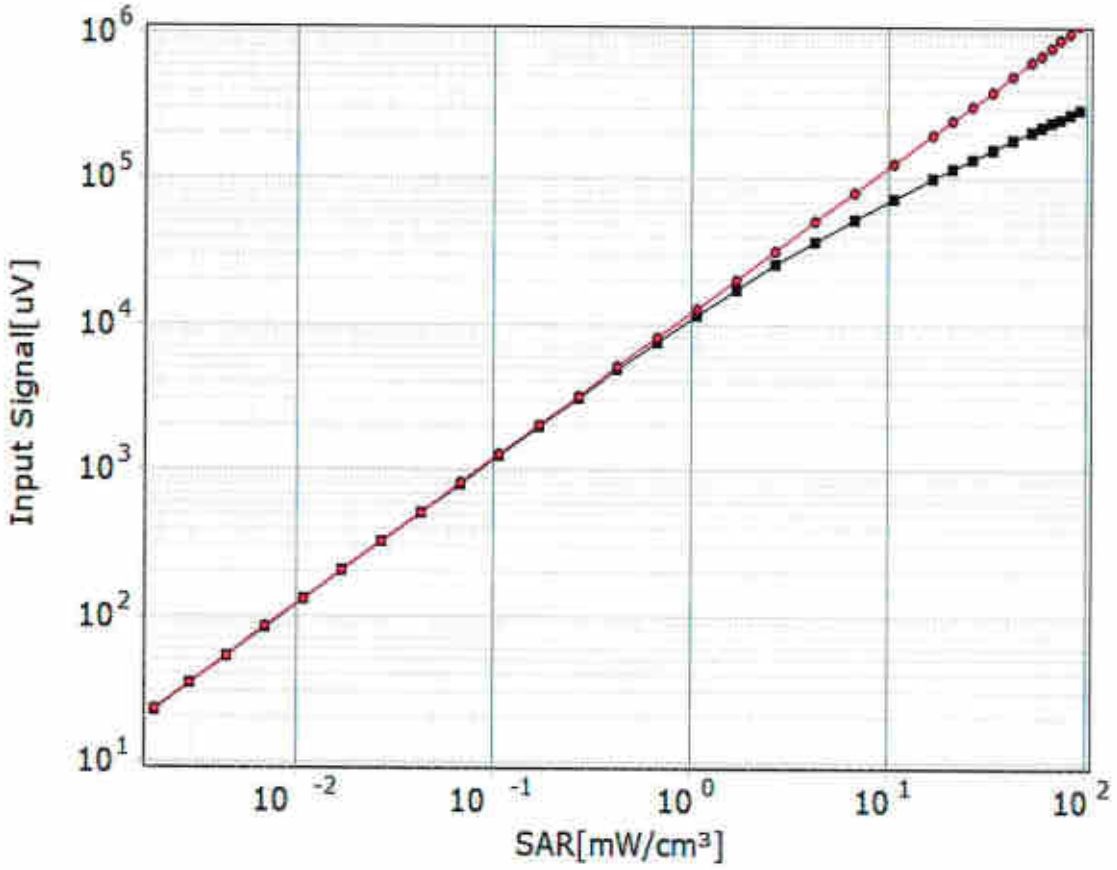


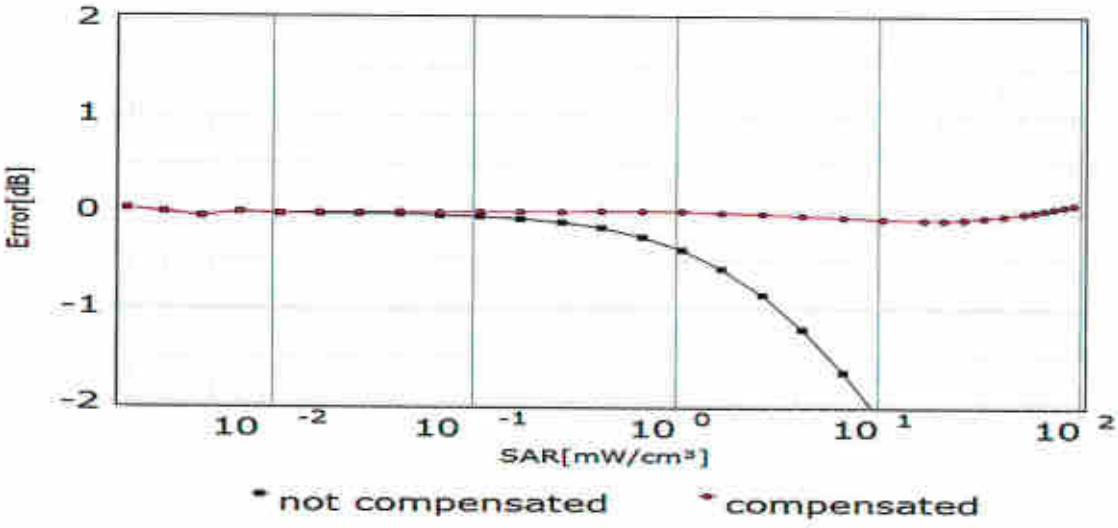


Uncertainty of Axial Isotropy Assessment: ±1.2% (k=2)

In Collaboration with
s p e a g
CALIBRATION LABORATORY
Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com Http://www.chinattl.cn

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



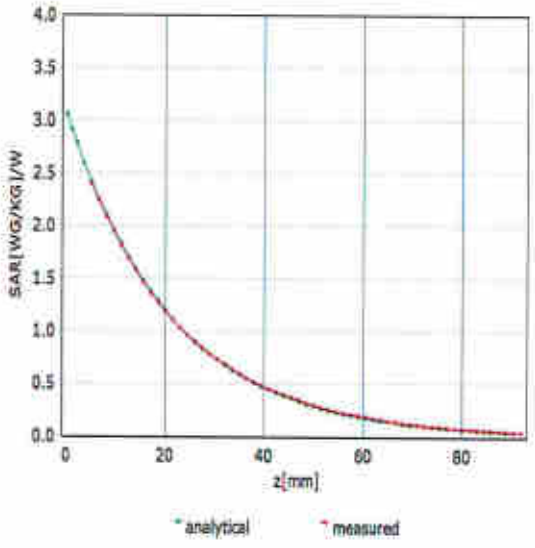


Uncertainty of Linearity Assessment: ±0.9% (*k*=2)

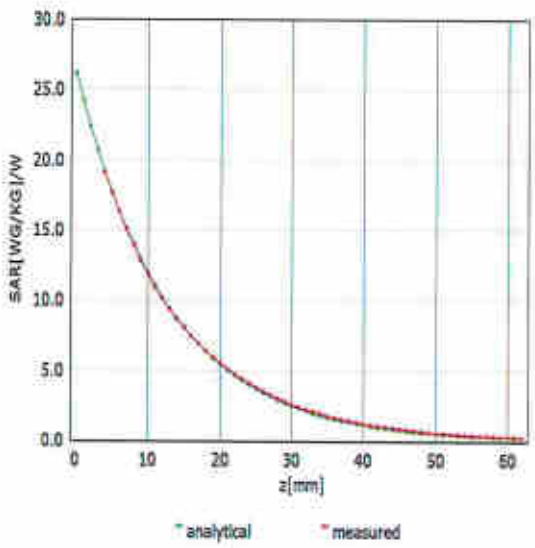
In Collaboration with
s p e a g
CALIBRATION LABORATORY
Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com Http://www.chinattl.cn

Conversion Factor Assessment

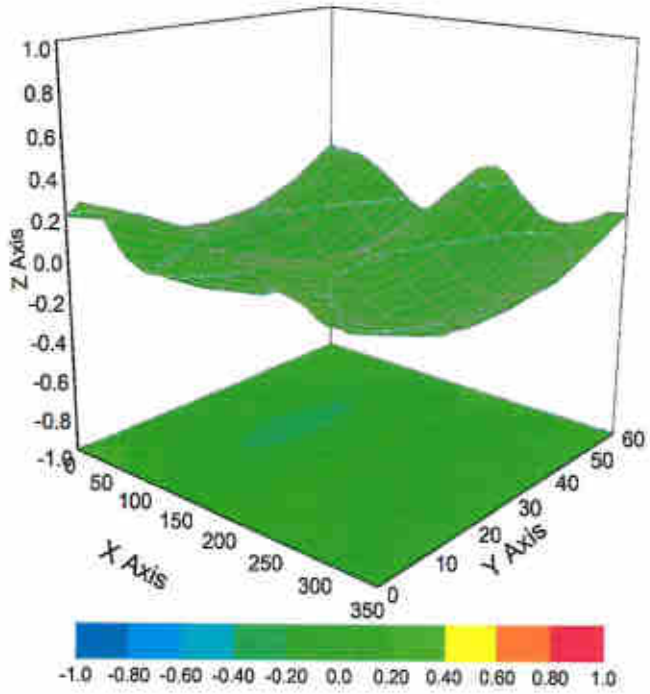
f=750 MHz,WGLS R9(H_convF)



f=1750 MHz,WGLS R22(H_convF)



Deviation from Isotropy in Liquid



Uncertainty of Spherical Isotropy Assessment: ±3.2% (*k*=2)

In Collaboration with
s p e a g
CALIBRATION LABORATORY
Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com Http://www.chinattl.cn

DASY/EASY – Parameters of Probe: ES3DV3 – SN: 3166

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	6.2
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disable
Probe Overall Length	337mm
Probe Body Diameter	10mm
Tip Length	10mm
Tip Diameter	4mm
Probe Tip to Sensor X Calibration Point	2mm
Probe Tip to Sensor Y Calibration Point	2mm
Probe Tip to Sensor Z Calibration Point	2mm
Recommended Measurement Distance from Surface	3mm

Appendix E. Conducted RF Output Power Table

The detailed power table are shown as follows.

Full Power Mode

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	33.31	33.26	33.13	33.50	24.31	24.26	24.13	24.50
GPRS 1 Tx slot	33.30	33.25	33.12	33.50	24.30	24.25	24.12	24.50
GPRS 2 Tx slots	32.33	32.36	32.13	33.00	26.33	26.36	26.13	27.00
GPRS 3 Tx slots	30.56	30.66	30.51	31.50	26.30	26.40	26.25	27.24
GPRS 4 Tx slots	29.08	29.28	29.09	30.00	26.08	26.28	26.09	27.00
EDGE 1 Tx slot	27.23	27.37	27.01	28.00	18.23	18.37	18.01	19.00
EDGE 2 Tx slots	26.22	26.37	26.03	27.50	20.22	20.37	20.03	21.50
EDGE 3 Tx slots	24.83	24.87	24.90	25.50	20.57	20.61	20.64	21.24
EDGE 4 Tx slots	23.19	23.26	23.24	24.50	20.19	20.26	20.24	21.50

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	30.48	30.07	29.34	30.50	21.48	21.07	20.34	21.50
GPRS 1 Tx slot	30.47	30.06	29.33	30.50	21.47	21.06	20.33	21.50
GPRS 2 Tx slots	29.38	29.11	28.24	30.00	23.38	23.11	22.24	24.00
GPRS 3 Tx slots	27.48	27.71	26.65	28.50	23.22	23.45	22.39	24.24
GPRS 4 Tx slots	26.12	25.94	25.03	26.50	23.12	22.94	22.03	23.50
EDGE 1 Tx slot	26.32	25.86	25.21	27.00	17.32	16.86	16.21	18.00
EDGE 2 Tx slots	25.26	24.90	24.18	25.50	19.26	18.90	18.18	19.50
EDGE 3 Tx slots	23.17	23.47	22.66	23.50	18.91	19.21	18.40	19.24
EDGE 4 Tx slots	22.10	21.88	21.04	22.50	19.10	18.88	18.04	19.50

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	23.74	23.82	23.34	24.00	23.13	23.39	22.90	24.00	23.55	23.65	23.21	24.00
3GPP Rel 99	RMC 12.2Kbps	23.75	23.84	23.35	24.00	23.14	23.40	22.90	24.00	23.56	23.66	23.22	24.00
3GPP Rel 6	HSDPA Subtest-1	22.96	23.02	22.54	23.50	22.51	22.77	22.32	23.50	23.07	23.12	22.69	23.50
3GPP Rel 6	HSDPA Subtest-2	22.96	23.07	22.68	23.50	22.48	22.77	22.28	23.50	23.09	23.17	22.72	23.50
3GPP Rel 6	HSDPA Subtest-3	22.43	22.55	22.13	23.00	21.99	22.26	21.79	23.00	22.50	22.69	22.28	23.00
3GPP Rel 6	HSDPA Subtest-4	22.46	22.50	22.22	23.00	21.96	22.25	21.77	23.00	22.53	22.63	22.20	23.00
3GPP Rel 8	DC-HSDPA Subtest-1	22.97	23.03	22.55	23.50	22.50	22.76	22.33	23.50	23.08	23.13	22.70	23.50
3GPP Rel 8	DC-HSDPA Subtest-2	22.95	23.08	22.69	23.50	22.47	22.77	22.27	23.50	23.10	23.18	22.71	23.50
3GPP Rel 8	DC-HSDPA Subtest-3	22.45	22.54	22.14	23.00	21.98	22.25	21.80	23.00	22.51	22.70	22.27	23.00
3GPP Rel 8	DC-HSDPA Subtest-4	22.47	22.48	22.23	23.00	21.95	22.24	21.76	23.00	22.54	22.64	22.22	23.00
3GPP Rel 6	HSUPA Subtest-1	23.01	23.04	22.58	23.50	22.52	22.78	22.38	23.50	23.09	23.12	22.71	23.50
3GPP Rel 6	HSUPA Subtest-2	20.96	21.05	20.57	21.50	20.53	20.74	20.27	21.50	21.10	21.16	20.70	21.50
3GPP Rel 6	HSUPA Subtest-3	21.98	22.08	21.67	22.50	21.50	21.82	21.35	22.50	22.09	22.13	21.73	22.50
3GPP Rel 6	HSUPA Subtest-4	21.00	21.10	20.69	21.50	20.47	20.80	20.34	21.50	21.04	21.17	20.73	21.50
3GPP Rel 6	HSUPA Subtest-5	23.00	23.10	22.78	23.50	22.50	22.80	22.38	23.50	23.10	23.20	22.70	23.50

Band	CDMA BC0			Tune-up Limit (dBm)	CDMA BC1			Tune-up Limit (dBm)
TX Channel	1013	384	777		25	600	1175	
Frequency (MHz)	824.7	836.52	848.31		1851.25	1880	1908.75	
RC1 SO55	24.87	24.82	24.63	25.00	24.40	24.61	24.59	25.00
RC3 SO55	24.81	24.88	24.64	25.00	24.43	24.64	24.61	25.00
RC3 SO32 (F+SCH)	24.83	24.86	24.67	25.00	24.44	24.63	24.62	25.00
RC3 SO32 (+SCH)	24.81	24.82	24.63	25.00	24.45	24.52	24.62	25.00
RTAP 153.6Kbps	24.85	24.86	24.65	25.00	24.44	24.63	24.61	25.00
RETAP 4096Bits	24.82	24.86	24.62	25.00	24.43	24.61	24.62	25.00

SPORTON LAB.

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	23.20	23.38	23.33	24	0
20	QPSK	1	49	23.24	23.25	23.07		
20	QPSK	1	99	23.14	23.03	22.90		
20	QPSK	50	0	22.30	22.36	22.10	23	1
20	QPSK	50	24	22.09	22.35	22.13		
20	QPSK	50	50	22.30	22.26	21.94		
20	QPSK	100	0	22.34	22.35	21.90		
20	16QAM	1	0	22.39	22.36	22.42	23	1
20	16QAM	1	49	22.27	22.28	22.33		
20	16QAM	1	99	22.12	22.08	22.31		
20	16QAM	50	0	21.18	21.14	21.16	22	2
20	16QAM	50	24	21.28	21.21	21.15		
20	16QAM	50	50	21.19	21.10	21.15		
20	16QAM	100	0	21.21	21.11	21.10		
20	64QAM	1	0	21.36	21.36	21.09	22	2
20	64QAM	1	49	21.09	21.09	20.98		
20	64QAM	1	99	21.30	21.27	21.22		
20	64QAM	50	0	20.18	20.13	20.23	21	3
20	64QAM	50	24	20.30	20.20	20.25		
20	64QAM	50	50	20.21	20.11	20.15		
20	64QAM	100	0	20.22	20.12	20.09		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	23.32	23.36	22.95	24	0
15	QPSK	1	37	23.29	23.30	22.92		
15	QPSK	1	74	23.18	23.15	22.88		
15	QPSK	36	0	22.41	22.33	22.12	23	1
15	QPSK	36	20	22.16	22.03	22.10		
15	QPSK	36	39	22.08	21.97	22.02		
15	QPSK	75	0	22.11	21.99	22.18		
15	16QAM	1	0	22.30	22.36	22.20	23	1
15	16QAM	1	37	22.29	22.30	22.38		
15	16QAM	1	74	22.13	22.07	22.23		
15	16QAM	36	0	21.26	21.18	21.09	22	2
15	16QAM	36	20	21.32	21.23	21.31		
15	16QAM	36	39	21.28	21.17	21.21		
15	16QAM	75	0	21.30	21.16	21.16		
15	64QAM	1	0	21.13	21.40	21.18	22	2
15	64QAM	1	37	21.23	21.21	21.33		
15	64QAM	1	74	21.05	20.93	21.27		
15	64QAM	36	0	20.28	20.17	20.09	21	3
15	64QAM	36	20	20.32	20.23	20.37		
15	64QAM	36	39	20.26	20.18	20.23		
15	64QAM	75	0	20.32	20.18	20.18		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	23.25	23.15	23.33	24	0
10	QPSK	1	25	23.20	23.19	23.12		
10	QPSK	1	49	23.17	23.14	23.01		
10	QPSK	25	0	22.21	22.03	22.08	23	1
10	QPSK	25	12	22.26	22.14	21.95		
10	QPSK	25	25	22.12	21.99	21.81		
10	QPSK	50	0	22.19	22.03	21.78		
10	16QAM	1	0	22.31	22.17	22.12	23	1
10	16QAM	1	25	22.09	22.18	22.08		
10	16QAM	1	49	22.20	22.13	22.07		
10	16QAM	25	0	21.19	21.24	21.15	22	2
10	16QAM	25	12	21.20	21.33	21.10		
10	16QAM	25	25	21.31	21.17	21.03		
10	16QAM	50	0	21.35	21.23	20.86		
10	64QAM	1	0	21.26	21.10	21.13	22	2
10	64QAM	1	25	21.20	21.29	21.18		
10	64QAM	1	49	21.12	21.14	21.12		
10	64QAM	25	0	20.41	20.23	20.20	21	3
10	64QAM	25	12	20.20	20.31	20.16		
10	64QAM	25	25	20.30	20.18	20.34		
10	64QAM	50	0	20.34	20.24	20.33		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	23.37	23.12	23.11	24	0
5	QPSK	1	12	23.38	23.29	23.08		
5	QPSK	1	24	23.19	23.04	22.91		
5	QPSK	12	0	22.45	22.27	22.18	23	1
5	QPSK	12	7	22.41	22.28	22.11		
5	QPSK	12	13	22.34	22.16	21.99		
5	QPSK	25	0	22.40	22.25	21.97		
5	16QAM	1	0	22.37	22.50	22.40	23	1
5	16QAM	1	12	22.40	22.30	22.29		
5	16QAM	1	24	22.19	22.35	22.26		
5	16QAM	12	0	21.32	21.47	21.39	22	2
5	16QAM	12	7	21.30	21.08	21.30		
5	16QAM	12	13	21.22	21.43	21.17		
5	16QAM	25	0	21.25	21.46	21.16		
5	64QAM	1	0	21.26	21.43	21.28	22	2
5	64QAM	1	12	21.36	21.51	21.36		
5	64QAM	1	24	21.08	21.27	21.22		
5	64QAM	12	0	20.31	20.48	20.28	21	3
5	64QAM	12	7	20.29	20.46	20.18		
5	64QAM	12	13	20.14	20.36	20.17		
5	64QAM	25	0	20.25	20.45	20.18		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	23.24	23.30	23.38	24	0
3	QPSK	1	8	23.28	23.06	23.31		
3	QPSK	1	14	23.09	23.32	23.21		
3	QPSK	8	0	22.32	22.51	22.26	23	1
3	QPSK	8	4	22.30	22.51	22.21		
3	QPSK	8	7	22.22	22.45	22.18		
3	QPSK	15	0	22.28	22.46	22.30		
3	16QAM	1	0	22.25	22.40	22.30	23	1
3	16QAM	1	8	22.27	22.52	22.34		
3	16QAM	1	14	22.09	22.32	22.14		
3	16QAM	8	0	21.24	21.44	21.25	22	2
3	16QAM	8	4	21.22	21.39	21.25		
3	16QAM	8	7	21.17	21.33	21.15		
3	16QAM	15	0	21.19	21.39	21.05		
3	64QAM	1	0	21.17	21.35	21.26	22	2
3	64QAM	1	8	21.24	21.46	21.26		
3	64QAM	1	14	21.04	21.23	21.11		
3	64QAM	8	0	20.22	20.39	20.24	21	3
3	64QAM	8	4	20.21	20.40	20.24		
3	64QAM	8	7	20.12	20.34	20.14		
3	64QAM	15	0	20.15	20.34	20.06		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	23.14	23.32	23.30	24	0
1.4	QPSK	1	3	23.13	23.37	23.21		
1.4	QPSK	1	5	23.05	23.25	23.09		
1.4	QPSK	3	0	23.17	23.37	23.18		
1.4	QPSK	3	1	23.19	23.09	23.28		
1.4	QPSK	3	3	23.12	23.28	23.11		
1.4	QPSK	6	0	22.19	22.36	22.23	23	1
1.4	16QAM	1	0	22.12	22.33	22.15	23	1
1.4	16QAM	1	3	22.15	22.38	22.05		
1.4	16QAM	1	5	22.07	22.22	22.04		
1.4	16QAM	3	0	21.93	22.09	22.17		
1.4	16QAM	3	1	21.95	22.14	21.98		
1.4	16QAM	3	3	21.86	22.00	21.94		
1.4	16QAM	6	0	21.09	21.25	20.96	22	2
1.4	64QAM	1	0	21.06	21.27	21.09	22	2
1.4	64QAM	1	3	21.05	21.28	21.19		
1.4	64QAM	1	5	20.92	21.16	21.09		
1.4	64QAM	3	0	20.95	21.13	21.34		
1.4	64QAM	3	1	21.01	21.16	21.37		
1.4	64QAM	3	3	20.88	21.06	21.30		
1.4	64QAM	6	0	19.98	20.18	19.91	21	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	23.08	23.18	22.87	24	0
20	QPSK	1	49	22.99	22.72	22.96		
20	QPSK	1	99	22.96	23.07	22.98		
20	QPSK	50	0	22.12	22.13	21.87	23	1
20	QPSK	50	24	22.12	21.85	21.86		
20	QPSK	50	50	21.90	21.65	21.74		
20	QPSK	100	0	21.99	22.00	21.58		
20	16QAM	1	0	22.21	21.97	21.89	23	1
20	16QAM	1	49	22.31	22.06	21.93		
20	16QAM	1	99	21.91	21.88	21.83		
20	16QAM	50	0	21.32	21.05	20.87	22	2
20	16QAM	50	24	21.33	21.05	20.87		
20	16QAM	50	50	21.11	20.85	20.84		
20	16QAM	100	0	21.16	20.98	20.77		
20	64QAM	1	0	21.08	20.76	20.71	22	2
20	64QAM	1	49	21.16	20.86	20.73		
20	64QAM	1	99	20.80	20.76	20.67		
20	64QAM	50	0	20.28	20.01	19.85	21	3
20	64QAM	50	24	20.32	20.03	19.87		
20	64QAM	50	50	20.11	19.86	19.85		
20	64QAM	100	0	20.15	20.01	19.80		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	22.93	22.65	22.62	24	0
15	QPSK	1	37	23.01	22.70	22.65		
15	QPSK	1	74	22.81	22.60	22.53		
15	QPSK	36	0	22.13	21.87	21.72	23	1
15	QPSK	36	20	22.09	21.90	21.74		
15	QPSK	36	39	22.00	21.69	21.66		
15	QPSK	75	0	22.01	21.84	21.58		
15	16QAM	1	0	22.31	21.94	21.85	23	1
15	16QAM	1	37	22.33	22.06	21.87		
15	16QAM	1	74	22.10	21.91	21.83		
15	16QAM	36	0	21.34	21.04	20.86	22	2
15	16QAM	36	20	21.26	21.09	20.84		
15	16QAM	36	39	21.17	20.87	20.84		
15	16QAM	75	0	21.21	21.03	20.79		
15	64QAM	1	0	21.10	20.76	20.74	22	2
15	64QAM	1	37	21.18	20.88	20.77		
15	64QAM	1	74	20.85	20.77	20.76		
15	64QAM	36	0	20.36	20.05	19.93	21	3
15	64QAM	36	20	20.29	20.08	19.92		
15	64QAM	36	39	20.19	19.90	19.86		
15	64QAM	75	0	20.23	20.02	19.79		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	22.90	22.74	22.63	24	0
10	QPSK	1	25	23.12	22.73	22.70		
10	QPSK	1	49	22.73	22.71	22.67		
10	QPSK	25	0	22.19	21.84	21.85	23	1
10	QPSK	25	12	22.15	21.91	21.73		
10	QPSK	25	25	22.04	21.71	21.69		
10	QPSK	50	0	22.08	21.84	21.74		
10	16QAM	1	0	22.29	22.18	22.38	23	1
10	16QAM	1	25	22.20	22.16	22.30		
10	16QAM	1	49	22.12	22.28	22.16		
10	16QAM	25	0	21.37	21.04	20.96	22	2
10	16QAM	25	12	21.38	21.13	20.95		
10	16QAM	25	25	21.23	20.91	20.90		
10	16QAM	50	0	21.28	21.00	20.84		
10	64QAM	1	0	21.27	20.87	20.82	22	2
10	64QAM	1	25	21.00	21.13	20.89		
10	64QAM	1	49	21.07	20.79	20.80		
10	64QAM	25	0	20.40	20.04	20.05	21	3
10	64QAM	25	12	20.39	20.14	20.16		
10	64QAM	25	25	20.22	19.91	19.97		
10	64QAM	50	0	20.24	20.04	19.74		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	23.14	23.04	22.96	24	0
5	QPSK	1	12	23.17	22.99	22.90		
5	QPSK	1	24	23.02	22.80	22.77		
5	QPSK	12	0	22.24	22.03	22.00	23	1
5	QPSK	12	7	22.29	22.01	21.91		
5	QPSK	12	13	22.16	21.85	21.82		
5	QPSK	25	0	22.22	21.84	21.76		
5	16QAM	1	0	22.12	22.27	22.21	23	1
5	16QAM	1	12	22.15	22.39	22.06		
5	16QAM	1	24	22.02	22.13	22.01		
5	16QAM	12	0	21.14	21.14	21.19	22	2
5	16QAM	12	7	21.13	21.13	21.15		
5	16QAM	12	13	21.05	21.00	21.04		
5	16QAM	25	0	21.09	21.06	20.95		
5	64QAM	1	0	21.03	21.04	20.93	22	2
5	64QAM	1	12	21.07	21.04	21.05		
5	64QAM	1	24	20.92	21.02	20.92		
5	64QAM	12	0	20.10	20.20	20.18	21	3
5	64QAM	12	7	20.14	20.12	20.08		
5	64QAM	12	13	20.05	20.05	19.99		
5	64QAM	25	0	20.08	20.07	20.01		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	22.98	22.78	22.78	24	0
3	QPSK	1	8	22.98	22.84	22.69		
3	QPSK	1	14	23.04	22.81	22.68		
3	QPSK	8	0	22.25	21.85	21.76	23	1
3	QPSK	8	4	22.24	21.89	21.83		
3	QPSK	8	7	22.19	21.81	21.76		
3	QPSK	15	0	22.24	21.84	21.84		
3	16QAM	1	0	22.12	22.11	22.09	23	1
3	16QAM	1	8	22.14	22.17	22.10		
3	16QAM	1	14	22.03	22.06	21.99		
3	16QAM	8	0	21.16	21.13	21.14	22	2
3	16QAM	8	4	21.17	21.14	21.04		
3	16QAM	8	7	21.11	21.02	21.04		
3	16QAM	15	0	21.08	21.08	20.97		
3	64QAM	1	0	21.03	21.14	20.99	22	2
3	64QAM	1	8	21.09	21.16	21.27		
3	64QAM	1	14	20.94	21.09	20.97		
3	64QAM	8	0	20.10	20.09	19.97	21	3
3	64QAM	8	4	20.10	20.11	20.03		
3	64QAM	8	7	20.08	19.98	19.96		
3	64QAM	15	0	20.42	20.05	19.93		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	23.07	22.71	22.66	24	0
1.4	QPSK	1	3	23.10	22.72	22.74		
1.4	QPSK	1	5	23.00	22.66	22.62		
1.4	QPSK	3	0	23.07	22.73	22.66		
1.4	QPSK	3	1	23.12	22.77	22.70		
1.4	QPSK	3	3	23.05	22.69	22.67		
1.4	QPSK	6	0	22.13	21.77	21.67	23	1
1.4	16QAM	1	0	22.39	22.03	21.99	23	1
1.4	16QAM	1	3	22.20	22.09	22.06		
1.4	16QAM	1	5	22.35	21.99	21.95		
1.4	16QAM	3	0	22.17	21.81	21.77		
1.4	16QAM	3	1	22.20	21.85	21.80		
1.4	16QAM	3	3	22.14	21.80	21.76		
1.4	16QAM	6	0	21.38	21.04	21.00	22	2
1.4	64QAM	1	0	21.34	20.95	20.93	22	2
1.4	64QAM	1	3	21.34	21.03	21.00		
1.4	64QAM	1	5	21.27	20.95	20.92		
1.4	64QAM	3	0	21.22	20.85	20.78		
1.4	64QAM	3	1	21.26	20.91	20.79		
1.4	64QAM	3	3	21.19	20.82	20.77		
1.4	64QAM	6	0	20.32	19.99	19.91	21	3

Band 5 (Cellular 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	23.22	23.31	23.11	24	0
10	QPSK	1	25	23.21	23.17	22.92		
10	QPSK	1	49	23.24	23.06	22.83		
10	QPSK	25	0	22.12	22.19	21.92	23	1
10	QPSK	25	12	22.18	22.05	21.87		
10	QPSK	25	25	22.16	21.96	21.70		
10	QPSK	50	0	22.10	22.11	21.79		
10	16QAM	1	0	22.42	22.36	22.23	23	1
10	16QAM	1	25	22.40	22.32	22.08		
10	16QAM	1	49	22.34	22.25	21.98		
10	16QAM	25	0	21.34	21.26	21.13	22	2
10	16QAM	25	12	21.36	21.24	21.10		
10	16QAM	25	25	21.34	21.18	20.88		
10	16QAM	50	0	21.33	21.14	20.97		
10	64QAM	1	0	21.24	21.20	21.24	22	2
10	64QAM	1	25	21.30	21.33	21.12		
10	64QAM	1	49	21.40	21.21	20.96		
10	64QAM	25	0	20.33	20.28	20.13	21	3
10	64QAM	25	12	20.42	20.28	20.11		
10	64QAM	25	25	20.34	20.19	19.93		
10	64QAM	50	0	20.35	20.15	20.01		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	23.30	23.11	22.87	24	0
5	QPSK	1	12	23.18	23.23	22.85		
5	QPSK	1	24	23.28	23.05	22.83		
5	QPSK	12	0	22.21	22.08	21.77	23	1
5	QPSK	12	7	22.24	22.12	21.80		
5	QPSK	12	13	22.19	22.05	21.79		
5	QPSK	25	0	22.20	22.06	21.76		
5	16QAM	1	0	22.39	22.28	21.97	23	1
5	16QAM	1	12	22.42	22.35	21.94		
5	16QAM	1	24	22.41	22.17	21.93		
5	16QAM	12	0	21.31	21.28	21.03	22	2
5	16QAM	12	7	21.29	21.34	20.99		
5	16QAM	12	13	21.39	21.23	20.96		
5	16QAM	25	0	21.30	21.25	20.96		
5	64QAM	1	0	21.35	21.17	20.94	22	2
5	64QAM	1	12	21.36	21.27	20.87		
5	64QAM	1	24	21.33	21.14	20.86		
5	64QAM	12	0	20.38	20.25	19.96	21	3
5	64QAM	12	7	20.09	20.28	19.98		
5	64QAM	12	13	20.38	20.22	19.97		
5	64QAM	25	0	20.41	20.27	20.01		
Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	23.08	23.12	22.92	24	0
3	QPSK	1	8	23.09	23.27	22.97		
3	QPSK	1	14	23.30	23.09	22.89		
3	QPSK	8	0	22.23	22.07	21.78	23	1
3	QPSK	8	4	22.27	22.08	21.91		
3	QPSK	8	7	22.18	22.01	21.78		
3	QPSK	15	0	22.23	22.05	21.73		
3	16QAM	1	0	22.35	22.22	22.10	23	1
3	16QAM	1	8	22.11	22.35	22.08		
3	16QAM	1	14	22.05	22.17	22.06		
3	16QAM	8	0	21.14	21.32	21.01	22	2
3	16QAM	8	4	21.16	21.32	21.02		
3	16QAM	8	7	21.13	21.29	21.01		
3	16QAM	15	0	21.09	21.28	21.03		
3	64QAM	1	0	21.02	21.16	20.96	22	2
3	64QAM	1	8	21.05	21.33	20.94		
3	64QAM	1	14	20.96	21.15	20.92		
3	64QAM	8	0	20.09	20.27	19.97	21	3
3	64QAM	8	4	20.10	20.33	19.99		
3	64QAM	8	7	20.07	20.23	19.96		
3	64QAM	15	0	20.08	20.24	19.94		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	23.24	23.12	22.79	24	0
1.4	QPSK	1	3	23.28	23.20	22.85		
1.4	QPSK	1	5	23.23	23.05	22.78		
1.4	QPSK	3	0	23.26	23.14	22.92		
1.4	QPSK	3	1	23.28	23.17	22.95		
1.4	QPSK	3	3	23.25	23.08	22.91		
1.4	QPSK	6	0	22.13	21.98	21.71	23	1
1.4	16QAM	1	0	22.38	22.29	22.13	23	1
1.4	16QAM	1	3	22.09	22.36	22.19		
1.4	16QAM	1	5	22.38	22.23	22.05		
1.4	16QAM	3	0	22.14	22.06	21.72		
1.4	16QAM	3	1	22.19	22.09	21.78		
1.4	16QAM	3	3	22.15	21.97	21.71		
1.4	16QAM	6	0	21.41	21.26	20.91	22	2
1.4	64QAM	1	0	21.33	21.19	20.89	22	2
1.4	64QAM	1	3	21.37	21.25	20.91		
1.4	64QAM	1	5	21.31	21.13	20.88		
1.4	64QAM	3	0	21.20	21.09	20.77		
1.4	64QAM	3	1	21.24	21.12	20.82		
1.4	64QAM	3	3	21.20	21.02	20.74		
1.4	64QAM	6	0	20.38	20.15	20.04	21	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	23.44	23.54	23.34	24	0
20	QPSK	1	49	23.32	23.34	23.21		
20	QPSK	1	99	23.37	23.35	23.24		
20	QPSK	50	0	22.41	22.48	22.33	23	1
20	QPSK	50	24	22.46	22.4	22.35		
20	QPSK	50	50	22.46	22.41	22.27		
20	QPSK	100	0	22.38	22.42	22.26		
20	16QAM	1	0	22.64	22.66	22.58	23	1
20	16QAM	1	49	22.68	22.73	22.59		
20	16QAM	1	99	22.74	22.73	22.6		
20	16QAM	50	0	21.68	21.63	21.52	22	2
20	16QAM	50	24	21.73	21.68	21.55		
20	16QAM	50	50	21.73	21.68	21.45		
20	16QAM	100	0	21.62	21.59	21.46		
20	64QAM	1	0	21.54	21.54	21.46	22	2
20	64QAM	1	49	21.57	21.58	21.43		
20	64QAM	1	99	21.57	21.58	21.43		
20	64QAM	50	0	20.67	20.61	20.54	21	3
20	64QAM	50	24	20.7	20.65	20.53		
20	64QAM	50	50	20.7	20.65	20.48		
20	64QAM	100	0	20.63	20.57	20.47		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	23.34	23.33	23.23	24	0
15	QPSK	1	37	23.38	23.39	23.23		
15	QPSK	1	74	23.49	23.45	23.29		
15	QPSK	36	0	22.49	22.43	22.36	23	1
15	QPSK	36	20	22.53	22.47	22.4		
15	QPSK	36	39	22.51	22.44	22.31		
15	QPSK	75	0	22.47	22.41	22.36		
15	16QAM	1	0	22.7	22.68	22.6	23	1
15	16QAM	1	37	22.74	22.77	22.56		
15	16QAM	1	74	22.77	22.74	22.58		
15	16QAM	36	0	21.75	21.69	21.56	22	2
15	16QAM	36	20	21.77	21.7	21.58		
15	16QAM	36	39	21.77	21.7	21.49		
15	16QAM	75	0	21.71	21.66	21.54		
15	64QAM	1	0	21.54	21.56	21.5	22	2
15	64QAM	1	37	21.59	21.61	21.48		
15	64QAM	1	74	21.59	21.65	21.43		
15	64QAM	36	0	20.74	20.69	20.58	21	3
15	64QAM	36	20	20.78	20.71	20.57		
15	64QAM	36	39	20.78	20.71	20.51		
15	64QAM	75	0	20.71	20.65	20.55		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	23.37	23.44	23.26	24	0
10	QPSK	1	25	23.38	23.45	23.22		
10	QPSK	1	49	23.44	23.43	23.29		
10	QPSK	25	0	22.55	22.46	22.37	23	1
10	QPSK	25	12	22.55	22.53	22.38		
10	QPSK	25	25	22.57	22.52	22.37		
10	QPSK	50	0	22.49	22.44	22.34		
10	16QAM	1	0	22.77	22.76	22.61	23	1
10	16QAM	1	25	22.77	22.86	22.62		
10	16QAM	1	49	22.83	22.83	22.66		
10	16QAM	25	0	21.71	21.69	21.57	22	2
10	16QAM	25	12	21.77	21.73	21.59		
10	16QAM	25	25	21.74	21.68	21.58		
10	16QAM	50	0	21.68	21.62	21.54		
10	64QAM	1	0	21.73	21.78	21.6	22	2
10	64QAM	1	25	21.78	21.79	21.58		
10	64QAM	1	49	21.78	21.82	21.72		
10	64QAM	25	0	20.72	20.72	20.58	21	3
10	64QAM	25	12	20.78	20.75	20.62		
10	64QAM	25	25	20.76	20.69	20.56		
10	64QAM	50	0	20.67	20.61	20.53		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	23.45	23.41	23.29	24	0
5	QPSK	1	12	23.47	23.53	23.29		
5	QPSK	1	24	23.46	23.5	23.32		
5	QPSK	12	0	22.55	22.48	22.37	23	1
5	QPSK	12	7	22.57	22.56	22.41		
5	QPSK	12	13	22.56	22.56	22.35		
5	QPSK	25	0	22.57	22.51	22.39		
5	16QAM	1	0	22.82	22.75	22.64	23	1
5	16QAM	1	12	22.83	22.82	22.6		
5	16QAM	1	24	22.85	22.81	22.64		
5	16QAM	12	0	21.78	21.75	21.58	22	2
5	16QAM	12	7	21.81	21.75	21.65		
5	16QAM	12	13	21.76	21.74	21.59		
5	16QAM	25	0	21.76	21.7	21.58		
5	64QAM	1	0	21.73	21.72	21.51	22	2
5	64QAM	1	12	21.72	21.77	21.55		
5	64QAM	1	24	21.71	21.71	21.53		
5	64QAM	12	0	20.71	20.69	20.55	21	3
5	64QAM	12	7	20.76	20.73	20.63		
5	64QAM	12	13	20.76	20.71	20.57		
5	64QAM	25	0	20.72	20.69	20.58		

Band 12 (700MHz Low Band)
Part 27F(only on channel required)

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23060	23095	23130		
Frequency (MHz)				704	707.5	711		
10	QPSK	1	0	22.94	23.08	22.91	24	0
10	QPSK	1	25	22.91	22.91	22.89		
10	QPSK	1	49	22.96	22.96	22.91		
10	QPSK	25	0	21.9	22.12	21.9	23	1
10	QPSK	25	12	22.11	22.01	22.01		
10	QPSK	25	25	22.07	22.03	21.99		
10	QPSK	50	0	22.06	22.07	21.92		
10	16QAM	1	0	22.33	22.33	22.31	23	1
10	16QAM	1	25	22.31	22.36	22.29		
10	16QAM	1	49	22.35	22.34	22.3		
10	16QAM	25	0	21.11	21.11	21.09	22	2
10	16QAM	25	12	21.33	21.25	21.2		
10	16QAM	25	25	21.25	21.26	21.23		
10	16QAM	50	0	21.22	21.16	21.11		
10	64QAM	1	0	21.36	21.38	21.34	22	2
10	64QAM	1	25	21.29	21.33	21.34		
10	64QAM	1	49	21.4	21.37	21.23		
10	64QAM	25	0	20.15	20.11	20.1	21	3
10	64QAM	25	12	20.33	20.26	20.2		
10	64QAM	25	25	20.24	20.25	20.18		
10	64QAM	50	0	20.24	20.15	20.12		
Channel				23035	23095	23155	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				701.5	707.5	713.5		
5	QPSK	1	0	22.95	22.94	22.91	24	0
5	QPSK	1	12	23	23	22.94		
5	QPSK	1	24	22.99	22.97	22.91		
5	QPSK	12	0	22.09	22	21.94	23	1
5	QPSK	12	7	22.12	22.06	21.99		
5	QPSK	12	13	22.1	22.05	22		
5	QPSK	25	0	22.08	22.03	21.93		
5	16QAM	1	0	22.31	22.25	22.27	23	1
5	16QAM	1	12	22.36	22.34	22.29		
5	16QAM	1	24	22.36	22.32	22.26		
5	16QAM	12	0	21.34	21.25	21.18	22	2
5	16QAM	12	7	21.35	21.26	21.19		
5	16QAM	12	13	21.29	21.28	21.21		
5	16QAM	25	0	21.3	21.24	21.14		
5	64QAM	1	0	21.22	21.21	21.13	22	2
5	64QAM	1	12	21.25	21.22	21.15		
5	64QAM	1	24	21.25	21.24	21.15		
5	64QAM	12	0	20.3	20.23	20.16	21	3
5	64QAM	12	7	20.33	20.25	20.17		
5	64QAM	12	13	20.29	20.29	20.19		
5	64QAM	25	0	20.32	20.23	20.17		
Channel				23025	23095	23165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				700.5	707.5	714.5		
3	QPSK	1	0	23.07	22.98	22.93	24	0
3	QPSK	1	8	23.06	23.07	22.94		
3	QPSK	1	14	23.01	23.02	22.91		
3	QPSK	8	0	22.11	22.02	22	23	1
3	QPSK	8	4	22.13	22.06	22.01		
3	QPSK	8	7	22.06	22.08	21.99		
3	QPSK	15	0	22.1	22.03	21.97		
3	16QAM	1	0	22.41	22.34	22.3	23	1
3	16QAM	1	8	22.45	22.41	22.29		
3	16QAM	1	14	22.35	22.33	22.2		
3	16QAM	8	0	21.37	21.31	21.24	22	2
3	16QAM	8	4	21.38	21.3	21.25		
3	16QAM	8	7	21.34	21.35	21.25		
3	16QAM	15	0	21.36	21.24	21.23		
3	64QAM	1	0	21.3	21.22	21.19	22	2
3	64QAM	1	8	21.34	21.32	21.22		
3	64QAM	1	14	21.26	21.26	21.15		
3	64QAM	8	0	20.33	20.26	20.24	21	3
3	64QAM	8	4	20.33	20.27	20.24		
3	64QAM	8	7	20.3	20.31	20.23		
3	64QAM	15	0	20.32	20.25	20.2		
Channel				23017	23095	23173	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				699.7	707.5	715.3		
1.4	QPSK	1	0	22.89	22.83	22.78	24	0
1.4	QPSK	1	3	22.97	22.95	22.82		
1.4	QPSK	1	5	22.93	22.87	22.76		
1.4	QPSK	3	0	22.98	22.87	22.78		
1.4	QPSK	3	1	23	22.96	22.85		
1.4	QPSK	3	3	22.95	22.93	22.79		
1.4	QPSK	6	0	22	21.92	21.86	23	1
1.4	16QAM	1	0	22.29	22.18	22.12	23	1
1.4	16QAM	1	3	22.36	22.32	22.17		
1.4	16QAM	1	5	22.26	22.26	22.15		
1.4	16QAM	3	0	22.05	21.94	21.9		
1.4	16QAM	3	1	22.08	22.06	21.94		
1.4	16QAM	3	3	22.01	22	21.87		
1.4	16QAM	6	0	21.29	21.21	21.13	22	2
1.4	64QAM	1	0	21.17	21.13	21.04	22	2
1.4	64QAM	1	3	21.2	21.22	21.08		
1.4	64QAM	1	5	21.18	21.15	21.02		
1.4	64QAM	3	0	21.09	21.01	20.93		
1.4	64QAM	3	1	21.15	21.13	21		
1.4	64QAM	3	3	21.09	21.06	20.93		
1.4	64QAM	6	0	20.21	20.13	20.08	21	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	22.95	23	22.89	24	0
10	QPSK	1	25	22.91	22.9	22.89		
10	QPSK	1	49	22.92	22.9	22.88		
10	QPSK	25	0	21.98	22.13	21.97	23	1
10	QPSK	25	12	22.12	22.02	22.01		
10	QPSK	25	25	22.11	22.07	22.03		
10	QPSK	50	0	22.08	22.1	21.96		
10	16QAM	1	0	22.38	22.34	22.34	23	1
10	16QAM	1	25	22.32	22.31	22.27		
10	16QAM	1	49	22.31	22.3	22.27		
10	16QAM	25	0	21.18	21.19	21.15	22	2
10	16QAM	25	12	21.3	21.24	21.17		
10	16QAM	25	25	21.24	21.25	21.26		
10	16QAM	50	0	21.3	21.18	21.2		
10	64QAM	1	0	21.25	21.23	21.28	22	2
10	64QAM	1	25	21.34	21.33	21.34		
10	64QAM	1	49	21.33	21.28	21.3		
10	64QAM	25	0	20.19	20.18	20.18	21	3
10	64QAM	25	12	20.31	20.22	20.22		
10	64QAM	25	25	20.24	20.25	20.21		
10	64QAM	50	0	20.29	20.17	20.18		
Channel				23755	23790	23825	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				706.5	710	713.5		
5	QPSK	1	0	22.9	22.86	22.83	24	0
5	QPSK	1	12	22.99	22.99	22.92		
5	QPSK	1	24	22.95	22.95	22.87		
5	QPSK	12	0	22	22	21.96	23	1
5	QPSK	12	7	22.08	22.01	22.01		
5	QPSK	12	13	22.06	22.03	21.97		
5	QPSK	25	0	22.08	21.99	21.94		
5	16QAM	1	0	22.2	22.14	22.18	23	1
5	16QAM	1	12	22.26	22.26	22.22		
5	16QAM	1	24	22.25	22.24	22.17		
5	16QAM	12	0	21.24	21.2	21.18	22	2
5	16QAM	12	7	21.28	21.23	21.22		
5	16QAM	12	13	21.27	21.25	21.17		
5	16QAM	25	0	21.29	21.22	21.15		
5	64QAM	1	0	21.17	21.12	21.07	22	2
5	64QAM	1	12	21.21	21.19	21.19		
5	64QAM	1	24	21.2	21.16	21.14		
5	64QAM	12	0	20.18	20.18	20.13	21	3
5	64QAM	12	7	20.3	20.21	20.2		
5	64QAM	12	13	20.26	20.24	20.16		
5	64QAM	25	0	20.26	20.21	20.13		

SPORTON LAB.

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	23.35	23.37	23.1	24	0
15	QPSK	1	37	23.23	23.23	22.93		
15	QPSK	1	74	23.2	23.07	22.97		
15	QPSK	36	0	22.05	22.2	21.84	23	1
15	QPSK	36	20	22.19	22.07	21.85		
15	QPSK	36	39	22.13	21.96	21.84		
15	QPSK	75	0	22.09	22.11	21.79		
15	16QAM	1	0	22.31	22.34	22.2	23	1
15	16QAM	1	37	22.37	22.33	22.08		
15	16QAM	1	74	22.28	22.17	22		
15	16QAM	36	0	21.27	21.24	21.06	22	2
15	16QAM	36	20	21.38	21.29	21.05		
15	16QAM	36	39	21.3	21.2	20.94		
15	16QAM	75	0	21.33	21.23	21.01		
15	64QAM	1	0	21.38	21.21	21.08	22	2
15	64QAM	1	37	21.23	21.22	20.93		
15	64QAM	1	74	21.15	21.06	20.89		
15	64QAM	36	0	20.26	20.25	20.03	21	3
15	64QAM	36	20	20.39	20.31	20.05		
15	64QAM	36	39	20.29	20.18	19.96		
15	64QAM	75	0	20.33	20.24	20.02		
Channel				26740	26865	26990	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				819	831.5	844		
10	QPSK	1	0	23.29	23.32	23.08	24	0
10	QPSK	1	25	23.32	23.28	22.96		
10	QPSK	1	49	23.34	23.21	22.97		
10	QPSK	25	0	22.24	22.09	21.82	23	1
10	QPSK	25	12	22.31	22.18	21.91		
10	QPSK	25	25	22.24	22.07	21.81		
10	QPSK	50	0	22.25	22.06	21.84		
10	16QAM	1	0	22.29	22.09	22.23	23	1
10	16QAM	1	25	22.13	22.12	22.2		
10	16QAM	1	49	22.2	22.08	22.14		
10	16QAM	25	0	21.09	20.94	21.06	22	2
10	16QAM	25	12	21.17	21.06	21.14		
10	16QAM	25	25	21.08	20.93	21.05		
10	16QAM	50	0	21.1	20.95	21.02		
10	64QAM	1	0	21.3	21.16	21.22	22	2
10	64QAM	1	25	21.15	21.11	21.21		
10	64QAM	1	49	21.11	21	21.17		
10	64QAM	25	0	20.08	19.93	20.04	21	3
10	64QAM	25	12	20.19	20.04	20.13		
10	64QAM	25	25	20.09	19.91	20.08		
10	64QAM	50	0	20.08	19.95	19.97		
Channel				26715	26865	27015	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				816.5	831.5	846.5		
5	QPSK	1	0	23.19	23.3	23.04	24	0
5	QPSK	1	12	23.31	23.35	23		
5	QPSK	1	24	23.33	23.22	22.97		
5	QPSK	12	0	22.35	22.17	21.88	23	1
5	QPSK	12	7	22.38	22.22	21.98		
5	QPSK	12	13	22.32	22.15	21.89		
5	QPSK	25	0	22.35	22.16	21.91		
5	16QAM	1	0	22.16	22.08	22.2	23	1
5	16QAM	1	12	22.26	22.12	22.14		
5	16QAM	1	24	22.12	22.01	22.11		
5	16QAM	12	0	21.21	21.02	21.15	22	2
5	16QAM	12	7	21.23	21.06	21.18		
5	16QAM	12	13	21.21	21.02	21.08		
5	16QAM	25	0	21.21	21.03	21.09		
5	64QAM	1	0	21.07	20.97	21.12	22	2
5	64QAM	1	12	21.14	21.04	21.01		
5	64QAM	1	24	21.03	20.9	21.02		
5	64QAM	12	0	20.16	20.02	20.17	21	3
5	64QAM	12	7	20.24	20.07	20.15		
5	64QAM	12	13	20.15	20.01	20.1		
5	64QAM	25	0	20.17	20.02	20.09		
Channel				26705	26865	27025	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				815.5	831.5	847.5		
3	QPSK	1	0	23.29	23.3	23.08	24	0
3	QPSK	1	8	23.29	23.18	23.12		
3	QPSK	1	14	23.09	23.25	23.05		
3	QPSK	8	0	22.37	22.16	21.97	23	1
3	QPSK	8	4	22.41	22.22	22.01		
3	QPSK	8	7	22.36	22.17	21.92		
3	QPSK	15	0	22.38	22.19	21.98		
3	16QAM	1	0	22.18	22.02	22.13	23	1
3	16QAM	1	8	22.24	22.17	22.17		
3	16QAM	1	14	22.18	22.03	22.1		
3	16QAM	8	0	21.26	21.08	21.25	22	2
3	16QAM	8	4	21.33	21.12	21.21		
3	16QAM	8	7	21.26	21.08	21.2		
3	16QAM	15	0	21.24	21.03	21.12		
3	64QAM	1	0	21.1	20.93	21.03	22	2
3	64QAM	1	8	21.18	21.06	21.1		
3	64QAM	1	14	21.08	20.9	21.07		
3	64QAM	8	0	20.22	20.03	20.16	21	3
3	64QAM	8	4	20.28	20.05	20.2		
3	64QAM	8	7	20.23	20.02	20.13		
3	64QAM	15	0	20.22	20.01	20.08		
Channel				26697	26865	27033	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				814.7	831.5	848.3		
1.4	QPSK	1	0	23.33	23.14	23.01	24	0
1.4	QPSK	1	3	23.18	23.3	23.09		
1.4	QPSK	1	5	23.32	23.15	23		
1.4	QPSK	3	0	23.36	23.2	22.99		
1.4	QPSK	3	1	23.08	23.29	23.02		
1.4	QPSK	3	3	23.03	23.2	23		
1.4	QPSK	6	0	21.94	22.09	21.86	23	1
1.4	16QAM	1	0	22.1	22.27	22.06	23	1
1.4	16QAM	1	3	22.2	22.38	22.1		
1.4	16QAM	1	5	22.09	22.27	22.05		
1.4	16QAM	3	0	21.96	22.08	21.98		
1.4	16QAM	3	1	21.99	22.21	22.04		
1.4	16QAM	3	3	21.92	22.07	21.95		
1.4	16QAM	6	0	21.19	21.34	21.1	22	2
1.4	64QAM	1	0	21.01	21.22	20.97	22	2
1.4	64QAM	1	3	21.1	21.32	20.99		
1.4	64QAM	1	5	21.04	21.2	21.11		
1.4	64QAM	3	0	20.94	21.12	20.9		
1.4	64QAM	3	1	21.01	21.24	20.99		
1.4	64QAM	3	3	20.95	21.12	20.91		
1.4	64QAM	6	0	20.12	20.29	20.06	21	3

Band 66

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				132072	132322	132572		
Frequency (MHz)				1720	1745	1770		
20	QPSK	1	0	23.1	23.27	23.02	24	0
20	QPSK	1	49	23.12	23.08	22.83		
20	QPSK	1	99	23.15	22.97	23		
20	QPSK	50	0	22.03	22.1	21.83	23	1
20	QPSK	50	24	22.09	21.96	21.78		
20	QPSK	50	50	22.07	21.87	21.61		
20	QPSK	100	0	22.01	22.02	21.7		
20	16QAM	1	0	22.33	22.27	22.14	23	1
20	16QAM	1	49	22.31	22.23	21.99		
20	16QAM	1	99	22.25	22.16	21.89		
20	16QAM	50	0	21.25	21.17	21.04	22	2
20	16QAM	50	24	21.27	21.15	21.01		
20	16QAM	50	50	21.25	21.09	20.79		
20	16QAM	100	0	21.24	21.05	20.88		
20	64QAM	1	0	21.15	21.11	21.15	22	2
20	64QAM	1	49	21.21	21.24	21.03		
20	64QAM	1	99	21.31	21.12	20.87		
20	64QAM	50	0	20.24	20.19	20.04	21	3
20	64QAM	50	24	20.33	20.19	20.02		
20	64QAM	50	50	20.25	20.1	19.84		
20	64QAM	100	0	20.26	20.06	19.92		
Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	QPSK	1	0	23.05	22.95	22.87	24	0
15	QPSK	1	37	23.08	22.9	22.81		
15	QPSK	1	74	22.93	22.71	22.68		
15	QPSK	36	0	22.15	21.94	21.91	23	1
15	QPSK	36	20	22.2	21.92	21.82		
15	QPSK	36	39	22.07	21.76	21.73		
15	QPSK	75	0	22.13	21.75	21.67		
15	16QAM	1	0	22.03	22.18	22.12	23	1
15	16QAM	1	37	22.06	22.3	21.97		
15	16QAM	1	74	21.93	22.04	21.92		
15	16QAM	36	0	21.05	21.05	21.1	22	2
15	16QAM	36	20	21.04	21.04	21.06		
15	16QAM	36	39	20.96	20.91	20.95		
15	16QAM	75	0	21	20.97	20.86		
15	64QAM	1	0	20.94	20.95	20.84	22	2
15	64QAM	1	37	20.98	20.95	20.96		
15	64QAM	1	74	20.83	20.93	20.83		
15	64QAM	36	0	20.01	20.11	20.09	21	3
15	64QAM	36	20	20.05	20.03	19.99		
15	64QAM	36	39	19.96	19.96	19.9		
15	64QAM	75	0	19.99	19.98	19.92		
Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	QPSK	1	0	23.21	23.24	23	24	0
10	QPSK	1	25	23.24	23.2	22.88		
10	QPSK	1	49	23.26	23.13	22.89		
10	QPSK	25	0	22.16	22.01	21.74	23	1
10	QPSK	25	12	22.23	22.1	21.83		
10	QPSK	25	25	22.16	21.99	21.73		
10	QPSK	50	0	22.17	21.98	21.76		
10	16QAM	1	0	22.21	22.01	22.15	23	1
10	16QAM	1	25	22.05	22.04	22.12		
10	16QAM	1	49	22.12	22	22.06		
10	16QAM	25	0	21.01	20.86	20.98	22	2
10	16QAM	25	12	21.09	20.98	21.06		
10	16QAM	25	25	21	20.85	20.97		
10	16QAM	50	0	21.02	20.87	20.94		
10	64QAM	1	0	21.22	21.08	21.14	22	2
10	64QAM	1	25	21.07	21.03	21.13		
10	64QAM	1	49	21.03	20.92	21.09		
10	64QAM	25	0	20	19.85	19.96	21	3
10	64QAM	25	12	20.11	19.96	20.05		
10	64QAM	25	25	20.01	19.83	20		
10	64QAM	50	0	20	19.87	19.89		
Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	23.05	23.11	23.19	24	0
5	QPSK	1	12	23.09	22.87	23.12		
5	QPSK	1	24	22.9	23.13	23.02		
5	QPSK	12	0	22.13	22.32	22.07	23	1
5	QPSK	12	7	22.11	22.32	22.02		
5	QPSK	12	13	22.03	22.26	21.99		
5	QPSK	25	0	22.09	22.27	22.11		
5	16QAM	1	0	22.06	22.21	22.11	23	1
5	16QAM	1	12	22.08	22.33	22.15		
5	16QAM	1	24	21.9	22.13	21.95		
5	16QAM	12	0	21.05	21.25	21.06	22	2
5	16QAM	12	7	21.03	21.2	21.06		
5	16QAM	12	13	20.98	21.14	20.96		
5	16QAM	25	0	21	21.2	20.86		
5	64QAM	1	0	20.98	21.16	21.07	22	2
5	64QAM	1	12	21.05	21.27	21.07		
5	64QAM	1	24	20.85	21.04	20.92		
5	64QAM	12	0	20.03	20.2	20.05	21	3
5	64QAM	12	7	20.02	20.21	20.05		
5	64QAM	12	13	19.93	20.15	19.95		
5	64QAM	25	0	19.96	20.15	19.87		
Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	22.84	22.56	22.53	24	0
3	QPSK	1	8	22.92	22.61	22.56		
3	QPSK	1	14	22.72	22.51	22.44		
3	QPSK	8	0	22.04	21.78	21.63	23	1
3	QPSK	8	4	22	21.81	21.65		
3	QPSK	8	7	21.91	21.6	21.57		
3	QPSK	15	0	21.92	21.75	21.49		
3	16QAM	1	0	22.22	21.85	21.76	23	1
3	16QAM	1	8	22.24	21.97	21.78		
3	16QAM	1	14	22.01	21.82	21.74		
3	16QAM	8	0	21.25	20.95	20.77	22	2
3	16QAM	8	4	21.17	21	20.75		
3	16QAM	8	7	21.08	20.78	20.75		
3	16QAM	15	0	21.12	20.94	20.7		
3	64QAM	1	0	21.01	20.67	20.65	22	2
3	64QAM	1	8	21.09	20.79	20.68		
3	64QAM	1	14	20.76	20.68	20.67		
3	64QAM	8	0	20.27	19.96	19.84	21	3
3	64QAM	8	4	20.2	19.99	19.83		
3	64QAM	8	7	20.1	19.81	19.77		
3	64QAM	15	0	20.14	19.93	19.7		
Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	22.85	22.66	22.53	24	0
1.4	QPSK	1	3	22.7	22.82	22.61		
1.4	QPSK	1	5	22.84	22.67	22.52		
1.4	QPSK	3	0	22.88	22.72	22.51		
1.4	QPSK	3	1	22.6	22.81	22.54		
1.4	QPSK	3	3	22.55	22.72	22.52		
1.4	QPSK	6	0	21.46	21.61	21.38	23	1
1.4	16QAM	1	0	21.62	21.79	21.58	23	1
1.4	16QAM	1	3	21.72	21.9	21.62		
1.4	16QAM	1	5	21.61	21.79	21.57		
1.4	16QAM	3	0	21.48	21.6	21.5		
1.4	16QAM	3	1	21.51	21.73	21.56		
1.4	16QAM	3	3	21.44	21.59	21.47		
1.4	16QAM	6	0	20.71	20.86	20.62	22	2
1.4	64QAM	1	0	20.53	20.74	20.49	22	2
1.4	64QAM	1	3	20.62	20.84	20.51		
1.4	64QAM	1	5	20.56	20.72	20.63		
1.4	64QAM	3	0	20.46	20.64	20.42		
1.4	64QAM	3	1	20.53	20.76	20.51		
1.4	64QAM	3	3	20.47	20.64	20.43		
1.4	64QAM	6	0	19.64	19.81	19.58	21	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	23.28	23.33	23.28	24	0
20	QPSK	1	49	23.14	23.28	23.31		
20	QPSK	1	99	23.13	23.32	23.2		
20	QPSK	50	0	22.26	22.37	22.19	23	1
20	QPSK	50	24	22.2	22.36	22.32		
20	QPSK	50	50	22.32	22.29	22.32		
20	QPSK	100	0	22.25	22.27	22.22		
20	16QAM	1	0	22.09	22.06	22.03	23	1
20	16QAM	1	49	22.06	22.04	22.03		
20	16QAM	1	99	22.1	22.08	22.11		
20	16QAM	50	0	21.15	21.12	21.06	22	2
20	16QAM	50	24	21.25	21.25	21.17		
20	16QAM	50	50	21.19	21.17	21.17		
20	16QAM	100	0	21.13	21.13	21.07		
20	64QAM	1	0	21.08	21.17	21.18	22	2
20	64QAM	1	49	21.04	21.05	21.14		
20	64QAM	1	99	21.06	21.13	21.17		
20	64QAM	50	0	20.29	20.27	20.2	21	3
20	64QAM	50	24	20.38	20.39	20.34		
20	64QAM	50	50	20.33	20.33	20.33		
20	64QAM	100	0	20.4	20.38	20.34		
Channel				37825	38000	38175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2577.5	2595	2612.5		
15	QPSK	1	0	23.22	23.15	23.21	24	0
15	QPSK	1	37	23.26	23.2	23.25		
15	QPSK	1	74	23.19	23.25	23.32		
15	QPSK	36	0	22.28	22.28	22.2	23	1
15	QPSK	36	20	22.36	22.36	22.39		
15	QPSK	36	39	22.31	22.29	22.32		
15	QPSK	75	0	22.29	22.29	22.32		
15	16QAM	1	0	22.41	22.38	22.34	23	1
15	16QAM	1	37	22.34	22.33	22.39		
15	16QAM	1	74	22.1	22.08	22.09		
15	16QAM	36	0	21.08	21.06	21.02	22	2
15	16QAM	36	20	21.18	21.17	21.21		
15	16QAM	36	39	21.13	21.11	21.12		
15	16QAM	75	0	21.16	21.14	21.2		
15	64QAM	1	0	21.04	21.03	21.07	22	2
15	64QAM	1	37	20.98	21.08	21.12		
15	64QAM	1	74	21.01	21.07	21.1		
15	64QAM	36	0	20.36	20.32	20.28	21	3
15	64QAM	36	20	20.2	20.02	20.19		
15	64QAM	36	39	20.39	20.35	20.38		
15	64QAM	75	0	20.37	20.37	20.39		
Channel				37800	38000	38200	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2575	2595	2615		
10	QPSK	1	0	22.95	23.23	23.21	24	0
10	QPSK	1	25	23.13	23.2	23.22		
10	QPSK	1	49	23.01	23.28	22.98		
10	QPSK	25	0	22.24	22.22	22.15	23	1
10	QPSK	25	12	22.36	22.37	22.32		
10	QPSK	25	25	22.29	22.26	22.07		
10	QPSK	50	0	22.26	22.28	22.2		
10	16QAM	1	0	22.1	22.33	22.38	23	1
10	16QAM	1	25	22.37	22.36	22.42		
10	16QAM	1	49	22.11	22.4	22.07		
10	16QAM	25	0	21.11	21.07	21.06	22	2
10	16QAM	25	12	21.24	21.2	21.16		
10	16QAM	25	25	21.13	21.13	21.17		
10	16QAM	50	0	21.15	21.14	21.1		
10	64QAM	1	0	20.87	21.16	21.17	22	2
10	64QAM	1	25	21.09	21.09	21.12		
10	64QAM	1	49	20.84	21.16	21.22		
10	64QAM	25	0	20.27	20.29	20.25	21	3
10	64QAM	25	12	20.2	20.19	20.38		
10	64QAM	25	25	20.36	20.34	20.18		
10	64QAM	50	0	20.33	20.31	20.26		
Channel				37775	38000	38225	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2572.5	2595	2617.5		
5	QPSK	1	0	23.2	23.13	23.18	24	0
5	QPSK	1	12	23.24	23.2	23.25		
5	QPSK	1	24	23.19	23.18	23.23		
5	QPSK	12	0	22.33	22.27	22.31	23	1
5	QPSK	12	7	22.38	22.34	22.4		
5	QPSK	12	13	22.36	22.32	22.35		
5	QPSK	25	0	22.33	22.31	22.33		
5	16QAM	1	0	21.93	21.92	21.99	23	1
5	16QAM	1	12	22.11	22.05	22.16		
5	16QAM	1	24	22.04	22.01	22.04		
5	16QAM	12	0	21.15	21.12	21.15	22	2
5	16QAM	12	7	21.2	21.18	21.22		
5	16QAM	12	13	21.19	21.14	21.2		
5	16QAM	25	0	21.22	21.16	21.25		
5	64QAM	1	0	20.97	20.95	20.98	22	2
5	64QAM	1	12	21.03	20.97	21		
5	64QAM	1	24	21.01	20.99	21.01		
5	64QAM	12	0	20.37	20.32	20.35	21	3
5	64QAM	12	7	20.41	20.4	20.18		
5	64QAM	12	13	20.38	20.35	20.41		
5	64QAM	25	0	20.38	20.34	20.38		

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	23.40	23.33	23.43	23.34	23.25	24	0
20	QPSK	1	49	23.13	23	23.04	22.95	23.12		
20	QPSK	1	99	23.14	23.01	23.05	23.16	23.04		
20	QPSK	50	0	22.22	22.08	22.42	22.14	22.36	23	1
20	QPSK	50	24	22.26	22.05	22.15	22.28	22.41		
20	QPSK	50	50	22.17	22.08	22.11	22.16	22.12		
20	QPSK	100	0	22.15	21.98	22.29	22.19	22.16		
20	16QAM	1	0	21.96	21.81	21.53	21.57	21.5	23	1
20	16QAM	1	49	21.91	21.77	21.8	21.92	21.86		
20	16QAM	1	99	21.89	21.76	21.57	21.54	21.78		
20	16QAM	50	0	21.45	21.29	21.15	21.34	21.3	22	2
20	16QAM	50	24	21.47	21.34	21.37	21.27	21.47		
20	16QAM	50	50	21.47	21.28	21.33	21.4	21.4		
20	16QAM	100	0	21.38	21.21	21.26	21.4	21.38		
20	64QAM	1	0	21.08	20.87	20.76	20.74	20.72	22	2
20	64QAM	1	49	21.01	20.83	21.11	21.22	20.86		
20	64QAM	1	99	20.94	20.82	20.73	20.79	20.76		
20	64QAM	50	0	20.37	20.2	20.11	20.27	20.27	21	3
20	64QAM	50	24	20.42	20.21	20.34	20.42	20.41		
20	64QAM	50	50	20.36	20.21	20.28	20.33	20.33		
20	64QAM	100	0	20.42	20.24	20.3	20.42	20.43		
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	23.42	23.05	23.09	23.37	23.25	24	0
15	QPSK	1	37	23.13	23.25	23	23.21	23.19		
15	QPSK	1	74	23.15	23.16	22.95	23.04	23.15		
15	QPSK	36	0	22.27	22	21.96	22.15	22.19	23	1
15	QPSK	36	20	21.91	22.06	22.17	22.23	22.23		
15	QPSK	36	39	22.25	21.98	22.12	22.24	22.22		
15	QPSK	75	0	21.76	21.99	22.12	22.15	22.26		
15	16QAM	1	0	22.32	21.9	21.9	22.08	22.08	23	1
15	16QAM	1	37	22.07	22.09	22.08	22.21	22.21		
15	16QAM	1	74	22.01	21.91	22.04	22.08	22.26		
15	16QAM	36	0	21.09	21.17	21.13	21.31	21.36	22	2
15	16QAM	36	20	21.42	21.24	21.31	21.4	21.38		
15	16QAM	36	39	21.26	21.17	21.31	21.39	21.39		
15	16QAM	75	0	21.36	21.22	21.32	21.37	21.47		
15	64QAM	1	0	21.4	21.01	20.96	21.44	21.39	22	2
15	64QAM	1	37	21.3	21.18	21.38	21.33	21.25		
15	64QAM	1	74	21.35	21.02	21.23	21.34	21.23		
15	64QAM	36	0	20.45	20.24	20.17	20.36	20.39	21	3
15	64QAM	36	20	20.46	20.28	20.36	20.43	20.42		
15	64QAM	36	39	20.35	20.21	20.33	20.43	20.44		
15	64QAM	75	0	20.38	20.23	20.3	20.39	20.46		
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	23.16	22.75	22.78	22.98	22.95	24	0
10	QPSK	1	25	23.06	22.96	23	23.2	23.12		
10	QPSK	1	49	23.23	22.76	22.85	23.02	22.97		
10	QPSK	25	0	22.27	22.06	22.13	22.19	22.25	23	1
10	QPSK	25	12	22.3	22.15	22.2	22.26	22.32		
10	QPSK	25	25	22.22	22.04	22.12	22.26	22.24		
10	QPSK	50	0	22.21	22.02	22.09	22.16	22.22		
10	16QAM	1	0	22.36	21.88	21.95	22.09	22.14	23	1
10	16QAM	1	25	22.09	22.15	22.14	22.34	22.33		
10	16QAM	1	49	22	21.9	21.92	22.07	22.09		
10	16QAM	25	0	21.47	21.28	21.29	21.39	21.48	22	2
10	16QAM	25	12	21.27	21.35	21.44	21.27	21.36		
10	16QAM	25	25	21.45	21.26	21.29	21.49	21.42		
10	16QAM	50	0	21.2	21.3	21.37	21.41	21.46		
10	64QAM	1	0	21.09	21.12	21.15	21.28	21.3	22	2
10	64QAM	1	25	21.15	21.34	21.35	21.16	21.25		
10	64QAM	1	49	21.45	21.13	21.24	21.48	21.33		
10	64QAM	25	0	20.45	20.28	20.28	20.37	20.43	21	3
10	64QAM	25	12	20.49	20.38	20.38	20.47	20.27		
10	64QAM	25	25	20.48	20.24	20.31	20.45	20.43		
10	64QAM	50	0	20.27	20.25	20.31	20.36	20.44		
Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2545.8	2593	2640.3	2687.5		
5	QPSK	1	0	23.19	23.06	23.02	23.22	23.23	24	0
5	QPSK	1	12	23.22	23.06	23.1	23.26	23.23		
5	QPSK	1	24	23.17	23.01	23.09	23.29	23.23		
5	QPSK	12	0	22.29	22.13	22.18	22.29	22.34	23	1
5	QPSK	12	7	22.3	22.16	22.23	22.33	22.35		
5	QPSK	12	13	22.27	22.15	22.18	22.36	22.3		
5	QPSK	25	0	22.27	22.16	22.17	22.3	22.31		
5	16QAM	1	0	22.34	22.22	22.09	22.21	22.34	23	1
5	16QAM	1	12	22.34	22.18	22.15	22.28	22.28		
5	16QAM	1	24	22.33	22.13	22.11	22.37	22.27		
5	16QAM	12	0	21.17	21.02	21.09	21.19	21.19	22	2
5	16QAM	12	7	21.19	21.08	21.11	21.18	21.25		
5	16QAM	12	13	21.13	21.05	21.06	21.23	21.22		
5	16QAM	25	0	21.18	21.06	21.07	21.21	21.21		
5	64QAM	1	0	21.12	21.04	20.99	21.24	21.19	22	2
5	64QAM	1	12	21.06	21.14	21.13	21.32	21.34		
5	64QAM	1	24	21.1	21.06	21.04	21.28	21.28		
5	64QAM	12	0	20.14	20.02	20.09	20.16	20.21	21	3
5	64QAM	12	7	20.18	20.07	20.12	20.23	20.25		
5	64QAM	12	13	20.14	20	20.1	20.24	20.18		
5	64QAM	25	0	20.11	20.03	20.08	20.2	20.21		

Reduced Power Mode for Sensor 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	30.90	30.91	30.92	31.00	21.90	21.91	21.92	22.00
GPRS 1 Tx slot	30.88	30.90	30.85	31.00	21.88	21.90	21.85	22.00
GPRS 2 Tx slots	29.99	29.84	29.93	30.50	23.99	23.84	23.93	24.50
GPRS 3 Tx slots	28.12	28.35	28.34	29.00	23.86	24.09	24.08	24.74
GPRS 4 Tx slots	26.54	26.71	26.70	27.50	23.54	23.71	23.70	24.50
EDGE 1 Tx slot	25.40	25.41	24.97	25.50	16.40	16.41	15.97	16.50
EDGE 2 Tx slots	23.92	23.96	23.87	25.00	17.92	17.96	17.87	19.00
EDGE 3 Tx slots	22.12	22.21	22.10	23.00	17.86	17.95	17.84	18.74
EDGE 4 Tx slots	20.67	20.92	20.84	22.00	17.67	17.92	17.84	19.00

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	23.41	23.25	22.52	23.50	14.41	14.25	13.52	14.50
GPRS 1 Tx slot	23.40	23.22	22.51	23.50	14.40	14.22	13.51	14.50
GPRS 2 Tx slots	22.80	21.51	21.67	23.00	16.80	15.51	15.67	17.00
GPRS 3 Tx slots	21.22	21.28	20.30	21.50	16.96	17.02	16.04	17.24
GPRS 4 Tx slots	18.98	18.38	18.02	19.50	15.98	15.38	15.02	16.50
EDGE 1 Tx slot	19.54	19.22	18.51	20.00	10.54	10.22	9.51	11.00
EDGE 2 Tx slots	18.01	17.84	17.06	18.50	12.01	11.84	11.06	12.50
EDGE 3 Tx slots	15.37	16.19	15.48	16.50	11.11	11.93	11.22	12.24
EDGE 4 Tx slots	15.32	14.77	14.48	15.50	12.32	11.77	11.48	12.50

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	16.68	16.70	16.30	17.00	16.83	17.11	16.64	17.50	22.79	22.86	22.41	23.00
3GPP Rel 99	RMC 12.2Kbps	16.69	16.71	16.31	17.00	16.84	17.12	16.65	17.50	22.80	22.87	22.43	23.00
3GPP Rel 6	HSDPA Subtest-1	15.62	15.60	15.15	16.50	15.81	16.15	15.65	17.00	22.44	22.46	22.14	22.50
3GPP Rel 6	HSDPA Subtest-2	15.60	15.59	15.13	16.50	15.85	16.18	15.71	17.00	22.47	22.45	22.11	22.50
3GPP Rel 6	HSDPA Subtest-3	15.04	15.01	14.73	16.00	15.33	15.67	15.21	16.50	21.94	21.96	21.63	22.00
3GPP Rel 6	HSDPA Subtest-4	15.07	15.11	14.66	16.00	15.28	15.72	15.22	16.50	21.93	21.92	21.63	22.00
3GPP Rel 8	DC-HSDPA Subtest-1	15.65	15.62	15.19	16.50	15.85	16.17	15.75	17.00	22.41	22.41	22.11	22.50
3GPP Rel 8	DC-HSDPA Subtest-2	15.62	15.64	15.17	16.50	15.82	16.16	15.70	17.00	22.44	22.39	22.12	22.50
3GPP Rel 8	DC-HSDPA Subtest-3	15.14	15.08	14.82	16.00	15.35	15.69	15.25	16.50	21.91	21.91	21.61	22.00
3GPP Rel 8	DC-HSDPA Subtest-4	15.15	15.18	14.78	16.00	15.35	15.78	15.29	16.50	21.95	21.96	21.86	22.00
3GPP Rel 6	HSUPA Subtest-1	15.61	15.57	15.19	16.50	15.87	16.16	15.67	17.00	22.44	22.47	22.12	22.50
3GPP Rel 6	HSUPA Subtest-2	13.56	13.65	13.15	14.50	13.92	14.16	13.80	15.00	20.48	20.44	20.09	20.50
3GPP Rel 6	HSUPA Subtest-3	14.57	14.58	14.18	15.50	14.85	15.18	14.70	16.00	21.44	21.47	21.10	21.50
3GPP Rel 6	HSUPA Subtest-4	13.62	13.62	13.21	14.50	13.83	14.16	13.69	15.00	20.44	20.48	20.08	20.50
3GPP Rel 6	HSUPA Subtest-5	15.60	15.50	15.11	16.50	15.90	16.20	15.70	17.00	22.50	22.50	22.10	22.50

Band	CDMA BC1			Tune-up Limit (dBm)
TX Channel	25	600	1175	
Frequency (MHz)	1851.25	1880	1908.75	
RC1 SO55	18.18	18.22	18.15	18.50
RC3 SO55	18.22	18.25	18.13	18.50
RC3 SO32 (F+SCH)	18.11	18.16	18.13	18.50
RC3 SO32 (+SCH)	18.18	18.20	18.17	18.50
RTAP 153.6Kbps	18.11	18.22	18.13	18.50
RETAP 4096Bits	18.19	18.17	18.19	18.50

SPORTON LAB.

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)				1850	1880	1900		
20	QPSK	1	0	16.55	16.56	16.28	17.5	0
20	QPSK	1	49	16.35	16.53	16.30		
20	QPSK	1	99	16.40	16.27	16.12		
20	QPSK	50	0	16.48	16.55	16.48	17.5	0
20	QPSK	50	24	16.54	16.40	16.45		
20	QPSK	50	50	16.54	16.47	16.24		
20	QPSK	100	0	16.52	16.53	16.40		
20	16QAM	1	0	16.47	16.22	16.43	17.5	0
20	16QAM	1	49	16.28	16.41	16.17		
20	16QAM	1	99	16.25	16.18	15.99		
20	16QAM	50	0	16.00	16.06	15.99	17.5	0
20	16QAM	50	24	16.17	16.04	15.96		
20	16QAM	50	50	16.03	16.01	15.68		
20	16QAM	100	0	16.03	16.00	15.83		
20	64QAM	1	0	16.35	16.10	16.37	17.5	0
20	64QAM	1	49	16.09	16.27	15.93		
20	64QAM	1	99	15.96	16.07	15.91		
20	64QAM	50	0	15.98	16.04	15.98	17.5	0
20	64QAM	50	24	16.11	16.01	15.91		
20	64QAM	50	50	16.09	15.97	15.68		
20	64QAM	100	0	16.11	16.02	15.79		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	16.20	16.29	16.13	17.5	0
15	QPSK	1	37	16.28	16.29	16.16		
15	QPSK	1	74	16.09	16.22	15.82		
15	QPSK	36	0	16.39	16.31	16.15	17.5	0
15	QPSK	36	20	16.49	16.38	16.15		
15	QPSK	36	39	16.34	16.30	16.03		
15	QPSK	75	0	16.44	16.33	16.08		
15	16QAM	1	0	16.33	16.21	16.28	17.5	0
15	16QAM	1	37	16.30	16.27	15.97		
15	16QAM	1	74	15.99	16.14	15.89		
15	16QAM	36	0	15.99	15.95	15.78	17.5	0
15	16QAM	36	20	16.15	16.02	15.86		
15	16QAM	36	39	16.10	16.02	15.73		
15	16QAM	75	0	16.17	16.04	15.75		
15	64QAM	1	0	16.24	16.03	15.91	17.5	0
15	64QAM	1	37	16.16	15.94	15.98		
15	64QAM	1	74	16.10	15.95	16.37		
15	64QAM	36	0	16.03	15.95	16.04	17.5	0
15	64QAM	36	20	15.98	15.96	16.00		
15	64QAM	36	39	15.96	16.01	16.07		
15	64QAM	75	0	16.04	16.11	16.09		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	16.26	16.14	16.13	17.5	0
10	QPSK	1	25	16.24	16.40	16.17		
10	QPSK	1	49	15.96	15.95	15.93		
10	QPSK	25	0	16.39	16.31	16.10	17.5	0
10	QPSK	25	12	16.51	16.45	16.09		
10	QPSK	25	25	16.30	16.29	16.05		
10	QPSK	50	0	16.37	16.30	16.07		
10	16QAM	1	0	16.16	15.94	16.29	17.5	0
10	16QAM	1	25	16.30	16.35	16.11		
10	16QAM	1	49	15.95	15.98	15.95		
10	16QAM	25	0	16.11	16.05	15.72	17.5	0
10	16QAM	25	12	16.14	16.06	15.76		
10	16QAM	25	25	15.96	15.92	15.66		
10	16QAM	50	0	16.06	15.97	15.75		
10	64QAM	1	0	16.10	15.96	16.22	17.5	0
10	64QAM	1	25	16.32	16.44	15.99		
10	64QAM	1	49	16.07	15.98	15.96		
10	64QAM	25	0	16.16	15.98	15.77	17.5	0
10	64QAM	25	12	16.22	16.09	15.99		
10	64QAM	25	25	16.04	16.01	15.78		
10	64QAM	50	0	15.89	16.02	15.71		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	16.39	16.31	16.14	17.5	0
5	QPSK	1	12	16.53	16.50	16.28		
5	QPSK	1	24	16.37	16.29	16.11		
5	QPSK	12	0	16.55	16.45	16.25	17.5	0
5	QPSK	12	7	16.53	16.47	16.28		
5	QPSK	12	13	16.51	16.41	16.16		
5	QPSK	25	0	16.47	16.42	16.21		
5	16QAM	1	0	16.50	16.33	16.21	17.5	0
5	16QAM	1	12	16.43	16.42	16.22		
5	16QAM	1	24	16.34	16.27	16.05		
5	16QAM	12	0	16.29	16.22	16.03	17.5	0
5	16QAM	12	7	16.27	16.24	15.99		
5	16QAM	12	13	16.21	16.12	15.88		
5	16QAM	25	0	16.22	16.16	15.92		
5	64QAM	1	0	16.45	16.15	16.12	17.5	0
5	64QAM	1	12	16.44	16.09	15.99		
5	64QAM	1	24	16.30	16.11	16.02		
5	64QAM	12	0	16.32	16.20	16.03	17.5	0
5	64QAM	12	7	16.24	16.24	16.07		
5	64QAM	12	13	16.23	16.22	15.94		
5	64QAM	25	0	16.20	16.10	15.99		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	16.43	16.28	16.10	17.5	0
3	QPSK	1	8	16.38	16.41	16.10		
3	QPSK	1	14	16.26	16.17	15.95		
3	QPSK	8	0	16.52	16.41	16.20	17.5	0
3	QPSK	8	4	16.48	16.43	16.16		
3	QPSK	8	7	16.45	16.32	16.08		
3	QPSK	15	0	16.50	16.37	16.15		
3	16QAM	1	0	16.51	16.31	16.12	17.5	0
3	16QAM	1	8	16.43	16.38	16.18		
3	16QAM	1	14	16.34	16.18	16.03		
3	16QAM	8	0	16.27	16.15	15.96	17.5	0
3	16QAM	8	4	16.22	16.16	15.95		
3	16QAM	8	7	16.17	16.06	15.79		
3	16QAM	15	0	16.14	16.10	15.91		
3	64QAM	1	0	16.40	16.15	16.09	17.5	0
3	64QAM	1	8	16.25	16.40	16.11		
3	64QAM	1	14	16.14	16.21	16.03		
3	64QAM	8	0	16.29	16.16	15.96	17.5	0
3	64QAM	8	4	16.27	16.15	15.93		
3	64QAM	8	7	16.17	16.09	15.85		
3	64QAM	15	0	16.21	16.03	15.88		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	16.35	16.23	16.02	17.5	0
1.4	QPSK	1	3	16.41	16.30	15.92		
1.4	QPSK	1	5	16.22	16.14	15.91		
1.4	QPSK	3	0	16.39	16.25	16.03		
1.4	QPSK	3	1	16.33	16.29	16.00		
1.4	QPSK	3	3	16.32	16.17	15.91		
1.4	QPSK	6	0	16.41	16.31	16.05	17.5	0
1.4	16QAM	1	0	16.43	16.25	16.07	17.5	0
1.4	16QAM	1	3	16.35	16.26	16.00		
1.4	16QAM	1	5	16.36	16.07	15.98		
1.4	16QAM	3	0	16.15	16.00	15.81		
1.4	16QAM	3	1	16.19	16.03	15.79		
1.4	16QAM	3	3	16.06	15.98	15.73		
1.4	16QAM	6	0	16.22	16.03	15.78	17.5	0
1.4	64QAM	1	0	16.39	16.14	16.00	17.5	0
1.4	64QAM	1	3	16.36	16.29	16.07		
1.4	64QAM	1	5	16.23	16.08	15.99		
1.4	64QAM	3	0	16.27	16.05	15.79		
1.4	64QAM	3	1	16.20	16.17	16.04		
1.4	64QAM	3	3	16.03	16.01	15.91		
1.4	64QAM	6	0	16.08	15.89	15.59	17.5	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	16.50	16.69	16.33	17.5	0
20	QPSK	1	49	16.63	16.30	16.32		
20	QPSK	1	99	16.50	16.35	16.30		
20	QPSK	50	0	16.28	16.36	15.86	17.5	0
20	QPSK	50	24	16.22	16.02	15.88		
20	QPSK	50	50	15.99	16.14	15.86		
20	QPSK	100	0	16.16	16.00	15.77		
20	16QAM	1	0	16.32	16.33	16.21	17.5	0
20	16QAM	1	49	16.50	16.29	16.20		
20	16QAM	1	99	16.25	16.25	16.19		
20	16QAM	50	0	16.18	15.99	15.81	17.5	0
20	16QAM	50	24	16.25	16.01	15.82		
20	16QAM	50	50	16.12	15.85	15.78		
20	16QAM	100	0	16.09	15.94	15.72		
20	64QAM	1	0	16.06	16.13	15.72	17.5	0
20	64QAM	1	49	16.05	15.75	15.94		
20	64QAM	1	99	15.98	15.66	15.66		
20	64QAM	50	0	16.26	15.87	15.80	17.5	0
20	64QAM	50	24	16.28	15.85	15.82		
20	64QAM	50	50	16.15	15.87	15.79		
20	64QAM	100	0	16.07	16.01	15.77		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	16.18	15.83	15.82	17.5	0
15	QPSK	1	37	16.15	15.85	15.88		
15	QPSK	1	74	16.08	15.72	15.74		
15	QPSK	36	0	16.31	15.93	16.00	17.5	0
15	QPSK	36	20	16.31	15.94	16.06		
15	QPSK	36	39	16.15	15.82	15.94		
15	QPSK	75	0	16.21	15.93	15.71		
15	16QAM	1	0	16.49	16.30	16.28	17.5	0
15	16QAM	1	37	16.53	16.35	16.36		
15	16QAM	1	74	16.34	16.31	16.33		
15	16QAM	36	0	16.27	16.00	15.92	17.5	0
15	16QAM	36	20	16.39	15.90	16.08		
15	16QAM	36	39	16.21	15.95	15.94		
15	16QAM	75	0	16.21	16.01	15.88		
15	64QAM	1	0	16.48	16.02	16.19	17.5	0
15	64QAM	1	37	16.45	16.15	16.10		
15	64QAM	1	74	16.18	16.15	16.05		
15	64QAM	36	0	16.34	15.95	16.04	17.5	0
15	64QAM	36	20	16.41	16.05	15.91		
15	64QAM	36	39	16.26	15.93	15.92		
15	64QAM	75	0	16.21	16.00	15.77		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	16.13	15.72	15.82	17.5	0
10	QPSK	1	25	16.22	15.90	15.90		
10	QPSK	1	49	15.87	15.82	15.77		
10	QPSK	25	0	16.35	15.93	16.02	17.5	0
10	QPSK	25	12	16.31	16.01	16.09		
10	QPSK	25	25	16.17	15.91	15.97		
10	QPSK	50	0	16.26	15.99	15.95		
10	16QAM	1	0	16.45	16.21	16.16	17.5	0
10	16QAM	1	25	16.65	16.33	16.50		
10	16QAM	1	49	16.37	16.19	16.15		
10	16QAM	25	0	16.24	16.01	16.09	17.5	0
10	16QAM	25	12	16.40	16.00	16.12		
10	16QAM	25	25	16.28	16.26	15.99		
10	16QAM	50	0	16.21	16.23	16.07		
10	64QAM	1	0	16.33	15.86	15.89	17.5	0
10	64QAM	1	25	16.21	15.87	15.86		
10	64QAM	1	49	16.35	15.89	15.88		
10	64QAM	25	0	16.31	16.03	16.02	17.5	0
10	64QAM	25	12	16.15	15.85	15.86		
10	64QAM	25	25	16.30	15.90	15.82		
10	64QAM	50	0	16.11	16.03	15.61		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	16.44	16.13	15.98	17.5	0
5	QPSK	1	12	16.40	16.17	16.20		
5	QPSK	1	24	16.20	16.00	16.05		
5	QPSK	12	0	16.45	16.12	16.12	17.5	0
5	QPSK	12	7	16.49	16.08	16.11		
5	QPSK	12	13	16.37	16.05	16.04		
5	QPSK	25	0	16.39	16.14	16.08		
5	16QAM	1	0	16.55	16.40	16.33	17.5	0
5	16QAM	1	12	16.63	16.30	16.32		
5	16QAM	1	24	16.50	16.35	16.30		
5	16QAM	12	0	16.54	16.19	16.16	17.5	0
5	16QAM	12	7	16.48	16.17	16.12		
5	16QAM	12	13	16.43	16.04	16.04		
5	16QAM	25	0	16.46	16.14	16.08		
5	64QAM	1	0	16.44	16.35	16.26	17.5	0
5	64QAM	1	12	16.35	16.38	16.20		
5	64QAM	1	24	16.37	16.25	16.11		
5	64QAM	12	0	16.49	16.31	16.03	17.5	0
5	64QAM	12	7	16.53	16.23	16.11		
5	64QAM	12	13	16.42	16.25	16.17		
5	64QAM	25	0	16.38	16.29	16.01		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	16.40	16.20	16.12	17.5	0
3	QPSK	1	8	16.50	16.09	16.13		
3	QPSK	1	14	16.33	16.04	16.11		
3	QPSK	8	0	16.53	16.20	16.15	17.5	0
3	QPSK	8	4	16.52	16.14	16.12		
3	QPSK	8	7	16.50	16.09	16.05		
3	QPSK	15	0	16.46	16.12	16.12		
3	16QAM	1	0	16.43	16.40	16.34	17.5	0
3	16QAM	1	8	16.61	16.38	16.51		
3	16QAM	1	14	16.60	16.31	16.28		
3	16QAM	8	0	16.59	16.22	16.23	17.5	0
3	16QAM	8	4	16.54	16.15	16.20		
3	16QAM	8	7	16.51	16.13	16.16		
3	16QAM	15	0	16.46	16.22	16.14		
3	64QAM	1	0	16.34	16.62	16.45	17.5	0
3	64QAM	1	8	16.59	16.30	16.31		
3	64QAM	1	14	16.62	16.42	16.33		
3	64QAM	8	0	16.56	16.09	16.17	17.5	0
3	64QAM	8	4	16.52	16.18	16.19		
3	64QAM	8	7	16.49	16.21	16.15		
3	64QAM	15	0	16.57	16.11	16.20		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	16.31	15.91	16.00	17.5	0
1.4	QPSK	1	3	16.28	15.87	15.90		
1.4	QPSK	1	5	16.27	15.86	15.81		
1.4	QPSK	3	0	16.26	15.90	15.96		
1.4	QPSK	3	1	16.37	15.94	15.92		
1.4	QPSK	3	3	16.28	15.96	15.91		
1.4	QPSK	6	0	16.34	15.98	16.03	17.5	0
1.4	16QAM	1	0	16.65	16.34	16.34	17.5	0
1.4	16QAM	1	3	16.44	16.35	16.33		
1.4	16QAM	1	5	16.60	16.25	16.24		
1.4	16QAM	3	0	16.37	16.03	16.05		
1.4	16QAM	3	1	16.44	16.04	16.18		
1.4	16QAM	3	3	16.33	15.94	16.03		
1.4	16QAM	6	0	16.44	16.04	16.03	17.5	0
1.4	64QAM	1	0	16.58	16.11	16.13	17.5	0
1.4	64QAM	1	3	16.44	16.18	16.21		
1.4	64QAM	1	5	16.27	16.18	16.15		
1.4	64QAM	3	0	16.52	16.07	16.03		
1.4	64QAM	3	1	16.53	16.11	16.15		
1.4	64QAM	3	3	16.51	16.05	16.09		
1.4	64QAM	6	0	16.40	16.02	16.03	17.5	0

Band 5 (Cellular 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	22.33	22.26	22.09	23	0
10	QPSK	1	25	22.27	22.14	21.95		
10	QPSK	1	49	22.25	22.12	21.83		
10	QPSK	25	0	21.74	21.57	21.46	23	0
10	QPSK	25	12	21.74	21.53	21.44		
10	QPSK	25	25	21.68	21.48	21.27		
10	QPSK	50	0	21.64	21.50	21.34		
10	16QAM	1	0	21.99	21.91	21.77	23	0
10	16QAM	1	25	21.95	21.87	21.63		
10	16QAM	1	49	21.93	21.75	21.51		
10	16QAM	25	0	20.90	20.79	20.68	22	1
10	16QAM	25	12	20.96	20.75	20.64		
10	16QAM	25	25	20.87	20.69	20.48		
10	16QAM	50	0	20.82	20.67	20.55		
10	64QAM	1	0	21.40	21.30	21.19	22	1
10	64QAM	1	25	21.30	21.28	21.14		
10	64QAM	1	49	21.21	21.12	21.01		
10	64QAM	25	0	20.33	20.24	20.18	21	2
10	64QAM	25	12	20.31	20.24	20.27		
10	64QAM	25	25	20.32	20.21	20.10		
10	64QAM	50	0	20.33	20.19	20.11		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	22.29	22.13	21.92	23	0
5	QPSK	1	12	22.26	22.23	21.91		
5	QPSK	1	24	22.25	22.08	21.92		
5	QPSK	12	0	21.72	21.56	21.32	23	0
5	QPSK	12	7	21.75	21.61	21.35		
5	QPSK	12	13	21.70	21.54	21.28		
5	QPSK	25	0	21.72	21.53	21.29		
5	16QAM	1	0	21.95	21.78	21.60	23	0
5	16QAM	1	12	21.94	21.88	21.55		
5	16QAM	1	24	21.90	21.71	21.50		
5	16QAM	12	0	20.94	20.81	20.53	22	1
5	16QAM	12	7	20.98	20.56	20.55		
5	16QAM	12	13	20.91	20.75	20.50		
5	16QAM	25	0	20.96	20.76	20.50		
5	64QAM	1	0	21.40	21.23	21.01	22	1
5	64QAM	1	12	21.42	21.26	20.98		
5	64QAM	1	24	21.32	21.13	20.95		
5	64QAM	12	0	20.43	20.23	19.99	21	2
5	64QAM	12	7	20.46	20.32	20.00		
5	64QAM	12	13	20.40	20.24	19.96		
5	64QAM	25	0	20.43	20.26	20.00		
Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	22.31	22.16	21.96	23	0
3	QPSK	1	8	22.11	22.26	21.93		
3	QPSK	1	14	22.19	22.14	21.93		
3	QPSK	8	0	21.74	21.56	21.34	23	0
3	QPSK	8	4	21.80	21.58	21.31		
3	QPSK	8	7	21.71	21.55	21.36		
3	QPSK	15	0	21.73	21.54	21.29		
3	16QAM	1	0	21.99	21.79	21.55	23	0
3	16QAM	1	8	22.03	21.90	21.58		
3	16QAM	1	14	21.94	21.78	21.59		
3	16QAM	8	0	20.97	20.81	20.58	22	1
3	16QAM	8	4	21.03	20.85	20.66		
3	16QAM	8	7	20.99	20.82	20.53		
3	16QAM	15	0	20.98	20.79	20.51		
3	64QAM	1	0	21.39	21.16	21.02	22	1
3	64QAM	1	8	21.44	21.29	21.01		
3	64QAM	1	14	21.33	21.12	20.99		
3	64QAM	8	0	20.46	20.27	20.01	21	2
3	64QAM	8	4	20.47	20.33	20.05		
3	64QAM	8	7	20.46	20.28	20.01		
3	64QAM	15	0	20.46	20.26	20.00		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	22.28	22.14	21.86	23	0
1.4	QPSK	1	3	22.28	22.22	21.91		
1.4	QPSK	1	5	22.27	22.06	21.84		
1.4	QPSK	3	0	22.27	22.18	21.81		
1.4	QPSK	3	1	22.31	22.24	21.84		
1.4	QPSK	3	3	22.28	22.13	21.81		
1.4	QPSK	6	0	21.68	21.49	21.18	23	0
1.4	16QAM	1	0	21.89	21.75	21.43	23	0
1.4	16QAM	1	3	21.92	21.85	21.46		
1.4	16QAM	1	5	21.84	21.69	21.45		
1.4	16QAM	3	0	21.67	21.58	21.26		
1.4	16QAM	3	1	21.75	21.64	21.26		
1.4	16QAM	3	3	21.67	21.51	21.25		
1.4	16QAM	6	0	20.97	20.78	20.56	22	1
1.4	64QAM	1	0	21.30	21.16	20.92	22	1
1.4	64QAM	1	3	21.36	21.21	20.86		
1.4	64QAM	1	5	21.31	21.11	20.88		
1.4	64QAM	3	0	21.20	21.09	20.82		
1.4	64QAM	3	1	21.27	21.14	20.86		
1.4	64QAM	3	3	21.20	21.01	20.79		
1.4	64QAM	6	0	20.36	20.19	19.88	21	2

SPORTON LAB.

Band 7 (2600MHz Band)
Part 27

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	16.61	16.83	16.58		
20	QPSK	1	49	16.66	16.71	16.60	17	0
20	QPSK	1	99	16.68	16.76	16.61		
20	QPSK	50	0	16.79	16.82	16.74		
20	QPSK	50	24	16.78	16.80	16.74	17	0
20	QPSK	50	50	16.75	16.80	16.68		
20	QPSK	100	0	16.64	16.78	16.65		
20	16QAM	1	0	16.57	16.65	16.51		
20	16QAM	1	49	16.56	16.69	16.50	17	0
20	16QAM	1	99	16.63	16.71	16.54		
20	16QAM	50	0	16.39	16.47	16.35		
20	16QAM	50	24	16.37	16.49	16.35	17	0
20	16QAM	50	50	16.41	16.46	16.32		
20	16QAM	100	0	16.26	16.39	16.23		
20	64QAM	1	0	16.46	16.63	16.46		
20	64QAM	1	49	16.59	16.63	16.44	17	0
20	64QAM	1	99	16.56	16.56	16.45		
20	64QAM	50	0	16.39	16.45	16.34		
20	64QAM	50	24	16.37	16.48	16.34	17	0
20	64QAM	50	50	16.36	16.42	16.30		
20	64QAM	100	0	16.28	16.41	16.24		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	16.30	16.22	16.14		
15	QPSK	1	37	16.31	16.22	16.14	17	0
15	QPSK	1	74	16.36	16.26	16.21		
15	QPSK	36	0	16.42	16.41	16.34		
15	QPSK	36	20	16.45	16.36	16.36	17	0
15	QPSK	36	39	16.43	16.34	16.36		
15	QPSK	75	0	16.33	16.26	16.27		
15	16QAM	1	0	16.64	16.55	16.50		
15	16QAM	1	37	16.65	16.59	16.53	17	0
15	16QAM	1	74	16.68	16.60	16.55		
15	16QAM	36	0	16.48	16.41	16.32		
15	16QAM	36	20	16.46	16.38	16.36	17	0
15	16QAM	36	39	16.42	16.37	16.36		
15	16QAM	75	0	16.35	16.28	16.29		
15	64QAM	1	0	16.63	16.43	16.46		
15	64QAM	1	37	16.63	16.57	16.41	17	0
15	64QAM	1	74	16.61	16.51	16.43		
15	64QAM	36	0	16.49	16.39	16.33		
15	64QAM	36	20	16.42	16.36	16.37	17	0
15	64QAM	36	39	16.44	16.35	16.36		
15	64QAM	75	0	16.36	16.30	16.28		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	16.34	16.27	16.13		
10	QPSK	1	25	16.30	16.29	16.17	17	0
10	QPSK	1	49	16.34	16.31	16.22		
10	QPSK	25	0	16.44	16.39	16.30		
10	QPSK	25	12	16.47	16.35	16.33	17	0
10	QPSK	25	25	16.40	16.35	16.32		
10	QPSK	50	0	16.32	16.24	16.23		
10	16QAM	1	0	16.66	16.61	16.51		
10	16QAM	1	25	16.69	16.63	16.48	17	0
10	16QAM	1	49	16.69	16.67	16.54		
10	16QAM	25	0	16.45	16.41	16.27		
10	16QAM	25	12	16.47	16.35	16.30	17	0
10	16QAM	25	25	16.38	16.37	16.27		
10	16QAM	50	0	16.29	16.27	16.21		
10	64QAM	1	0	16.71	16.63	16.55		
10	64QAM	1	25	16.71	16.71	16.50	17	0
10	64QAM	1	49	16.74	16.67	16.58		
10	64QAM	25	0	16.44	16.39	16.29		
10	64QAM	25	12	16.51	16.34	16.30	17	0
10	64QAM	25	25	16.43	16.37	16.27		
10	64QAM	50	0	16.32	16.25	16.18		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	16.33	16.32	16.16		
5	QPSK	1	12	16.37	16.32	16.22	17	0
5	QPSK	1	24	16.35	16.28	16.22		
5	QPSK	12	0	16.43	16.34	16.25		
5	QPSK	12	7	16.48	16.35	16.31	17	0
5	QPSK	12	13	16.41	16.30	16.25		
5	QPSK	25	0	16.40	16.33	16.26		
5	16QAM	1	0	16.67	16.62	16.49		
5	16QAM	1	12	16.61	16.54	16.46	17	0
5	16QAM	1	24	16.67	16.54	16.53		
5	16QAM	12	0	16.42	16.36	16.25		
5	16QAM	12	7	16.49	16.39	16.33	17	0
5	16QAM	12	13	16.41	16.34	16.29		
5	16QAM	25	0	16.42	16.31	16.27		
5	64QAM	1	0	16.54	16.55	16.38		
5	64QAM	1	12	16.58	16.51	16.42	17	0
5	64QAM	1	24	16.62	16.47	16.43		
5	64QAM	12	0	16.40	16.34	16.21		
5	64QAM	12	7	16.48	16.36	16.26	17	0
5	64QAM	12	13	16.41	16.31	16.22		
5	64QAM	25	0	16.44	16.28	16.26		

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	22.40	22.29	22.10		
15	QPSK	1	37	22.29	22.21	21.96	23	0
15	QPSK	1	74	22.22	22.07	22.03		
15	QPSK	36	0	21.60	21.54	21.38		
15	QPSK	36	20	21.55	21.59	21.40	23	0
15	QPSK	36	39	21.53	21.46	21.30		
15	QPSK	75	0	21.64	21.51	21.33		
15	16QAM	1	0	22.01	21.91	21.73		
15	16QAM	1	37	21.90	21.86	21.61	23	0
15	16QAM	1	74	21.82	21.66	21.55		
15	16QAM	36	0	20.81	20.71	20.59		
15	16QAM	36	20	20.92	20.78	20.59	22	1
15	16QAM	36	39	20.83	20.67	20.59		
15	16QAM	75	0	20.88	20.72	20.56		
15	64QAM	1	0	21.42	21.32	21.09		
15	64QAM	1	37	21.25	21.26	20.94	22	1
15	64QAM	1	74	21.23	21.03	20.93		
15	64QAM	36	0	20.34	20.24	20.10		
15	64QAM	36	20	20.41	20.28	20.09	21	2
15	64QAM	36	39	20.33	20.15	19.95		
15	64QAM	75	0	20.36	20.21	20.06		
Channel				26740	26865	26990	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				819	831.5	844		
10	QPSK	1	0	22.30	22.32	22.10		
10	QPSK	1	25	22.39	22.27	22.13	23	0
10	QPSK	1	49	22.38	22.15	22.10		
10	QPSK	25	0	21.74	21.56	21.32		
10	QPSK	25	12	21.82	21.67	21.40	23	0
10	QPSK	25	25	21.73	21.55	21.32		
10	QPSK	50	0	21.74	21.55	21.32		
10	16QAM	1	0	22.15	22.00	21.73		
10	16QAM	1	25	22.05	21.95	21.71	23	0
10	16QAM	1	49	21.99	21.83	21.73		
10	16QAM	25	0	20.96	20.79	20.59		
10	16QAM	25	12	21.07	20.85	20.63	22	1
10	16QAM	25	25	20.93	20.71	20.58		
10	16QAM	50	0	20.97	20.74	20.50		
10	64QAM	1	0	21.69	21.50	21.22		
10	64QAM	1	25	21.54	21.45	21.23	22	1
10	64QAM	1	49	21.51	21.34	21.24		
10	64QAM	25	0	20.48	20.21	20.13		
10	64QAM	25	12	20.58	20.39	20.11	21	2
10	64QAM	25	25	20.46	20.25	20.15		
10	64QAM	50	0	20.44	20.26	20.04		
Channel				26715	26865	27015	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				816.5	831.5	846.5		
5	QPSK	1	0	22.16	21.98	21.70		
5	QPSK	1	12	22.19	22.03	21.69	23	0
5	QPSK	1	24	22.13	21.95	21.71		
5	QPSK	12	0	21.59	21.37	21.14		
5	QPSK	12	7	21.62	21.40	21.16	23	0
5	QPSK	12	13	21.57	21.32	21.14		
5	QPSK	25	0	21.57	21.34	21.37		
5	16QAM	1	0	21.79	21.67	21.34		
5	16QAM	1	12	21.84	21.68	21.40	23	0
5	16QAM	1	24	21.75	21.55	21.43		
5	16QAM	12	0	20.81	20.57	20.59		
5	16QAM	12	7	20.83	20.60	20.57	22	1
5	16QAM	12	13	20.79	20.57	20.59		
5	16QAM	25	0	20.80	20.57	20.58		
5	64QAM	1	0	21.19	21.06	21.05		
5	64QAM	1	12	21.31	21.17	21.09	22	1
5	64QAM	1	24	21.48	21.31	21.30		
5	64QAM	12	0	20.60	20.36	20.16		
5	64QAM	12	7	20.62	20.37	20.27	21	2
5	64QAM	12	13	20.56	20.36	20.35		
5	64QAM	25	0	20.57	20.36	20.21		
Channel				26705	26865	27025	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				815.5	831.5	847.5		
3	QPSK	1	0	22.19	22.02	21.90		
3	QPSK	1	8	21.76	22.08	21.79	23	0
3	QPSK	1	14	22.16	21.97	21.82		
3	QPSK	8	0	21.60	21.36	21.26		
3	QPSK	8	4	21.66	21.44	21.23	23	0
3	QPSK	8	7	21.62	21.37	21.36		
3	QPSK	15	0	21.62	21.36	21.37		
3	16QAM	1	0	21.83	21.63	21.64		
3	16QAM	1	8	21.90	21.72	21.78	23	0
3	16QAM	1	14	21.81	21.62	21.63		
3	16QAM	8	0	20.86	20.64	20.66		
3	16QAM	8	4	20.90	20.69	20.71	22	1
3	16QAM	8	7	20.88	20.63	20.66		
3	16QAM	15	0	20.85	20.60	20.65		
3	64QAM	1	0	21.26	21.04	21.16		
3	64QAM	1	8	21.33	21.16	21.17	22	1
3	64QAM	1	14	21.24	20.99	21.02		
3	64QAM	8	0	20.64	20.39	20.41		
3	64QAM	8	4	20.64	20.44	20.45	21	2
3	64QAM	8	7	20.60	20.37	20.39		
3	64QAM	15	0	20.63	20.36	20.37		
Channel				26697	26865	27033	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				814.7	831.5	848.3		
1.4	QPSK	1	0	22.18	21.94	21.72		
1.4	QPSK	1	3	22.00	22.02	21.83		
1.4	QPSK	1	5	22.15	21.95	21.85	23	0
1.4	QPSK	3	0	22.16	21.99	21.87		
1.4	QPSK	3	1	21.81	22.03	21.86		
1.4	QPSK	3	3	22.20	21.97	21.87		
1.4	QPSK	6	0	21.55	21.38	21.40	23	0
1.4	16QAM	1	0	21.75	21.58	21.59		
1.4	16QAM	1	3	21.82	21.65	21.66		
1.4	16QAM	1	5	21.74	21.59	21.62	23	0
1.4	16QAM	3	0	21.60	21.39	21.43		
1.4	16QAM	3	1	21.63	21.45	21.47		
1.4	16QAM	3	3	21.58	21.37	21.49		
1.4	16QAM	6	0	21.15	20.93	20.97	22	1
1.4	64QAM	1	0	21.53	21.32	21.39		
1.4	64QAM	1	3	21.58	21.33	21.37		
1.4	64QAM	1	5	21.51	21.31	21.36	22	1
1.4	64QAM	3	0	21.39	21.20	21.23		
1.4	64QAM	3	1	21.47	21.24	21.24		
1.4	64QAM	3	3	21.40	21.18	21.30		
1.4	64QAM	6	0	20.55	20.35	20.39	21	2

Band 66

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				132072	132322	132572		
Frequency (MHz)				1720	1745	1770		
20	QPSK	1	0	16.84	16.85	16.77		
20	QPSK	1	49	16.73	16.44	16.56	17.5	0
20	QPSK	1	99	16.71	16.59	16.65		
20	QPSK	50	0	16.40	16.64	16.42		
20	QPSK	50	24	16.56	16.31	16.26	17.5	0
20	QPSK	50	50	16.40	16.39	16.33		
20	QPSK	100	0	16.47	16.72	16.58		
20	16QAM	1	0	16.35	16.29	16.48		
20	16QAM	1	49	16.76	16.64	16.27	17.5	0
20	16QAM	1	99	16.43	16.26	16.45		
20	16QAM	50	0	16.28	16.11	16.18		
20	16QAM	50	24	16.39	16.34	16.39	17.5	0
20	16QAM	50	50	16.26	16.21	16.29		
20	16QAM	100	0	16.24	16.06	16.20		
20	64QAM	1	0	16.14	16.11	16.38		
20	64QAM	1	49	16.21	16.12	16.29	17.5	0
20	64QAM	1	99	16.39	16.19	16.09		
20	64QAM	50	0	16.34	16.09	16.03		
20	64QAM	50	24	16.46	16.38	16.01	17.5	0
20	64QAM	50	50	16.32	16.28	16.39		
20	64QAM	100	0	16.30	16.21	15.93		
Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	QPSK	1	0	16.44	16.12	16.43		
15	QPSK	1	37	16.43	16.37	16.31	17.5	0
15	QPSK	1	74	16.36	16.22	16.11		
15	QPSK	36	0	16.58	16.29	16.36		
15	QPSK	36	20	16.59	16.50	16.48	17.5	0
15	QPSK	36	39	16.52	16.50	16.44		
15	QPSK	75	0	16.55	16.40	16.38		
15	16QAM	1	0	16.68	16.34	16.59		
15	16QAM	1	37	16.81	16.71	16.48	17.5	0
15	16QAM	1	74	16.70	16.47	16.49		
15	16QAM	36	0	16.53	16.25	16.36		
15	16QAM	36	20	16.53	16.50	16.49	17.5	0
15	16QAM	36	39	16.45	16.52	16.48		
15	16QAM	75	0	16.50	16.41	16.41		
15	64QAM	1	0	16.51	16.19	16.39		
15	64QAM	1	37	16.58	16.48	16.59	17.5	0
15	64QAM	1	74	16.59	16.41	16.46		
15	64QAM	36	0	16.56	16.28	16.37		
15	64QAM	36	20	16.60	16.53	16.23	17.5	0
15	64QAM	36	39	16.56	16.53	16.58		
15	64QAM	75	0	16.55	16.52	16.46		
Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	QPSK	1	0	16.37	16.15	16.14		
10	QPSK	1	25	16.51	16.33	16.13	17.5	0
10	QPSK	1	49	16.18	16.24	16.12		
10	QPSK	25	0	16.33	16.07	16.12		
10	QPSK	25	12	16.53	16.37	16.41	17.5	0
10	QPSK	25	25	16.35	16.31	16.23		
10	QPSK	50	0	16.35	16.19	16.17		
10	16QAM	1	0	16.56	16.46	16.39		
10	16QAM	1	25	16.83	16.70	16.70	17.5	0
10	16QAM	1	49	16.58	16.35	16.45		
10	16QAM	25	0	16.60	16.08	16.13		
10	16QAM	25	12	16.50	16.43	16.44	17.5	0
10	16QAM	25	25	16.30	16.35	16.26		
10	16QAM	50	0	16.29	16.22	16.20		
10	64QAM	1	0	16.19	16.19	16.16		
10	64QAM	1	25	16.66	16.19	16.16	17.5	0
10	64QAM	1	49	16.18	16.27	16.38		
10	64QAM	25	0	16.33	16.13	16.20		
10	64QAM	25	12	16.53	16.45	16.49	17.5	0
10	64QAM	25	25	16.34	16.40	16.31		
10	64QAM	50	0	16.33	16.25	16.05		
Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	16.35	16.09	16.11		
5	QPSK	1	12	16.48	16.34	16.17	17.5	0
5	QPSK	1	24	16.37	16.29	16.09		
5	QPSK	12	0	16.51	16.27	16.24		
5	QPSK	12	7	16.58	16.44	16.29	17.5	0
5	QPSK	12	13	16.51	16.42	16.21		
5	QPSK	25	0	16.50	16.33	16.21		
5	16QAM	1	0	16.59	16.31	16.45		
5	16QAM	1	12	16.62	16.68	16.51	17.5	0
5	16QAM	1	24	16.63	16.51	16.36		
5	16QAM	12	0	16.47	16.30	16.25		
5	16QAM	12	7	16.52	16.47	16.31	17.5	0
5	16QAM	12	13	16.49	16.46	16.25		
5	16QAM	25	0	16.47	16.39	16.26		
5	64QAM	1	0	16.53	16.22	16.32		
5	64QAM	1	12	16.64	16.51	16.30	17.5	0
5	64QAM	1	24	16.59	16.29	16.20		
5	64QAM	12	0	16.48	16.39	16.39		
5	64QAM	12	7	16.60	16.14	16.45	17.5	0
5	64QAM	12	13	16.54	16.55	16.21		
5	64QAM	25	0	16.51	16.43	16.36		
Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	16.50	16.39	16.13		
3	QPSK	1	8	16.62	16.38	16.22	17.5	0
3	QPSK	1	14	16.53	16.32	16.12		
3	QPSK	8	0	16.61	16.30	16.21		
3	QPSK	8	4	16.64	16.41	16.25	17.5	0
3	QPSK	8	7	16.60	16.39	16.19		
3	QPSK	15	0	16.60	16.33	16.18		
3	16QAM	1	0	16.79	16.59	16.55		
3	16QAM	1	8	16.84	16.72	16.52	17.5	0
3	16QAM	1	14	16.73	16.59	16.51		
3	16QAM	8	0	16.63	16.37	16.28		
3	16QAM	8	4	16.67	16.50	16.34	17.5	0
3	16QAM	8	7	16.60	16.49	16.28		
3	16QAM	15	0	16.60	16.38	16.24		
3	64QAM	1	0	16.63	16.31	16.30		
3	64QAM	1	8	16.78	16.30	16.31	17.5	0
3	64QAM	1	14	16.63	16.28	16.29		
3	64QAM	8	0	16.65	16.28	16.29		
3	64QAM	8	4	16.71	16.56	16.23	17.5	0
3	64QAM	8	7	16.66	16.28	16.21		
3	64QAM	15	0	16.63	16.47	16.28		
Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	16.63	16.43	16.28		
1.4	QPSK	1	3	16.70	16.41	16.25		
1.4	QPSK	1	5	16.64	16.35	16.23	17.5	0
1.4	QPSK	3	0	16.64	16.42	16.24		
1.4	QPSK	3	1	16.70	16.59	16.52		
1.4	QPSK	3	3	16.65	16.37	16.20		
1.4	QPSK	6	0	16.69	16.32	16.25	17.5	0
1.4	16QAM	1	0	16.80	16.61	16.56		
1.4	16QAM	1	3	16.61	16.65	16.62		
1.4	16QAM	1	5	16.73	16.59	16.55	17.5	0
1.4	16QAM	3	0	16.66	16.56	16.25		
1.4	16QAM	3	1	16.71	16.30	16.23		
1.4	16QAM	3	3	16.69	16.39	16.21		
1.4	16QAM	6	0	16.76	16.41	16.26	17.5	0
1.4	64QAM	1	0	16.67	16.35	16.31		
1.4	64QAM	1	3	16.68	16.32	16.25		
1.4	64QAM	1	5	16.69	16.37	16.23	17.5	0
1.4	64QAM	3	0	16.74	16.65	16.55		
1.4	64QAM	3	1	16.74	16.69	16.36		
1.4	64QAM	3	3	16.81	16.61	16.35		
1.4	64QAM	6	0	16.60	16.31	16.11	17.5	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	18.48	18.55	18.70		
20	QPSK	1	49	18.56	18.66	18.81	19	0
20	QPSK	1	99	18.60	18.70	18.85		
20	QPSK	50	0	18.41	18.46	18.57		
20	QPSK	50	24	18.65	18.70	18.76	19	0
20	QPSK	50	50	18.56	18.65	18.76		
20	QPSK	100	0	18.52	18.59	18.66		
20	16QAM	1	0	18.61	18.67	18.77		
20	16QAM	1	49	18.66	18.77	18.87	19	0
20	16QAM	1	99	18.76	18.88	18.97		
20	16QAM	50	0	18.44	18.52	18.64		
20	16QAM	50	24	18.67	18.75	18.79	19	0
20	16QAM	50	50	18.60	18.69	18.80		
20	16QAM	100	0	18.54	18.64	18.70		
20	64QAM	1	0	18.48	18.48	18.64		
20	64QAM	1	49	18.52	18.56	18.69	19	0
20	64QAM	1	99	18.58	18.86	18.79		
20	64QAM	50	0	18.38	18.46	18.57		
20	64QAM	50	24	18.60	18.67	18.74	19	0
20	64QAM	50	50	18.53	18.63	18.74		
20	64QAM	100	0	18.57	18.65	18.72		
Channel				37825	38000	38175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2577.5	2595	2612.5		
15	QPSK	1	0	18.44	18.53	18.65		
15	QPSK	1	37	18.49	18.55	18.74	19	0
15	QPSK	1	74	18.56	18.65	18.76		
15	QPSK	36	0	18.51	18.53	18.64		
15	QPSK	36	20	18.63	18.69	18.78	19	0
15	QPSK	36	39	18.56	18.64	18.80		
15	QPSK	75	0	18.57	18.61	18.70		
15	16QAM	1	0	18.58	18.70	18.86		
15	16QAM	1	37	18.58	18.69	18.79	19	0
15	16QAM	1	74	18.72	18.81	18.97		
15	16QAM	36	0	18.48	18.48	18.63		
15	16QAM	36	20	18.60	18.67	18.74	19	0
15	16QAM	36	39	18.53	18.64	18.78		
15	16QAM	75	0	18.55	18.67	18.75		
15	64QAM	1	0	18.39	18.44	18.67		
15	64QAM	1	37	18.38	18.58	18.74	19	0
15	64QAM	1	74	18.50	18.67	18.75		
15	64QAM	36	0	18.53	18.52	18.66		
15	64QAM	36	20	18.62	18.71	18.79	19	0
15	64QAM	36	39	18.59	18.68	18.84		
15	64QAM	75	0	18.56	18.65	18.74		
Channel				37800	38000	38200	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2575	2595	2615		
10	QPSK	1	0	18.36	18.56	18.73		
10	QPSK	1	25	18.43	18.51	18.76	19	0
10	QPSK	1	49	18.39	18.62	18.85		
10	QPSK	25	0	18.45	18.45	18.65		
10	QPSK	25	12	18.55	18.65	18.75	19	0
10	QPSK	25	25	18.49	18.60	18.81		
10	QPSK	50	0	18.49	18.58	18.71		
10	16QAM	1	0	18.56	18.68	18.88		
10	16QAM	1	25	18.59	18.70	18.91	19	0
10	16QAM	1	49	18.65	18.71	18.94		
10	16QAM	25	0	18.46	18.48	18.66		
10	16QAM	25	12	18.63	18.69	18.80	19	0
10	16QAM	25	25	18.52	18.61	18.83		
10	16QAM	50	0	18.54	18.65	18.75		
10	64QAM	1	0	18.39	18.59	18.77		
10	64QAM	1	25	18.41	18.57	18.73	19	0
10	64QAM	1	49	18.35	18.70	18.81		
10	64QAM	25	0	18.46	18.47	18.65		
10	64QAM	25	12	18.57	18.71	18.77	19	0
10	64QAM	25	25	18.45	18.61	18.80		
10	64QAM	50	0	18.48	18.57	18.67		
Channel				37775	38000	38225	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2572.5	2595	2617.5		
5	QPSK	1	0	18.42	18.45	18.70		
5	QPSK	1	12	18.47	18.55	18.76	19	0
5	QPSK	1	24	18.43	18.57	18.74		
5	QPSK	12	0	18.52	18.54	18.82		
5	QPSK	12	7	18.59	18.69	18.90	19	0
5	QPSK	12	13	18.58	18.67	18.85		
5	QPSK	25	0	18.55	18.63	18.82		
5	16QAM	1	0	18.55	18.55	18.82		
5	16QAM	1	12	18.68	18.82	18.82	19	0
5	16QAM	1	24	18.71	18.73	18.87		
5	16QAM	12	0	18.51	18.57	18.79		
5	16QAM	12	7	18.57	18.68	18.86	19	0
5	16QAM	12	13	18.56	18.68	18.86		
5	16QAM	25	0	18.60	18.69	18.87		
5	64QAM	1	0	18.29	18.35	18.58		
5	64QAM	1	12	18.36	18.47	18.66	19	0
5	64QAM	1	24	18.36	18.46	18.63		
5	64QAM	12	0	18.54	18.56	18.77		
5	64QAM	12	7	18.58	18.67	18.86	19	0
5	64QAM	12	13	18.54	18.67	18.83		
5	64QAM	25	0	18.55	18.64	18.83		

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	18.78	18.71	18.91	18.85	18.80		
20	QPSK	1	49	18.67	18.70	18.79	18.82	18.87	19	0
20	QPSK	1	99	18.67	18.68	18.76	18.77	18.90		
20	QPSK	50	0	18.66	18.51	18.96	18.76	18.85		
20	QPSK	50	24	18.68	18.54	18.79	18.93	18.90	19	0
20	QPSK	50	50	18.68	18.53	18.77	18.81	18.95		
20	QPSK	100	0	18.48	18.53	18.88	18.81	18.85		
20	16QAM	1	0	18.63	18.51	18.47	18.69	18.68		
20	16QAM	1	49	18.58	18.51	18.72	18.94	18.97	19	0
20	16QAM	1	99	18.56	18.52	18.52	18.59	18.91		
20	16QAM	50	0	18.71	18.64	18.70	18.79	18.89		
20	16QAM	50	24	18.72	18.70	18.93	18.95	18.93	19	0
20	16QAM	50	50	18.68	18.66	18.90	18.87	18.94		
20	16QAM	100	0	18.63	18.48	18.72	18.86	18.94		
20	64QAM	1	0	18.47	18.56	18.43	18.39	18.76		
20	64QAM	1	49	18.45	18.51	18.57	18.67	18.86	19	0
20	64QAM	1	99	18.70	18.76	18.74	18.79	18.55		
20	64QAM	50	0	18.58	18.51	18.58	18.73	18.83		
20	64QAM	50	24	18.56	18.54	18.57	18.91	18.91	19	0
20	64QAM	50	50	18.53	18.52	18.52	18.80	18.90		
20	64QAM	100	0	18.50	18.51	18.56	18.88	18.89		
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	18.49	18.39	18.35	18.58	18.55		
15	QPSK	1	37	18.53	18.39	18.47	18.76	18.81	19	0
15	QPSK	1	74	18.55	18.39	18.42	18.60	18.77		
15	QPSK	36	0	18.62	18.43	18.43	18.73	18.82		
15	QPSK	36	20	18.64	18.50	18.63	18.86	18.87	19	0
15	QPSK	36	39	18.57	18.39	18.62	18.80	18.85		
15	QPSK	75	0	18.59	18.44	18.56	18.84	18.82		
15	16QAM	1	0	18.69	18.46	18.42	18.74	18.76		
15	16QAM	1	37	18.62	18.43	18.62	18.90	18.78	19	0
15	16QAM	1	74	18.62	18.41	18.60	18.75	18.88		
15	16QAM	36	0	18.62	18.39	18.41	18.73	18.79		
15	16QAM	36	20	18.61	18.48	18.61	18.85	18.84	19	0
15	16QAM	36	39	18.52	18.37	18.59	18.80	18.86		
15	16QAM	75	0	18.64	18.44	18.59	18.83	18.82		
15	64QAM	1	0	18.50	18.49	18.45	18.53	18.60		
15	64QAM	1	37	18.45	18.38	18.59	18.63	18.86	19	0
15	64QAM	1	74	18.47	18.46	18.44	18.45	18.61		
15	64QAM	36	0	18.66	18.45	18.46	18.76	18.84		
15	64QAM	36	20	18.68	18.52	18.64	18.91	18.88	19	0
15	64QAM	36	39	18.58	18.46	18.63	18.82	18.88		
15	64QAM	75	0	18.64	18.46	18.60	18.83	18.84		
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	18.31	18.28	18.34	18.48	18.55		
10	QPSK	1	25	18.29	18.38	18.36	18.76	18.74	19	0
10	QPSK	1	49	18.36	18.29	18.28	18.56	18.59		
10	QPSK	25	0	18.44	18.44	18.51	18.74	18.86		
10	QPSK	25	12	18.44	18.45	18.56	18.81	18.93	19	0
10	QPSK	25	25	18.44	18.46	18.45	18.82	18.86		
10	QPSK	50	0	18.51	18.47	18.51	18.71	18.84		
10	16QAM	1	0	18.70	18.49	18.51	18.66	18.71		
10	16QAM	1	25	18.61	18.65	18.63	18.76	18.82	19	0
10	16QAM	1	49	18.60	18.48	18.55	18.69	18.68		
10	16QAM	25	0	18.63	18.57	18.55	18.74	18.87		
10	16QAM	25	12	18.69	18.65	18.71	18.84	18.79	19	0
10	16QAM	25	25	18.61	18.54	18.56	18.84	18.83		
10	16QAM	50	0	18.61	18.57	18.59	18.77	18.89		
10	64QAM	1	0	18.54	18.41	18.48	18.54	18.61		
10	64QAM	1	25	18.52	18.57	18.59	18.79	18.83	19	0
10	64QAM	1	49	18.57	18.42	18.39	18.57	18.64		
10	64QAM	25	0	18.63	18.54	18.48	18.70	18.84		
10	64QAM	25	12	18.67	18.62	18.66	18.83	18.78	19	0
10	64QAM	25	25	18.60	18.52	18.57	18.83	18.84		
10	64QAM	50	0	18.49	18.55	18.53	18.69	18.84		
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	18.36	18.31	18.33	18.74	18.80		
5	QPSK	1	12	18.32	18.31	18.41	18.78	18.81	19	0
5	QPSK	1	24	18.33	18.36	18.40	18.77	18.76		
5	QPSK	12	0	18.51	18.47	18.46	18.82	18.92		
5	QPSK	12	7	18.53	18.49	18.55	18.92	18.85	19	0
5	QPSK	12	13	18.47	18.46	18.52	18.90	18.93		
5	QPSK	25	0	18.44	18.43	18.52	18.84	18.90		
5	16QAM	1	0	18.56	18.55	18.57	18.85	18.75		
5	16QAM	1	12	18.56	18.53	18.59	18.83	18.82	19	0
5	16QAM	1	24	18.57	18.54	18.58	18.84	18.90		
5	16QAM	12	0	18.49	18.44	18.46	18.81	18.89		
5	16QAM	12	7	18.45	18.45	18.53	18.90	18.94	19	0
5	16QAM	12	13	18.45	18.46	18.52	18.89	18.90		
5	16QAM	25	0	18.48	18.47	18.56	18.89	18.80		
5	64QAM	1	0	18.33	18.26	18.25	18.63	18.70		
5	64QAM	1	12	18.34	18.24	18.33	18.74	18.72	19	0
5	64QAM	1	24	18.54	18.45	18.51	18.69	18.66		
5	64QAM	12	0	18.64	18.52	18.65	18.81	18.89		
5	64QAM	12	7	18.68	18.57	18.74	18.92	18.92	19	0
5	64QAM	12	13	18.45	18.51	18.52	18.90	18.89		
5	64QAM	25	0	18.42	18.39	18.49	18.83	18.88		

Reduced Power Mode for Hotspot 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	30.90	30.91	30.92	31.00	21.90	21.91	21.92	22.00
GPRS 1 Tx slot	30.88	30.90	30.85	31.00	21.88	21.90	21.85	22.00
GPRS 2 Tx slots	29.99	29.84	29.93	30.50	23.99	23.84	23.93	24.50
GPRS 3 Tx slots	28.12	28.35	28.34	29.00	23.86	24.09	24.08	24.74
GPRS 4 Tx slots	26.54	26.71	26.70	27.50	23.54	23.71	23.70	24.50
EDGE 1 Tx slot	25.40	25.41	24.97	25.50	16.40	16.41	15.97	16.50
EDGE 2 Tx slots	23.92	23.96	23.87	25.00	17.92	17.96	17.87	19.00
EDGE 3 Tx slots	22.12	22.21	22.10	23.00	17.86	17.95	17.84	18.74
EDGE 4 Tx slots	20.67	20.92	20.84	22.00	17.67	17.92	17.84	19.00

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	23.41	23.25	22.52	23.50	14.41	14.25	13.52	14.50
GPRS 1 Tx slot	23.40	23.22	22.51	23.50	14.40	14.22	13.51	14.50
GPRS 2 Tx slots	22.80	21.51	21.67	23.00	16.80	15.51	15.67	17.00
GPRS 3 Tx slots	21.22	21.28	20.30	21.50	16.96	17.02	16.04	17.24
GPRS 4 Tx slots	18.98	18.38	18.02	19.50	15.98	15.38	15.02	16.50
EDGE 1 Tx slot	19.54	19.22	18.51	20.00	10.54	10.22	9.51	11.00
EDGE 2 Tx slots	18.01	17.84	17.06	18.50	12.01	11.84	11.06	12.50
EDGE 3 Tx slots	15.37	16.19	15.48	16.50	11.11	11.93	11.22	12.24
EDGE 4 Tx slots	15.32	14.77	14.48	15.50	12.32	11.77	11.48	12.50

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	15.70	15.75	15.74	16.50	14.71	14.99	14.80	16.00	22.79	22.86	22.41	23.00
3GPP Rel 99	RMC 12.2Kbps	15.72	15.77	15.76	16.50	14.72	15.00	14.81	16.00	22.80	22.87	22.43	23.00
3GPP Rel 6	HSDPA Subtest-1	14.66	14.66	14.26	16.00	13.61	13.92	13.48	15.50	22.44	22.46	22.14	22.50
3GPP Rel 6	HSDPA Subtest-2	14.63	14.64	14.19	16.00	13.60	13.93	13.54	15.50	22.47	22.45	22.11	22.50
3GPP Rel 6	HSDPA Subtest-3	14.17	14.14	13.74	15.50	13.06	13.46	12.98	15.00	21.94	21.96	21.63	22.00
3GPP Rel 6	HSDPA Subtest-4	14.19	14.10	13.69	15.50	13.11	13.46	12.96	15.00	21.93	21.92	21.63	22.00
3GPP Rel 8	DC-HSDPA Subtest-1	14.65	14.66	14.25	16.00	13.65	13.95	13.50	15.50	22.41	22.41	22.11	22.50
3GPP Rel 8	DC-HSDPA Subtest-2	14.64	14.66	14.18	16.00	13.61	13.94	13.56	15.50	22.44	22.39	22.12	22.50
3GPP Rel 8	DC-HSDPA Subtest-3	14.19	14.15	13.73	15.50	13.18	13.48	13.02	15.00	21.91	21.91	21.61	22.00
3GPP Rel 8	DC-HSDPA Subtest-4	14.18	14.12	13.71	15.50	13.18	13.47	12.99	15.00	21.95	21.96	21.86	22.00
3GPP Rel 6	HSUPA Subtest-1	14.67	14.64	14.19	16.00	13.69	13.97	13.50	15.50	22.44	22.47	22.12	22.50
3GPP Rel 6	HSUPA Subtest-2	12.58	12.62	12.28	14.00	11.68	12.03	11.61	13.50	20.48	20.44	20.09	20.50
3GPP Rel 6	HSUPA Subtest-3	13.77	13.69	13.31	15.00	12.61	12.94	12.49	14.50	21.44	21.47	21.10	21.50
3GPP Rel 6	HSUPA Subtest-4	12.74	12.68	12.32	14.00	11.61	11.96	11.53	13.50	20.44	20.48	20.08	20.50
3GPP Rel 6	HSUPA Subtest-5	14.80	14.70	14.30	16.00	13.60	14.00	13.50	15.50	22.50	22.50	22.10	22.50

Band	CDMA BC1			Tune-up Limit (dBm)
TX Channel	25	600	1175	
Frequency (MHz)	1851.25	1880	1908.75	
RC1 SO55	16.18	16.32	16.25	17.00
RC3 SO55	16.22	16.45	16.33	17.00
RC3 SO32 (F+SCH)	16.19	16.40	16.30	17.00
RC3 SO32 (+SCH)	16.18	16.35	16.27	17.00
RTAP 153.6Kbps	16.20	16.42	16.32	17.00
RETAP 4096Bits	16.19	16.37	16.29	17.00

SPORTON LAB.

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	15.11	15.13	14.91	16	0
20	QPSK	1	49	15.00	15.11	14.93		
20	QPSK	1	99	15.11	15.02	15.12		
20	QPSK	50	0	15.02	15.18	14.92	16	0
20	QPSK	50	24	15.17	15.11	14.92		
20	QPSK	50	50	15.10	15.01	15.05		
20	QPSK	100	0	15.05	15.08	15.04		
20	16QAM	1	0	14.87	15.04	14.58	16	0
20	16QAM	1	49	14.80	14.54	14.58		
20	16QAM	1	99	14.55	14.55	14.75		
20	16QAM	50	0	14.70	14.65	14.72	16	0
20	16QAM	50	24	14.61	14.59	14.52		
20	16QAM	50	50	14.57	14.49	14.60		
20	16QAM	100	0	14.62	14.51	14.46		
20	64QAM	1	0	14.54	14.59	14.30	16	0
20	64QAM	1	49	14.63	14.46	14.42		
20	64QAM	1	99	14.64	14.51	14.77		
20	64QAM	50	0	14.66	14.62	14.74	16	0
20	64QAM	50	24	14.61	14.55	14.51		
20	64QAM	50	50	14.65	14.52	14.68		
20	64QAM	100	0	15.15	15.02	15.18		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	14.96	15.00	14.98	16	0
15	QPSK	1	37	15.05	15.13	14.75		
15	QPSK	1	74	14.88	14.97	14.69		
15	QPSK	36	0	15.10	15.12	14.85	16	0
15	QPSK	36	20	15.23	15.17	14.88		
15	QPSK	36	39	15.05	15.10	14.73		
15	QPSK	75	0	15.08	15.11	14.65		
15	16QAM	1	0	15.01	14.97	14.68	16	0
15	16QAM	1	37	14.79	14.87	14.59		
15	16QAM	1	74	14.72	14.86	14.52		
15	16QAM	36	0	14.56	14.53	14.32	16	0
15	16QAM	36	20	14.68	14.64	14.39		
15	16QAM	36	39	14.71	14.51	14.25		
15	16QAM	75	0	14.61	14.56	14.18		
15	64QAM	1	0	14.68	14.90	14.88	16	0
15	64QAM	1	37	14.80	14.78	14.66		
15	64QAM	1	74	14.81	14.67	14.40		
15	64QAM	36	0	14.61	14.56	14.51	16	0
15	64QAM	36	20	14.56	14.62	14.61		
15	64QAM	36	39	14.62	14.64	14.26		
15	64QAM	75	0	14.59	14.63	14.41		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	15.03	14.82	14.96	16	0
10	QPSK	1	25	15.12	15.12	14.65		
10	QPSK	1	49	14.67	14.67	14.66		
10	QPSK	25	0	15.19	15.14	14.82	16	0
10	QPSK	25	12	15.22	15.29	14.89		
10	QPSK	25	25	15.09	15.11	14.83		
10	QPSK	50	0	15.20	15.18	14.83		
10	16QAM	1	0	15.05	15.02	14.56	16	0
10	16QAM	1	25	14.75	14.73	14.55		
10	16QAM	1	49	14.85	14.58	14.39		
10	16QAM	25	0	14.72	14.84	14.41	16	0
10	16QAM	25	12	14.76	14.63	14.36		
10	16QAM	25	25	14.68	14.60	14.35		
10	16QAM	50	0	14.69	14.62	14.66		
10	64QAM	1	0	14.96	15.11	14.67	16	0
10	64QAM	1	25	14.63	14.61	14.63		
10	64QAM	1	49	14.62	14.53	14.33		
10	64QAM	25	0	14.55	14.56	14.46	16	0
10	64QAM	25	12	14.68	14.56	14.39		
10	64QAM	25	25	14.66	14.57	14.22		
10	64QAM	50	0	15.16	15.07	14.72		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	15.22	15.11	15.03	16	0
5	QPSK	1	12	15.27	15.10	15.01		
5	QPSK	1	24	15.11	15.03	14.85		
5	QPSK	12	0	15.37	15.20	15.05	16	0
5	QPSK	12	7	15.34	15.30	15.10		
5	QPSK	12	13	15.31	15.24	15.07		
5	QPSK	25	0	15.33	15.22	15.12		
5	16QAM	1	0	15.15	14.87	14.80	16	0
5	16QAM	1	12	15.03	15.00	14.66		
5	16QAM	1	24	15.08	14.92	14.69		
5	16QAM	12	0	14.86	14.85	14.61	16	0
5	16QAM	12	7	14.86	14.82	14.63		
5	16QAM	12	13	14.85	14.76	14.60		
5	16QAM	25	0	14.86	14.73	14.63		
5	64QAM	1	0	15.01	14.97	14.70	16	0
5	64QAM	1	12	15.14	14.97	14.86		
5	64QAM	1	24	14.94	14.79	14.65		
5	64QAM	12	0	14.75	14.84	14.64	16	0
5	64QAM	12	7	14.95	14.85	14.66		
5	64QAM	12	13	14.84	14.82	14.51		
5	64QAM	25	0	14.89	14.79	14.54		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	15.29	15.11	15.03	16	0
3	QPSK	1	8	15.36	15.36	15.01		
3	QPSK	1	14	15.21	15.19	14.87		
3	QPSK	8	0	15.44	15.32	15.02	16	0
3	QPSK	8	4	15.44	15.28	15.05		
3	QPSK	8	7	15.34	15.24	15.07		
3	QPSK	15	0	15.39	15.33	15.04		
3	16QAM	1	0	15.23	15.13	14.85	16	0
3	16QAM	1	8	15.11	15.24	14.85		
3	16QAM	1	14	14.96	15.04	14.79		
3	16QAM	8	0	14.96	14.90	14.59	16	0
3	16QAM	8	4	15.00	14.84	14.62		
3	16QAM	8	7	14.91	14.81	14.51		
3	16QAM	15	0	14.95	14.77	14.56		
3	64QAM	1	0	14.95	14.79	14.71	16	0
3	64QAM	1	8	14.85	14.99	14.81		
3	64QAM	1	14	14.79	14.65	14.74		
3	64QAM	8	0	15.08	14.63	14.71	16	0
3	64QAM	8	4	14.99	14.66	14.63		
3	64QAM	8	7	15.01	14.64	14.58		
3	64QAM	15	0	14.90	14.66	14.47		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	15.17	15.16	14.86	16	0
1.4	QPSK	1	3	15.23	15.15	14.82		
1.4	QPSK	1	5	15.15	15.04	14.85		
1.4	QPSK	3	0	15.19	15.08	14.90		
1.4	QPSK	3	1	15.22	15.24	14.94		
1.4	QPSK	3	3	15.20	15.12	14.86		
1.4	QPSK	6	0	15.20	15.14	14.96	16	0
1.4	16QAM	1	0	15.03	14.83	14.65	16	0
1.4	16QAM	1	3	14.99	14.89	14.62		
1.4	16QAM	1	5	15.09	14.83	14.63		
1.4	16QAM	3	0	14.74	14.64	14.44		
1.4	16QAM	3	1	14.83	14.71	14.54		
1.4	16QAM	3	3	14.83	14.62	14.42		
1.4	16QAM	6	0	14.84	14.75	14.49	16	0
1.4	64QAM	1	0	14.82	14.87	14.64	16	0
1.4	64QAM	1	3	14.63	15.01	14.54		
1.4	64QAM	1	5	14.90	14.82	14.52		
1.4	64QAM	3	0	14.86	14.58	14.51		
1.4	64QAM	3	1	14.85	14.85	14.54		
1.4	64QAM	3	3	14.91	14.71	14.44		
1.4	64QAM	6	0	14.82	14.62	14.40	16	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	15.59	15.46	15.49	17	0
20	QPSK	1	49	15.73	15.42	15.46		
20	QPSK	1	99	15.63	15.36	15.29		
20	QPSK	50	0	15.86	15.54	15.46	17	0
20	QPSK	50	24	15.90	15.67	15.45		
20	QPSK	50	50	15.61	15.51	15.42		
20	QPSK	100	0	15.74	15.54	15.32		
20	16QAM	1	0	16.06	15.75	15.65	17	0
20	16QAM	1	49	16.14	15.71	15.69		
20	16QAM	1	99	15.85	15.70	15.64		
20	16QAM	50	0	15.85	15.56	15.36	17	0
20	16QAM	50	24	15.85	15.70	15.46		
20	16QAM	50	50	15.72	15.51	15.38		
20	16QAM	100	0	15.64	15.55	15.32		
20	64QAM	1	0	15.65	15.66	15.47	17	0
20	64QAM	1	49	15.66	15.54	15.42		
20	64QAM	1	99	15.64	15.46	15.30		
20	64QAM	50	0	15.63	15.44	15.44	17	0
20	64QAM	50	24	15.91	15.65	15.52		
20	64QAM	50	50	15.71	15.63	15.48		
20	64QAM	100	0	15.79	15.52	15.36		
Channel				20025	20175	20329	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	15.52	15.53	15.27	17	0
15	QPSK	1	37	15.44	15.41	15.32		
15	QPSK	1	74	15.19	15.19	15.07		
15	QPSK	36	0	15.57	15.61	15.34	17	0
15	QPSK	36	20	15.62	15.66	15.37		
15	QPSK	36	39	15.50	15.53	15.26		
15	QPSK	75	0	15.51	15.55	15.35		
15	16QAM	1	0	15.60	15.62	15.56	17	0
15	16QAM	1	37	15.75	15.75	15.63		
15	16QAM	1	74	15.43	15.31	15.27		
15	16QAM	36	0	15.49	15.62	15.22	17	0
15	16QAM	36	20	15.56	15.46	15.31		
15	16QAM	36	39	15.41	15.33	15.15		
15	16QAM	75	0	15.53	15.56	15.28		
15	64QAM	1	0	15.63	15.51	15.34	17	0
15	64QAM	1	37	15.54	15.52	15.49		
15	64QAM	1	74	15.42	15.48	15.41		
15	64QAM	36	0	15.45	15.58	15.30	17	0
15	64QAM	36	20	15.63	15.59	15.28		
15	64QAM	36	39	15.28	15.44	15.18		
15	64QAM	75	0	15.44	15.52	15.30		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	15.61	15.29	15.28	17	0
10	QPSK	1	25	15.71	15.47	15.41		
10	QPSK	1	49	15.70	15.51	15.22		
10	QPSK	25	0	15.88	15.53	15.47	17	0
10	QPSK	25	12	15.86	15.66	15.66		
10	QPSK	25	25	15.76	15.51	15.55		
10	QPSK	50	0	15.82	15.51	15.44		
10	16QAM	1	0	16.05	15.77	15.74	17	0
10	16QAM	1	25	16.19	15.89	15.88		
10	16QAM	1	49	15.79	15.72	15.74		
10	16QAM	25	0	15.82	15.58	15.46	17	0
10	16QAM	25	12	15.88	15.57	15.51		
10	16QAM	25	25	15.78	15.51	15.47		
10	16QAM	50	0	15.75	15.43	15.37		
10	64QAM	1	0	15.83	15.68	15.75	17	0
10	64QAM	1	25	16.13	15.78	15.79		
10	64QAM	1	49	15.73	15.66	15.76		
10	64QAM	25	0	15.73	15.51	15.50	17	0
10	64QAM	25	12	15.76	15.53	15.52		
10	64QAM	25	25	15.89	15.50	15.39		
10	64QAM	50	0	15.62	15.43	15.26		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	15.82	15.57	15.52	17	0
5	QPSK	1	12	15.93	15.56	15.61		
5	QPSK	1	24	15.85	15.51	15.57		
5	QPSK	12	0	15.98	15.56	15.57	17	0
5	QPSK	12	7	16.02	15.64	15.71		
5	QPSK	12	13	15.99	15.59	15.66		
5	QPSK	25	0	15.92	15.62	15.61		
5	16QAM	1	0	16.08	15.99	15.81	17	0
5	16QAM	1	12	16.28	15.85	15.89		
5	16QAM	1	24	16.08	15.81	15.79		
5	16QAM	12	0	16.01	15.69	15.74	17	0
5	16QAM	12	7	16.05	15.64	15.74		
5	16QAM	12	13	16.00	15.66	15.63		
5	16QAM	25	0	16.07	15.60	15.60		
5	64QAM	1	0	16.37	15.91	15.98	17	0
5	64QAM	1	12	16.22	16.00	16.01		
5	64QAM	1	24	16.16	15.88	15.90		
5	64QAM	12	0	16.05	15.67	15.76	17	0
5	64QAM	12	7	15.86	15.63	15.73		
5	64QAM	12	13	15.94	15.55	15.63		
5	64QAM	25	0	16.05	15.59	15.61		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	15.96	15.69	15.54	17	0
3	QPSK	1	8	15.95	15.63	15.65		
3	QPSK	1	14	15.85	15.50	15.56		
3	QPSK	8	0	15.98	15.60	15.58	17	0
3	QPSK	8	4	16.07	15.58	15.61		
3	QPSK	8	7	15.93	15.59	15.61		
3	QPSK	15	0	16.02	15.57	15.54		
3	16QAM	1	0	16.35	15.93	15.92	17	0
3	16QAM	1	8	16.41	16.05	15.98		
3	16QAM	1	14	16.35	15.99	15.94		
3	16QAM	8	0	16.11	15.68	15.66	17	0
3	16QAM	8	4	16.13	15.66	15.67		
3	16QAM	8	7	16.14	15.64	15.66		
3	16QAM	15	0	16.07	15.67	15.65		
3	64QAM	1	0	16.36	15.93	16.01	17	0
3	64QAM	1	8	15.91	15.96	15.86		
3	64QAM	1	14	16.12	15.89	15.91		
3	64QAM	8	0	15.90	15.50	15.52	17	0
3	64QAM	8	4	15.88	15.61	15.64		
3	64QAM	8	7	15.93	15.51	15.53		
3	64QAM	15	0	15.94	15.58	15.53		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	15.82	15.42	15.49	17	0
1.4	QPSK	1	3	15.90	15.47	15.48		
1.4	QPSK	1	5	15.83	15.44	15.42		
1.4	QPSK	3	0	15.83	15.44	15.44		
1.4	QPSK	3	1	15.87	15.48	15.46		
1.4	QPSK	3	3	15.85	15.43	15.48		
1.4	QPSK	6	0	15.86	15.48	15.43	17	0
1.4	16QAM	1	0	16.23	15.89	15.88	17	0
1.4	16QAM	1	3	16.32	15.95	15.84		
1.4	16QAM	1	5	16.13	15.99	15.82		
1.4	16QAM	3	0	15.98	15.62	15.52		
1.4	16QAM	3	1	15.99	15.59	15.57		
1.4	16QAM	3	3	15.92	15.53	15.51		
1.4	16QAM	6	0	15.99	15.62	15.61	17	0
1.4	64QAM	1	0	16.15	15.83	15.70	17	0
1.4	64QAM	1	3	15.96	15.82	15.69		
1.4	64QAM	1	5	15.88	15.76	15.66		
1.4	64QAM	3	0	15.86	15.59	15.54		
1.4	64QAM	3	1	15.87	15.79	15.62		
1.4	64QAM	3	3	16.01	15.68	15.53		
1.4	64QAM	6	0	15.96	15.73	15.53	17	0

Band 6 (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	22.33	22.26	22.09	23	0
10	QPSK	1	25	22.27	22.14	21.95		
10	QPSK	1	49	22.25	22.12	21.83		
10	QPSK	25	0	21.74	21.57	21.46	23	0
10	QPSK	25	12	21.74	21.53	21.44		
10	QPSK	25	25	21.68	21.48	21.27		
10	QPSK	50	0	21.64	21.50	21.34		
10	16QAM	1	0	21.99	21.91	21.77	23	0
10	16QAM	1	25	21.95	21.87	21.63		
10	16QAM	1	49	21.93	21.75	21.51		
10	16QAM	25	0	20.90	20.79	20.68	22	1
10	16QAM	25	12	20.96	20.75	20.64		
10	16QAM	25	25	20.87	20.69	20.48		
10	16QAM	50	0	20.82	20.67	20.55		
10	64QAM	1	0	21.40	21.30	21.19	22	1
10	64QAM	1	25	21.30	21.28	21.14		
10	64QAM	1	49	21.21	21.12	21.01		
10	64QAM	25	0	20.33	20.24	20.18	21	2
10	64QAM	25	12	20.31	20.24	20.27		
10	64QAM	25	25	20.32	20.21	20.10		
10	64QAM	50	0	20.33	20.19	20.11		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	22.29	22.13	21.92	23	0
5	QPSK	1	12	22.19	22.23	21.91		
5	QPSK	1	24	22.25	22.08	21.92		
5	QPSK	12	0	21.72	21.56	21.32	23	0
5	QPSK	12	7	21.75	21.61	21.35		
5	QPSK	12	13	21.70	21.54	21.28		
5	QPSK	25	0	21.72	21.53	21.29		
5	16QAM	1	0	21.95	21.78	21.60	23	0
5	16QAM	1	12	21.94	21.88	21.55		
5	16QAM	1	24	21.90	21.71	21.50		
5	16QAM	12	0	20.94	20.81	20.53	22	1
5	16QAM	12	7	20.98	20.56	20.55		
5	16QAM	12	13	20.91	20.75	20.50		
5	16QAM	25	0	20.96	20.76	20.50		
5	64QAM	1	0	21.40	21.23	21.01	22	1
5	64QAM	1	12	21.42	21.26	20.98		
5	64QAM	1	24	21.32	21.13	20.95		
5	64QAM	12	0	20.43	20.23	19.99	21	2
5	64QAM	12	7	20.46	20.32	20.00		
5	64QAM	12	13	20.40	20.24	19.96		
5	64QAM	25	0	20.43	20.26	20.00		
Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	22.31	22.16	21.96	23	0
3	QPSK	1	8	22.11	22.26	21.93		
3	QPSK	1	14	22.30	22.14	21.93		
3	QPSK	8	0	21.74	21.56	21.34	23	0
3	QPSK	8	4	21.80	21.58	21.31		
3	QPSK	8	7	21.71	21.55	21.36		
3	QPSK	15	0	21.73	21.54	21.29		
3	16QAM	1	0	21.99	21.79	21.55	23	0
3	16QAM	1	8	22.03	21.90	21.58		
3	16QAM	1	14	21.94	21.78	21.59		
3	16QAM	8	0	20.97	20.81	20.58	22	1
3	16QAM	8	4	21.03	20.85	20.56		
3	16QAM	8	7	20.99	20.82	20.53		
3	16QAM	15	0	20.98	20.79	20.51		
3	64QAM	1	0	21.39	21.16	21.02	22	1
3	64QAM	1	8	21.44	21.29	21.01		
3	64QAM	1	14	21.33	21.12	20.99		
3	64QAM	8	0	20.46	20.27	20.01	21	2
3	64QAM	8	4	20.47	20.33	20.05		
3	64QAM	8	7	20.46	20.28	20.01		
3	64QAM	15	0	20.46	20.26	20.00		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	22.28	22.14	21.86	23	0
1.4	QPSK	1	3	22.29	22.22	21.91		
1.4	QPSK	1	5	22.27	22.06	21.84		
1.4	QPSK	3	0	22.27	22.18	21.81		
1.4	QPSK	3	1	22.31	22.24	21.84		
1.4	QPSK	3	3	22.28	22.13	21.81		
1.4	QPSK	6	0	21.68	21.49	21.18	23	0
1.4	16QAM	1	0	21.89	21.75	21.43	23	0
1.4	16QAM	1	3	21.92	21.85	21.46		
1.4	16QAM	1	5	21.84	21.69	21.45		
1.4	16QAM	3	0	21.67	21.58	21.26		
1.4	16QAM	3	1	21.75	21.64	21.26		
1.4	16QAM	3	3	21.67	21.51	21.25		
1.4	16QAM	6	0	20.97	20.78	20.56	22	1
1.4	64QAM	1	0	21.30	21.16	20.92	22	1
1.4	64QAM	1	3	21.36	21.21	20.86		
1.4	64QAM	1	5	21.31	21.11	20.88		
1.4	64QAM	3	0	21.20	21.09	20.82		
1.4	64QAM	3	1	21.27	21.14	20.86		
1.4	64QAM	3	3	21.20	21.01	20.79		
1.4	64QAM	6	0	20.36	20.19	19.88	21	2

SPORTON LAB.

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	13.16	13.17	13.07	14	0
20	QPSK	1	49	13.09	13.05	12.99		
20	QPSK	1	99	13.07	13.01	12.98		
20	QPSK	50	0	13.07	13.24	13.23	14	0
20	QPSK	50	24	13.23	13.23	13.22		
20	QPSK	50	50	13.13	13.15	13.12		
20	QPSK	100	0	13.06	13.13	13.09		
20	16QAM	1	0	13.47	13.41	13.36	14	0
20	16QAM	1	49	13.53	13.48	13.52		
20	16QAM	1	99	13.31	13.39	13.47		
20	16QAM	50	0	13.21	13.24	13.22	14	0
20	16QAM	50	24	13.17	13.17	13.19		
20	16QAM	50	50	13.18	13.21	13.12		
20	16QAM	100	0	13.03	13.06	13.14		
20	64QAM	1	0	13.47	13.40	13.39	14	0
20	64QAM	1	49	13.27	13.25	13.25		
20	64QAM	1	99	13.25	13.18	13.13		
20	64QAM	50	0	13.28	13.22	13.25	14	0
20	64QAM	50	24	13.24	13.18	13.24		
20	64QAM	50	50	13.11	13.19	13.13		
20	64QAM	100	0	13.13	13.15	13.12		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	13.17	13.19	13.12	14	0
15	QPSK	1	37	13.18	13.01	13.05		
15	QPSK	1	74	13.11	13.04	13.01		
15	QPSK	36	0	13.28	13.22	13.27	14	0
15	QPSK	36	20	13.27	13.21	13.19		
15	QPSK	36	39	13.18	13.17	13.14		
15	QPSK	75	0	13.23	13.16	13.16		
15	16QAM	1	0	13.53	13.50	13.45	14	0
15	16QAM	1	37	13.44	13.49	13.36		
15	16QAM	1	74	13.39	13.38	13.23		
15	16QAM	36	0	13.31	13.24	13.24	14	0
15	16QAM	36	20	13.30	13.17	13.24		
15	16QAM	36	39	13.25	13.20	13.18		
15	16QAM	75	0	13.28	13.11	13.11		
15	64QAM	1	0	13.50	13.37	13.34	14	0
15	64QAM	1	37	13.36	13.37	13.26		
15	64QAM	1	74	13.26	13.29	13.19		
15	64QAM	36	0	13.39	13.30	13.25	14	0
15	64QAM	36	20	13.36	13.30	13.28		
15	64QAM	36	39	13.27	13.23	13.14		
15	64QAM	75	0	13.28	13.11	13.10		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	13.25	13.21	13.02	14	0
10	QPSK	1	25	13.23	13.12	13.13		
10	QPSK	1	49	13.14	13.07	13.02		
10	QPSK	25	0	13.29	13.25	13.22	14	0
10	QPSK	25	12	13.28	13.22	13.25		
10	QPSK	25	25	13.28	13.15	13.16		
10	QPSK	50	0	13.25	13.14	13.06		
10	16QAM	1	0	13.70	13.53	13.53	14	0
10	16QAM	1	25	13.54	13.58	13.44		
10	16QAM	1	49	13.52	13.63	13.59		
10	16QAM	25	0	13.36	13.21	13.20	14	0
10	16QAM	25	12	13.35	13.18	13.23		
10	16QAM	25	25	13.24	13.20	13.22		
10	16QAM	50	0	13.21	13.07	13.12		
10	64QAM	1	0	13.63	13.34	13.39	14	0
10	64QAM	1	25	13.60	13.43	13.34		
10	64QAM	1	49	13.32	13.33	13.41		
10	64QAM	25	0	13.38	13.22	13.20	14	0
10	64QAM	25	12	13.34	13.21	13.27		
10	64QAM	25	25	13.30	13.26	13.16		
10	64QAM	50	0	13.15	13.04	13.16		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	13.27	13.18	13.16	14	0
5	QPSK	1	12	13.29	13.24	13.06		
5	QPSK	1	24	13.33	13.16	13.12		
5	QPSK	12	0	13.34	13.17	13.13	14	0
5	QPSK	12	7	13.41	13.33	13.25		
5	QPSK	12	13	13.31	13.14	13.21		
5	QPSK	25	0	13.35	13.19	13.16		
5	16QAM	1	0	13.74	13.61	13.46	14	0
5	16QAM	1	12	13.69	13.55	13.57		
5	16QAM	1	24	13.59	13.56	13.48		
5	16QAM	12	0	13.36	13.22	13.18	14	0
5	16QAM	12	7	13.45	13.27	13.19		
5	16QAM	12	13	13.36	13.20	13.15		
5	16QAM	25	0	13.36	13.14	13.22		
5	64QAM	1	0	13.59	13.38	13.50	14	0
5	64QAM	1	12	13.55	13.43	13.39		
5	64QAM	1	24	13.52	13.33	13.34		
5	64QAM	12	0	13.33	13.26	13.24	14	0
5	64QAM	12	7	13.42	13.33	13.31		
5	64QAM	12	13	13.38	13.30	13.24		
5	64QAM	25	0	13.39	13.18	13.20		

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	22.40	22.29	22.10	23	0
15	QPSK	1	37	22.29	22.21	21.96		
15	QPSK	1	74	22.22	22.07	22.03		
15	QPSK	36	0	21.60	21.54	21.38	23	0
15	QPSK	36	20	21.55	21.59	21.40		
15	QPSK	36	39	21.53	21.46	21.30		
15	QPSK	75	0	21.64	21.51	21.33		
15	16QAM	1	0	22.01	21.91	21.73	23	0
15	16QAM	1	37	21.90	21.86	21.61		
15	16QAM	1	74	21.82	21.66	21.55		
15	16QAM	36	0	20.81	20.71	20.59	22	1
15	16QAM	36	20	20.92	20.78	20.59		
15	16QAM	36	39	20.83	20.67	20.59		
15	16QAM	75	0	20.88	20.72	20.56		
15	64QAM	1	0	21.42	21.32	21.09	22	1
15	64QAM	1	37	21.25	21.26	20.94		
15	64QAM	1	74	21.23	21.03	20.93		
15	64QAM	36	0	20.34	20.24	20.10	21	2
15	64QAM	36	20	20.41	20.28	20.09		
15	64QAM	36	39	20.33	20.15	19.95		
15	64QAM	75	0	20.36	20.21	20.06		
Channel				26740	26865	26990	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				819	831.5	844		
10	QPSK	1	0	22.51	22.32	22.10	23	0
10	QPSK	1	25	22.39	22.27	22.13		
10	QPSK	1	49	22.40	22.15	22.10		
10	QPSK	25	0	21.74	21.56	21.32	23	0
10	QPSK	25	12	21.82	21.67	21.40		
10	QPSK	25	25	21.73	21.55	21.32		
10	QPSK	50	0	21.74	21.55	21.32		
10	16QAM	1	0	22.15	22.00	21.73	23	0
10	16QAM	1	25	22.05	21.95	21.71		
10	16QAM	1	49	21.99	21.83	21.73		
10	16QAM	25	0	20.96	20.79	20.59	22	1
10	16QAM	25	12	21.07	20.85	20.63		
10	16QAM	25	25	20.93	20.71	20.58		
10	16QAM	50	0	20.97	20.74	20.50		
10	64QAM	1	0	21.69	21.50	21.22	22	1
10	64QAM	1	25	21.54	21.45	21.23		
10	64QAM	1	49	21.51	21.34	21.24		
10	64QAM	25	0	20.48	20.21	20.13	21	2
10	64QAM	25	12	20.58	20.39	20.11		
10	64QAM	25	25	20.46	20.25	20.15		
10	64QAM	50	0	20.44	20.26	20.04		
Channel				26715	26865	27015	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				816.5	831.5	846.5		
5	QPSK	1	0	22.46	22.28	22.00	23	0
5	QPSK	1	12	22.49	22.33	21.99		
5	QPSK	1	24	22.43	22.25	22.01		
5	QPSK	12	0	21.89	21.67	21.44	23	0
5	QPSK	12	7	21.92	21.70	21.46		
5	QPSK	12	13	21.87	21.62	21.44		
5	QPSK	25	0	21.87	21.64	21.67		
5	16QAM	1	0	22.09	21.97	21.64	23	0
5	16QAM	1	12	22.14	21.98	21.70		
5	16QAM	1	24	22.05	21.85	21.73		
5	16QAM	12	0	21.11	20.87	20.89	22	1
5	16QAM	12	7	21.13	20.90	20.87		
5	16QAM	12	13	21.09	20.87	20.89		
5	16QAM	25	0	21.10	20.87	20.88		
5	64QAM	1	0	21.49	21.36	21.35	22	1
5	64QAM	1	12	21.61	21.47	21.39		
5	64QAM	1	24	21.48	21.31	21.30		
5	64QAM	12	0	20.60	20.36	20.16	21	2
5	64QAM	12	7	20.62	20.37	20.27		
5	64QAM	12	13	20.56	20.36	20.35		
5	64QAM	25	0	20.57	20.36	20.21		
Channel				26705	26865	27025	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				815.5	831.5	847.5		
3	QPSK	1	0	22.49	22.32	22.20	23	0
3	QPSK	1	8	22.59	22.38	22.09		
3	QPSK	1	14	22.46	22.27	22.12		
3	QPSK	8	0	21.90	21.66	21.56	23	0
3	QPSK	8	4	21.96	21.74	21.53		
3	QPSK	8	7	21.92	21.67	21.66		
3	QPSK	15	0	21.92	21.66	21.67		
3	16QAM	1	0	22.13	21.93	21.94	23	0
3	16QAM	1	8	22.20	22.02	22.08		
3	16QAM	1	14	22.11	21.92	21.93		
3	16QAM	8	0	21.16	20.94	20.96	22	1
3	16QAM	8	4	21.20	20.99	21.01		
3	16QAM	8	7	21.18	20.93	20.96		
3	16QAM	15	0	21.15	20.90	20.95		
3	64QAM	1	0	21.56	21.34	21.46	22	1
3	64QAM	1	8	21.63	21.46	21.47		
3	64QAM	1	14	21.54	21.29	21.32		
3	64QAM	8	0	20.64	20.39	20.41	21	2
3	64QAM	8	4	20.64	20.44	20.45		
3	64QAM	8	7	20.60	20.37	20.39		
3	64QAM	15	0	20.63	20.36	20.37		
Channel				26697	26865	27033	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				814.7	831.5	848.3		
1.4	QPSK	1	0	22.48	22.24	22.02	23	0
1.4	QPSK	1	3	22.51	22.32	22.13		
1.4	QPSK	1	5	22.45	22.25	22.15		
1.4	QPSK	3	0	22.46	22.29	22.17		
1.4	QPSK	3	1	22.53	22.33	22.16		
1.4	QPSK	3	3	22.50	22.27	22.17		
1.4	QPSK	6	0	21.85	21.68	21.70	23	0
1.4	16QAM	1	0	22.05	21.88	21.89	23	0
1.4	16QAM	1	3	22.12	21.95	21.96		
1.4	16QAM	1	5	22.04	21.89	21.92		
1.4	16QAM	3	0	21.90	21.69	21.73		
1.4	16QAM	3	1	21.93	21.75	21.77		
1.4	16QAM	3	3	21.88	21.67	21.79		
1.4	16QAM	6	0	21.15	20.93	20.97	22	1
1.4	64QAM	1	0	21.53	21.32	21.39	22	1
1.4	64QAM	1	3	21.58	21.33	21.37		
1.4	64QAM	1	5	21.51	21.31	21.36		
1.4	64QAM	3	0	21.39	21.20	21.23		
1.4	64QAM	3	1	21.47	21.24	21.24		
1.4	64QAM	3	3	21.40	21.18	21.30		
1.4	64QAM	6	0	20.55	20.35	20.39	21	2

Band 66

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				132072	132322	132572		
Frequency (MHz)				1720	1745	1770		
20	QPSK	1	0	16.35	16.43	16.21	17	0
20	QPSK	1	49	16.41	16.35	16.23		
20	QPSK	1	99	16.36	16.32	16.42		
20	QPSK	50	0	16.41	16.55	16.37	17	0
20	QPSK	50	24	16.42	16.48	16.47		
20	QPSK	50	50	16.47	16.51	16.44		
20	QPSK	100	0	16.50	16.55	16.38		
20	16QAM	1	0	16.08	16.07	16.08	17	0
20	16QAM	1	49	16.57	16.36	16.26		
20	16QAM	1	99	16.36	16.16	16.32		
20	16QAM	50	0	16.15	15.87	15.80	17	0
20	16QAM	50	24	16.26	16.20	15.79		
20	16QAM	50	50	16.11	16.09	15.86		
20	16QAM	100	0	16.11	15.62	15.79		
20	64QAM	1	0	15.97	15.69	16.13	17	0
20	64QAM	1	49	15.99	15.67	15.89		
20	64QAM	1	99	16.05	15.77	15.74		
20	64QAM	50	0	16.21	15.84	15.85	17	0
20	64QAM	50	24	16.31	15.83	15.89		
20	64QAM	50	50	16.07	15.84	15.92		
20	64QAM	100	0	16.19	15.85	15.91		
Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	QPSK	1	0	16.43	16.03	16.27	17	0
15	QPSK	1	37	16.44	16.01	16.14		
15	QPSK	1	74	16.25	16.38	16.16		
15	QPSK	36	0	16.51	16.26	16.09	17	0
15	QPSK	36	20	16.50	16.30	16.03		
15	QPSK	36	39	16.43	16.30	16.02		
15	QPSK	75	0	16.46	16.08	16.09		
15	16QAM	1	0	16.59	16.19	16.39	17	0
15	16QAM	1	37	16.56	16.21	16.17		
15	16QAM	1	74	16.63	16.25	16.35		
15	16QAM	36	0	16.43	16.04	16.11	17	0
15	16QAM	36	20	16.41	16.30	16.00		
15	16QAM	36	39	16.34	16.19	15.99		
15	16QAM	75	0	16.37	15.87	16.04		
15	64QAM	1	0	16.35	15.95	15.97	17	0
15	64QAM	1	37	16.41	15.96	16.06		
15	64QAM	1	74	16.44	15.94	16.09		
15	64QAM	36	0	16.45	16.39	16.37	17	0
15	64QAM	36	20	16.47	16.35	16.30		
15	64QAM	36	39	16.79	16.32	16.29		
15	64QAM	75	0	16.01	15.71	15.63		
Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	QPSK	1	0	16.27	16.13	16.00	17	0
10	QPSK	1	25	16.44	16.04	16.04		
10	QPSK	1	49	16.06	16.19	16.05		
10	QPSK	25	0	16.22	15.95	15.98	17	0
10	QPSK	25	12	16.42	16.03	16.12		
10	QPSK	25	25	16.24	16.06	16.02		
10	QPSK	50	0	16.24	15.85	15.79		
10	16QAM	1	0	16.38	16.33	16.29	17	0
10	16QAM	1	25	16.74	16.35	16.42		
10	16QAM	1	49	16.45	16.29	16.26		
10	16QAM	25	0	16.15	15.94	15.89	17	0
10	16QAM	25	12	16.36	15.98	15.91		
10	16QAM	25	25	16.15	15.87	15.88		
10	16QAM	50	0	16.18	15.78	15.71		
10	64QAM	1	0	16.10	15.61	15.63	17	0
10	64QAM	1	25	16.03	15.66	15.61		
10	64QAM	1	49	16.05	15.71	15.60		
10	64QAM	25	0	16.09	15.62	15.72	17	0
10	64QAM	25	12	16.05	15.75	15.80		
10	64QAM	25	25	16.09	15.76	15.85		
10	64QAM	50	0	16.35	15.94	15.85		
Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	16.36	16.11	16.21	17	0
5	QPSK	1	12	16.46	16.15	16.11		
5	QPSK	1	24	16.32	16.16	16.04		
5	QPSK	12	0	16.48	16.15	16.07	17	0
5	QPSK	12	7	16.54	16.32	16.12		
5	QPSK	12	13	16.47	16.30	16.04		
5	QPSK	25	0	16.45	16.22	16.04		
5	16QAM	1	0	16.53	16.18	16.29	17	0
5	16QAM	1	12	16.62	16.42	16.28		
5	16QAM	1	24	16.60	16.34	16.17		
5	16QAM	12	0	16.43	16.17	16.12	17	0
5	16QAM	12	7	16.51	16.36	16.17		
5	16QAM	12	13	16.44	16.33	16.11		
5	16QAM	25	0	16.44	16.22	16.09		
5	64QAM	1	0	16.41	16.37	16.20	17	0
5	64QAM	1	12	16.62	16.40	16.25		
5	64QAM	1	24	16.48	16.38	16.21		
5	64QAM	12	0	16.60	16.35	16.14	17	0
5	64QAM	12	7	16.42	16.33	16.21		
5	64QAM	12	13	16.46	16.16	16.22		
5	64QAM	25	0	16.43	16.05	15.95		
Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	16.50	16.24	16.14	17	0
3	QPSK	1	8	16.60	16.52	16.26		
3	QPSK	1	14	16.47	16.44	16.11		
3	QPSK	8	0	16.57	16.41	16.24	17	0
3	QPSK	8	4	16.61	16.53	16.29		
3	QPSK	8	7	16.56	16.50	16.24		
3	QPSK	15	0	16.56	16.44	16.24		
3	16QAM	1	0	16.65	16.47	16.35	17	0
3	16QAM	1	8	16.77	16.52	16.46		
3	16QAM	1	14	16.64	16.51	16.43		
3	16QAM	8	0	16.58	16.28	16.12	17	0
3	16QAM	8	4	16.62	16.38	16.20		
3	16QAM	8	7	16.58	16.39	16.12		
3	16QAM	15	0	16.55	16.29	16.08		
3	64QAM	1	0	16.61	16.23	16.32	17	0
3	64QAM	1	8	16.70	16.22	16.39		
3	64QAM	1	14	16.60	16.21	16.41		
3	64QAM	8	0	16.59	16.33	16.15	17	0
3	64QAM	8	4	16.54	16.13	16.19		
3	64QAM	8	7	16.54	16.15	16.37		
3	64QAM	15	0	16.52	16.33	16.13		
Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	16.50	16.25	16.12	17	0
1.4	QPSK	1	3	16.58	16.35	16.17		
1.4	QPSK	1	5	16.52	16.34	16.09		
1.4	QPSK	3	0	16.53	16.30	16.14		
1.4	QPSK	3	1	16.56	16.35	16.08		
1.4	QPSK	3	3	16.53	16.35	16.09		
1.4	QPSK	6	0	16.56	16.36	16.07	17	0
1.4	16QAM	1	0	16.73	16.46	16.40	17	0
1.4	16QAM	1	3	16.78	16.59	16.31		
1.4	16QAM	1	5	16.74	16.58	16.30		
1.4	16QAM	3	0	16.52	16.27	16.04		
1.4	16QAM	3	1	16.50	16.42	16.15		
1.4	16QAM	3	3	16.49	16.35	16.03		
1.4	16QAM	6	0	16.61	16.47	16.23	17	0
1.4	64QAM	1	0	16.64	16.52	16.37	17	0
1.4	64QAM	1	3	16.68	16.60	16.25		
1.4	64QAM	1	5	16.61	16.51	16.32		
1.4	64QAM	3	0	16.59	16.48	16.27		
1.4	64QAM	3	1	16.54	16.33	16.31		
1.4	64QAM	3	3	16.66	16.55	16.23		
1.4	64QAM	6	0	16.53	16.43	16.16	17	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	15.86	15.78	15.86	17	0
20	QPSK	1	49	15.80	15.76	15.79		
20	QPSK	1	99	15.73	15.73	15.80		
20	QPSK	50	0	15.70	15.67	15.73	17	0
20	QPSK	50	24	15.86	15.86	15.83		
20	QPSK	50	50	15.72	15.75	15.77		
20	QPSK	100	0	15.79	15.77	15.69		
20	16QAM	1	0	16.02	16.04	15.98	17	0
20	16QAM	1	49	15.94	15.91	15.92		
20	16QAM	1	99	15.86	15.86	15.89		
20	16QAM	50	0	15.73	15.78	15.71	17	0
20	16QAM	50	24	15.88	15.90	15.89		
20	16QAM	50	50	15.78	15.80	15.81		
20	16QAM	100	0	15.76	15.82	15.72		
20	64QAM	1	0	15.59	15.63	15.61	17	0
20	64QAM	1	49	15.51	15.57	15.64		
20	64QAM	1	99	15.49	15.49	15.53		
20	64QAM	50	0	15.74	15.76	15.80	17	0
20	64QAM	50	24	15.87	15.87	15.85		
20	64QAM	50	50	15.74	15.74	15.79		
20	64QAM	100	0	15.75	15.77	15.75		
Channel				37825	38000	38175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2577.5	2595	2612.5		
15	QPSK	1	0	15.78	15.81	15.90	17	0
15	QPSK	1	37	15.77	15.75	15.81		
15	QPSK	1	74	15.66	15.69	15.73		
15	QPSK	36	0	15.77	15.73	15.77	17	0
15	QPSK	36	20	15.85	15.87	15.80		
15	QPSK	36	39	15.74	15.73	15.79		
15	QPSK	75	0	15.77	15.78	15.72		
15	16QAM	1	0	15.98	15.97	16.05	17	0
15	16QAM	1	37	15.93	15.90	15.90		
15	16QAM	1	74	15.93	15.92	15.95		
15	16QAM	36	0	15.74	15.69	15.75	17	0
15	16QAM	36	20	15.83	15.84	15.81		
15	16QAM	36	39	15.75	15.76	15.78		
15	16QAM	75	0	15.80	15.81	15.77		
15	64QAM	1	0	15.58	15.56	15.55	17	0
15	64QAM	1	37	15.48	15.57	15.61		
15	64QAM	1	74	15.44	15.54	15.55		
15	64QAM	36	0	15.80	15.74	15.79	17	0
15	64QAM	36	20	15.89	15.88	15.84		
15	64QAM	36	39	15.75	15.81	15.81		
15	64QAM	75	0	15.81	15.82	15.77		
Channel				37800	38000	38200	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2575	2595	2615		
10	QPSK	1	0	15.39	15.74	15.81	17	0
10	QPSK	1	25	15.73	15.76	15.79		
10	QPSK	1	49	15.42	15.71	15.75		
10	QPSK	25	0	15.78	15.72	15.73	17	0
10	QPSK	25	12	15.83	15.90	15.77		
10	QPSK	25	25	15.80	15.79	15.83		
10	QPSK	50	0	15.77	15.84	15.72		
10	16QAM	1	0	15.61	15.99	16.04	17	0
10	16QAM	1	25	15.90	15.87	15.93		
10	16QAM	1	49	15.54	15.87	15.93		
10	16QAM	25	0	15.79	15.69	15.72	17	0
10	16QAM	25	12	15.91	15.93	15.82		
10	16QAM	25	25	15.72	15.75	15.82		
10	16QAM	50	0	15.80	15.78	15.76		
10	64QAM	1	0	15.27	15.58	15.63	17	0
10	64QAM	1	25	15.56	15.60	15.65		
10	64QAM	1	49	15.19	15.53	15.60		
10	64QAM	25	0	15.79	15.68	15.78	17	0
10	64QAM	25	12	15.86	15.91	15.85		
10	64QAM	25	25	15.75	15.77	15.79		
10	64QAM	50	0	15.77	15.82	15.77		
Channel				37775	38000	38225	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2572.5	2595	2617.5		
5	QPSK	1	0	15.72	15.67	15.78	17	0
5	QPSK	1	12	15.77	15.76	15.81		
5	QPSK	1	24	15.65	15.72	15.71		
5	QPSK	12	0	15.82	15.80	15.88	17	0
5	QPSK	12	7	15.89	15.87	15.94		
5	QPSK	12	13	15.85	15.88	15.88		
5	QPSK	25	0	15.84	15.83	15.91		
5	16QAM	1	0	15.85	15.80	15.87	17	0
5	16QAM	1	12	15.95	16.01	16.03		
5	16QAM	1	24	15.85	15.89	15.94		
5	16QAM	12	0	15.82	15.74	15.86	17	0
5	16QAM	12	7	15.82	15.82	15.87		
5	16QAM	12	13	15.79	15.81	15.80		
5	16QAM	25	0	15.84	15.83	15.89		
5	64QAM	1	0	15.55	15.44	15.52	17	0
5	64QAM	1	12	15.49	15.52	15.57		
5	64QAM	1	24	15.47	15.54	15.59		
5	64QAM	12	0	15.88	15.80	15.90	17	0
5	64QAM	12	7	15.89	15.90	15.96		
5	64QAM	12	13	15.87	15.87	15.91		
5	64QAM	25	0	15.86	15.89	15.93		

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	15.95	15.83	16.12	15.85	15.90	17	0
20	QPSK	1	49	15.92	15.88	15.90	16.11	16.11		
20	QPSK	1	99	15.91	15.81	15.81	15.85	16.03		
20	QPSK	50	0	15.97	15.93	16.21	16.11	16.21	17	0
20	QPSK	50	24	15.93	15.91	15.97	16.02	16.09		
20	QPSK	50	50	15.92	15.90	15.94	16.06	16.03		
20	QPSK	100	0	15.85	15.84	16.09	16.02	16.01		
20	16QAM	1	0	16.09	15.99	15.98	16.01	16.08	17	0
20	16QAM	1	49	15.98	15.95	16.02	16.23	16.40		
20	16QAM	1	99	15.96	15.92	15.90	15.92	16.21		
20	16QAM	50	0	16.00	15.92	15.89	16.06	16.24	17	0
20	16QAM	50	24	15.94	15.91	16.03	16.22	16.39		
20	16QAM	50	50	15.91	15.89	15.91	16.04	16.26		
20	16QAM	100	0	15.86	15.79	15.92	16.11	16.27		
20	64QAM	1	0	15.65	15.54	15.48	15.54	15.65	17	0
20	64QAM	1	49	15.55	15.44	15.67	15.82	15.91		
20	64QAM	1	99	15.52	15.42	15.46	15.49	15.61		
20	64QAM	50	0	16.04	15.88	15.87	16.09	16.24	17	0
20	64QAM	50	24	15.94	15.88	16.02	16.22	16.37		
20	64QAM	50	50	15.90	15.89	15.91	16.06	16.24		
20	64QAM	100	0	15.88	15.83	15.95	16.06	16.32		
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	15.97	15.75	15.76	16.00	16.03	17	0
15	QPSK	1	37	15.89	15.83	15.80	16.10	16.25		
15	QPSK	1	74	15.79	15.85	15.77	15.85	16.21		
15	QPSK	36	0	15.95	15.82	15.85	16.05	16.24	17	0
15	QPSK	36	20	15.94	15.82	15.97	16.16	16.27		
15	QPSK	36	39	15.82	15.81	15.90	16.10	16.27		
15	QPSK	75	0	15.83	15.80	15.93	16.09	16.23		
15	16QAM	1	0	16.02	15.96	15.90	16.09	16.24	17	0
15	16QAM	1	37	16.01	15.97	16.01	16.23	16.37		
15	16QAM	1	74	15.96	15.88	15.94	15.99	16.26		
15	16QAM	36	0	15.96	15.76	15.81	16.02	16.24	17	0
15	16QAM	36	20	15.89	15.77	15.98	16.12	16.23		
15	16QAM	36	39	15.79	15.82	15.88	16.05	16.24		
15	16QAM	75	0	15.92	15.74	15.93	16.10	16.21		
15	64QAM	1	0	15.62	15.39	15.39	15.68	15.89	17	0
15	64QAM	1	37	15.62	15.46	15.60	15.79	15.88		
15	64QAM	1	74	15.59	15.47	15.52	15.49	15.76		
15	64QAM	36	0	15.97	15.83	15.83	16.04	16.24	17	0
15	64QAM	36	20	15.97	15.86	15.99	16.17	16.28		
15	64QAM	36	39	15.96	15.88	15.91	16.07	16.26		
15	64QAM	75	0	15.90	15.76	15.96	16.11	16.23		
Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	15.86	15.73	15.79	15.80	15.95	17	0
10	QPSK	1	25	15.83	15.73	15.85	16.06	16.21		
10	QPSK	1	49	15.87	15.75	15.78	15.81	15.96		
10	QPSK	25	0	16.02	15.97	15.98	16.04	16.33	17	0
10	QPSK	25	12	16.03	15.90	16.07	16.14	16.39		
10	QPSK	25	25	15.97	15.93	15.93	16.16	16.24		
10	QPSK	50	0	15.92	15.81	15.99	16.09	16.27		
10	16QAM	1	0	16.06	15.97	15.98	16.01	16.22	17	0
10	16QAM	1	25	16.00	15.90	16.04	16.25	16.40		
10	16QAM	1	49	15.92	15.91	15.93	15.98	16.11		
10	16QAM	25	0	16.00	15.99	15.96	16.05	16.32	17	0
10	16QAM	25	12	16.00	15.95	16.06	16.18	16.41		
10	16QAM	25	25	15.97	15.92	15.91	16.13	16.27		
10	16QAM	50	0	15.93	15.88	15.97	16.06	16.33		
10	64QAM	1	0	15.75	15.65	15.75	15.66	15.83	17	0
10	64QAM	1	25	15.76	15.67	15.74	15.99	16.13		
10	64QAM	1	49	15.69	15.89	15.74	15.67	15.75		
10	64QAM	25	0	16.03	15.96	15.95	16.13	16.34	17	0
10	64QAM	25	12	16.01	15.96	16.11	16.23	16.44		
10	64QAM	25	25	16.04	15.99	15.96	16.12	16.29		
10	64QAM	50	0	15.94	15.80	15.96	16.13	16.30		
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	15.93	15.78	15.83	16.07	16.26	17	0
5	QPSK	1	12	15.87	15.76	15.90	16.11	16.21		
5	QPSK	1	24	15.83	15.77	15.86	16.10	16.21		
5	QPSK	12	0	16.03	15.96	15.99	16.16	16.39	17	0
5	QPSK	12	7	16.08	15.91	16.07	16.26	16.41		
5	QPSK	12	13	16.00	15.94	16.01	16.26	16.34		
5	QPSK	25	0	15.99	15.86	16.02	16.19	16.35		
5	16QAM	1	0	16.10	15.98	16.00	16.22	16.42	17	0
5	16QAM	1	12	16.11	15.97	16.13	16.37	16.45		
5	16QAM	1	24	16.08	15.96	16.02	16.31	16.35		
5	16QAM	12	0	15.98	15.85	15.93	16.12	16.34	17	0
5	16QAM	12	7	15.99	15.88	15.96	16.26	16.34		
5	16QAM	12	13	15.98	15.86	15.94	16.18	16.32		
5	16QAM	25	0	16.00	15.91	16.01	16.15	16.38		
5	64QAM	1	0	15.69	15.52	15.61	15.84	16.00	17	0
5	64QAM	1	12	15.66	15.53	15.68	15.85	15.98		
5	64QAM	1	24	15.70	15.50	15.66	15.85	15.99		
5	64QAM	12	0	16.08	15.96	16.03	16.22	16.43	17	0
5	64QAM	12	7	16.04	15.96	16.10	16.30	16.45		
5	64QAM	12	13	16.05	15.98	16.06	16.29	16.42		
5	64QAM	25	0	16.02	15.92	16.07	16.26	16.41		

Reduced Power Mode for Handheld on

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	28.98	28.53	27.50	29.00	19.98	19.53	18.50	20.00
GPRS 1 Tx slot	28.97	28.53	27.49	29.00	19.97	19.53	18.49	20.00
GPRS 2 Tx slots	27.78	27.48	26.72	28.50	21.78	21.48	20.72	22.50
GPRS 3 Tx slots	26.26	25.92	25.18	27.00	22.00	21.66	20.92	22.74
GPRS 4 Tx slots	24.54	24.33	23.48	25.00	21.54	21.33	20.48	22.00
EDGE 1 Tx slot	25.36	25.00	24.14	25.50	16.36	16.00	15.14	16.50
EDGE 2 Tx slots	23.98	23.46	22.72	24.00	17.98	17.46	16.72	18.00
EDGE 3 Tx slots	21.68	21.65	20.24	22.00	17.42	17.39	15.98	17.74
EDGE 4 Tx slots	20.78	20.27	19.55	21.00	17.78	17.27	16.55	18.00

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513	
Rx Channel		9662	9800	9938		1537	1638	1738	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6	
3GPP Rel 99	AMR 12.2Kbps	20.31	20.33	20.27	21.00	20.11	20.41	20.22	21.00
3GPP Rel 99	RMC 12.2Kbps	20.33	20.35	20.28	21.00	20.12	20.42	20.25	21.00
3GPP Rel 6	HSDPA Subtest-1	19.97	19.95	19.69	20.50	19.54	19.88	19.62	20.50
3GPP Rel 6	HSDPA Subtest-2	20.00	19.98	19.55	20.50	19.56	19.90	19.60	20.50
3GPP Rel 6	HSDPA Subtest-3	19.45	19.46	19.08	20.00	19.05	19.34	19.09	20.00
3GPP Rel 6	HSDPA Subtest-4	19.48	19.47	19.00	20.00	19.03	19.36	19.10	20.00
3GPP Rel 8	DC-HSDPA Subtest-1	19.96	19.98	19.71	20.50	19.58	19.91	19.68	20.50
3GPP Rel 8	DC-HSDPA Subtest-2	20.01	20.00	19.57	20.50	19.62	19.98	19.68	20.50
3GPP Rel 8	DC-HSDPA Subtest-3	19.49	19.48	19.15	20.00	19.09	19.36	19.11	20.00
3GPP Rel 8	DC-HSDPA Subtest-4	19.46	19.50	19.18	20.00	19.05	19.39	19.15	20.00
3GPP Rel 6	HSUPA Subtest-1	19.51	19.99	19.49	20.50	19.52	19.84	19.61	20.50
3GPP Rel 6	HSUPA Subtest-2	17.45	17.93	17.51	18.50	17.57	17.90	17.62	18.50
3GPP Rel 6	HSUPA Subtest-3	18.97	18.96	18.49	19.50	18.58	18.90	18.64	19.50
3GPP Rel 6	HSUPA Subtest-4	18.02	17.97	17.56	18.50	17.53	17.87	17.59	18.50
3GPP Rel 6	HSUPA Subtest-5	20.00	19.90	19.54	20.50	19.50	19.10	19.40	20.50

Band	CDMA BC1			Tune-up Limit (dBm)
TX Channel	25	600	1175	
Frequency (MHz)	1851.25	1880	1908.75	
RC1 SO55	21.18	21.27	21.00	21.50
RC3 SO55	21.20	21.29	21.03	21.50
RC3 SO32 (F+SCH)	21.21	21.30	21.05	21.50
RC3 SO32 (+SCH)	21.22	21.25	21.05	21.50
RTAP 153.6Kbps	21.21	21.30	21.04	21.50
RETAP 4096Bits	21.19	21.28	21.02	21.50

SPORTON LAB.

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	20.45	20.36	20.34		
20	QPSK	1	49	20.36	20.45	20.38	21	0
20	QPSK	1	99	20.27	20.35	20.33		
20	QPSK	50	0	20.43	20.36	20.36		
20	QPSK	50	24	20.31	20.27	20.37	21	0
20	QPSK	50	50	20.27	20.19	20.16		
20	QPSK	100	0	20.27	20.41	20.37		
20	16QAM	1	0	20.52	20.36	20.56		
20	16QAM	1	49	20.57	20.57	20.57	21	0
20	16QAM	1	99	20.40	20.39	20.31		
20	16QAM	50	0	20.23	20.23	20.40		
20	16QAM	50	24	20.36	20.31	20.38	21	0
20	16QAM	50	50	20.26	20.21	20.15		
20	16QAM	100	0	20.29	20.18	20.32		
20	64QAM	1	0	20.39	20.57	20.66		
20	64QAM	1	49	20.46	20.53	20.46	21	0
20	64QAM	1	99	20.31	20.34	20.41		
20	64QAM	50	0	20.24	20.20	20.37		
20	64QAM	50	24	20.36	20.28	20.39	21	0
20	64QAM	50	50	20.27	20.20	20.16		
20	64QAM	100	0	20.29	20.21	20.31		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	20.21	20.28	20.39		
15	QPSK	1	37	20.24	20.22	20.16	21	0
15	QPSK	1	74	20.08	20.06	20.02		
15	QPSK	36	0	20.27	20.23	20.34		
15	QPSK	36	20	20.39	20.30	20.32	21	0
15	QPSK	36	39	20.30	20.23	20.14		
15	QPSK	75	0	20.31	20.23	20.28		
15	16QAM	1	0	20.56	20.60	20.23		
15	16QAM	1	37	20.61	20.57	20.47	21	0
15	16QAM	1	74	20.43	20.42	20.32		
15	16QAM	36	0	20.33	20.23	20.32		
15	16QAM	36	20	20.38	20.32	20.30	21	0
15	16QAM	36	39	20.33	20.26	20.14		
15	16QAM	75	0	20.38	20.26	20.28		
15	64QAM	1	0	20.56	20.51	20.63		
15	64QAM	1	37	20.41	20.48	20.41	21	0
15	64QAM	1	74	20.26	20.30	20.13		
15	64QAM	36	0	20.30	20.23	20.33		
15	64QAM	36	20	20.38	20.27	20.32	21	0
15	64QAM	36	39	20.33	20.26	20.17		
15	64QAM	75	0	20.36	20.25	20.29		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	20.10	20.00	20.33		
10	QPSK	1	25	20.39	20.40	20.20	21	0
10	QPSK	1	49	20.02	20.02	20.06		
10	QPSK	25	0	20.53	20.30	20.26		
10	QPSK	25	12	20.51	20.39	20.28	21	0
10	QPSK	25	25	20.34	20.29	20.17		
10	QPSK	50	0	20.41	20.30	20.22		
10	16QAM	1	0	20.48	20.39	20.22		
10	16QAM	1	25	20.56	20.35	20.59	21	0
10	16QAM	1	49	20.44	20.36	20.47		
10	16QAM	25	0	20.45	20.31	20.27		
10	16QAM	25	12	20.53	20.44	20.33	21	0
10	16QAM	25	25	20.34	20.29	20.18		
10	16QAM	50	0	20.41	20.30	20.21		
10	64QAM	1	0	20.48	20.35	20.51		
10	64QAM	1	25	20.32	20.61	20.33	21	0
10	64QAM	1	49	20.40	20.39	20.44		
10	64QAM	25	0	20.49	20.33	20.28		
10	64QAM	25	12	20.54	20.42	20.32	21	0
10	64QAM	25	25	20.36	20.27	20.17		
10	64QAM	50	0	20.41	20.30	20.23		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	20.46	20.30	20.15		
5	QPSK	1	12	20.47	20.38	20.19	21	0
5	QPSK	1	24	20.27	20.15	20.01		
5	QPSK	12	0	20.59	20.40	20.27		
5	QPSK	12	7	20.58	20.45	20.28	21	0
5	QPSK	12	13	20.47	20.35	20.14		
5	QPSK	25	0	20.52	20.37	20.20		
5	16QAM	1	0	20.51	20.60	20.50		
5	16QAM	1	12	20.36	20.52	20.53	21	0
5	16QAM	1	24	20.66	20.52	20.35		
5	16QAM	12	0	20.64	20.45	20.30		
5	16QAM	12	7	20.63	20.49	20.33	21	0
5	16QAM	12	13	20.52	20.39	20.21		
5	16QAM	25	0	20.53	20.41	20.25		
5	64QAM	1	0	20.67	20.52	20.41		
5	64QAM	1	12	20.52	20.67	20.44	21	0
5	64QAM	1	24	20.53	20.44	20.28		
5	64QAM	12	0	20.61	20.43	20.32		
5	64QAM	12	7	20.57	20.44	20.29	21	0
5	64QAM	12	13	20.50	20.33	20.18		
5	64QAM	25	0	20.54	20.40	20.27		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	20.50	20.29	20.19		
3	QPSK	1	8	20.49	20.40	20.19	21	0
3	QPSK	1	14	20.36	20.18	20.02		
3	QPSK	8	0	20.57	20.38	20.25		
3	QPSK	8	4	20.56	20.43	20.25	21	0
3	QPSK	8	7	20.50	20.37	20.17		
3	QPSK	15	0	20.53	20.38	20.20		
3	16QAM	1	0	20.64	20.63	20.53		
3	16QAM	1	8	20.51	20.43	20.56	21	0
3	16QAM	1	14	20.50	20.57	20.41		
3	16QAM	8	0	20.61	20.49	20.33		
3	16QAM	8	4	20.62	20.49	20.33	21	0
3	16QAM	8	7	20.55	20.42	20.27		
3	16QAM	15	0	20.56	20.42	20.27		
3	64QAM	1	0	20.49	20.59	20.43		
3	64QAM	1	8	20.42	20.21	20.42	21	0
3	64QAM	1	14	20.65	20.50	20.31		
3	64QAM	8	0	20.60	20.44	20.29		
3	64QAM	8	4	20.57	20.43	20.27	21	0
3	64QAM	8	7	20.50	20.38	20.21		
3	64QAM	15	0	20.54	20.42	20.23		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	20.40	20.34	20.05		
1.4	QPSK	1	3	20.47	20.33	20.08		
1.4	QPSK	1	5	20.36	20.22	19.99	21	0
1.4	QPSK	3	0	20.41	20.36	20.07		
1.4	QPSK	3	1	20.42	20.38	20.12		
1.4	QPSK	3	3	20.39	20.26	20.07		
1.4	QPSK	6	0	20.50	20.33	20.16	21	0
1.4	16QAM	1	0	20.45	20.23	20.41		
1.4	16QAM	1	3	20.39	20.26	20.45		
1.4	16QAM	1	5	20.50	20.33	20.35	21	0
1.4	16QAM	3	0	20.53	20.43	20.17		
1.4	16QAM	3	1	20.58	20.47	20.23		
1.4	16QAM	3	3	20.50	20.34	20.16		
1.4	16QAM	6	0	20.53	20.40	20.19	21	0
1.4	64QAM	1	0	20.61	20.53	20.35		
1.4	64QAM	1	3	20.34	20.63	20.38		
1.4	64QAM	1	5	20.65	20.50	20.34	21	0
1.4	64QAM	3	0	20.57	20.45	20.24		
1.4	64QAM	3	1	20.63	20.50	20.30		
1.4	64QAM	3	3	20.52	20.38	20.14		
1.4	64QAM	6	0	20.49	20.35	20.17	21	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	20.33	20.23	20.16		
20	QPSK	1	49	20.45	20.22	20.23	20.5	0
20	QPSK	1	99	20.18	20.01	19.99		
20	QPSK	50	0	20.30	20.37	20.29		
20	QPSK	50	24	20.32	20.39	20.43	20.5	0
20	QPSK	50	50	20.40	20.27	20.19		
20	QPSK	100	0	20.49	20.35	20.27		
20	16QAM	1	0	20.47	20.26	20.26		
20	16QAM	1	49	20.33	20.39	20.36	20.5	0
20	16QAM	1	99	20.41	20.35	20.28		
20	16QAM	50	0	20.35	20.13	20.07		
20	16QAM	50	24	20.38	20.17	20.13	20.5	0
20	16QAM	50	50	20.20	19.96	19.97		
20	16QAM	100	0	20.24	20.04	19.90		
20	64QAM	1	0	20.42	20.06	20.04		
20	64QAM	1	49	20.34	20.10	19.99	20.5	0
20	64QAM	1	99	20.39	20.21	19.98		
20	64QAM	50	0	20.01	19.78	19.75		
20	64QAM	50	24	20.09	19.85	19.92	20.5	0
20	64QAM	50	50	19.83	19.62	19.61		
20	64QAM	100	0	19.93	19.70	19.45		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	20.27	19.95	19.90		
15	QPSK	1	37	20.26	19.94	19.98	20.5	0
15	QPSK	1	74	19.92	19.93	19.79		
15	QPSK	36	0	20.35	20.12	20.22		
15	QPSK	36	20	20.43	20.04	20.17	20.5	0
15	QPSK	36	39	20.24	20.14	20.01		
15	QPSK	75	0	20.26	20.11	20.13		
15	16QAM	1	0	20.23	20.05	19.97		
15	16QAM	1	37	20.37	20.03	19.99	20.5	0
15	16QAM	1	74	20.03	19.99	19.98		
15	16QAM	36	0	19.91	19.66	19.57		
15	16QAM	36	20	19.93	19.61	19.63	20.5	0
15	16QAM	36	39	19.74	19.47	19.52		
15	16QAM	75	0	19.78	19.68	19.60		
15	64QAM	1	0	19.71	19.43	19.62		
15	64QAM	1	37	19.85	19.87	19.48	20.5	0
15	64QAM	1	74	19.93	19.70	19.53		
15	64QAM	36	0	19.53	19.23	19.35		
15	64QAM	36	20	19.64	19.20	19.33	20.5	0
15	64QAM	36	39	19.51	19.28	19.21		
15	64QAM	75	0	19.52	19.27	19.29		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	20.09	19.85	19.85		
10	QPSK	1	25	20.32	19.95	20.20	20.5	0
10	QPSK	1	49	19.93	19.95	19.85		
10	QPSK	25	0	20.40	20.01	20.12		
10	QPSK	25	12	20.45	20.16	20.08	20.5	0
10	QPSK	25	25	20.31	20.04	19.96		
10	QPSK	50	0	20.33	20.10	19.96		
10	16QAM	1	0	20.41	20.45	20.35		
10	16QAM	1	25	20.34	20.33	20.44	20.5	0
10	16QAM	1	49	20.23	20.28	20.26		
10	16QAM	25	0	20.43	20.19	20.31		
10	16QAM	25	12	20.41	20.25	20.35	20.5	0
10	16QAM	25	25	20.32	20.06	20.20		
10	16QAM	50	0	20.27	20.11	19.93		
10	64QAM	1	0	20.40	20.20	20.13		
10	64QAM	1	25	20.40	20.27	20.23	20.5	0
10	64QAM	1	49	20.34	20.26	20.07		
10	64QAM	25	0	20.06	19.82	19.92		
10	64QAM	25	12	20.21	19.80	20.02	20.5	0
10	64QAM	25	25	19.98	19.81	19.87		
10	64QAM	50	0	19.95	19.84	19.54		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	20.30	20.34	20.33		
5	QPSK	1	12	20.42	20.34	20.38	20.5	0
5	QPSK	1	24	20.46	20.44	20.33		
5	QPSK	12	0	20.40	20.00	20.10		
5	QPSK	12	7	20.43	20.15	20.06	20.5	0
5	QPSK	12	13	20.31	20.03	19.94		
5	QPSK	25	0	20.33	20.09	19.94		
5	16QAM	1	0	20.31	20.44	20.33		
5	16QAM	1	12	20.36	20.43	20.42	20.5	0
5	16QAM	1	24	20.34	20.37	20.24		
5	16QAM	12	0	20.43	20.18	20.29		
5	16QAM	12	7	20.41	20.24	20.33	20.5	0
5	16QAM	12	13	20.32	20.05	20.18		
5	16QAM	25	0	20.27	20.10	19.91		
5	64QAM	1	0	20.40	20.19	20.11		
5	64QAM	1	12	20.33	20.26	20.50	20.5	0
5	64QAM	1	24	20.34	20.25	20.05		
5	64QAM	12	0	20.06	19.81	19.90		
5	64QAM	12	7	20.21	19.79	20.00	20.5	0
5	64QAM	12	13	19.98	19.80	19.85		
5	64QAM	25	0	19.95	19.83	19.52		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	20.37	20.08	20.02		
3	QPSK	1	8	20.41	20.05	20.00	20.5	0
3	QPSK	1	14	20.37	19.97	20.00		
3	QPSK	8	0	20.31	20.17	20.08		
3	QPSK	8	4	20.31	20.03	20.09	20.5	0
3	QPSK	8	7	20.21	20.05	20.02		
3	QPSK	15	0	20.25	20.08	20.04		
3	16QAM	1	0	20.24	20.46	20.34		
3	16QAM	1	8	20.30	20.49	20.37	20.5	0
3	16QAM	1	14	20.47	20.35	20.35		
3	16QAM	8	0	20.32	20.15	20.20		
3	16QAM	8	4	20.36	20.12	20.15	20.5	0
3	16QAM	8	7	20.36	20.09	20.10		
3	16QAM	15	0	20.33	20.18	20.14		
3	64QAM	1	0	20.30	20.42	20.30		
3	64QAM	1	8	20.31	20.41	20.31	20.5	0
3	64QAM	1	14	20.38	20.27	20.25		
3	64QAM	8	0	20.22	19.79	19.77		
3	64QAM	8	4	20.25	19.80	19.84	20.5	0
3	64QAM	8	7	20.17	19.87	19.80		
3	64QAM	15	0	20.21	19.81	19.79		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	20.33	19.96	19.98		
1.4	QPSK	1	3	20.34	20.04	19.98		
1.4	QPSK	1	5	20.30	19.88	19.91	20.5	0
1.4	QPSK	3	0	20.36	20.03	19.93		
1.4	QPSK	3	1	20.41	20.04	20.00		
1.4	QPSK	3	3	20.30	19.98	19.99		
1.4	QPSK	6	0	20.42	20.08	19.99	20.5	0
1.4	16QAM	1	0	20.32	20.26	20.24		
1.4	16QAM	1	3	20.26	20.38	20.17		
1.4	16QAM	1	5	20.49	20.14	20.15	20.5	0
1.4	16QAM	3	0	20.44	20.12	20.00		
1.4	16QAM	3	1	20.45	20.09	20.00		
1.4	16QAM	3	3	20.42	20.03	20.02		
1.4	16QAM	6	0	20.45	20.22	19.96	20.5	0
1.4	64QAM	1	0	20.33	20.23	20.29		
1.4	64QAM	1	3	20.31	20.25	20.47		
1.4	64QAM	1	5	20.23	20.11	20.32	20.5	0
1.4	64QAM	3	0	20.25	20.20	20.22		
1.4	64QAM	3	1	20.27	20.30	20.16		
1.4	64QAM	3	3	20.22	20.08	20.15		
1.4	64QAM	6	0	20.12	19.71	19.67	20.5	0

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	21.38	21.46	21.30		
20	QPSK	1	49	21.24	21.21	21.10	21.5	0
20	QPSK	1	99	21.16	21.17	20.98		
20	QPSK	50	0	21.36	21.42	21.35		
20	QPSK	50	24	21.41	21.38	21.30	21.5	0
20	QPSK	50	50	21.33	21.33	21.22		
20	QPSK	100	0	21.29	21.30	21.25		
20	16QAM	1	0	21.33	21.28	21.17		
20	16QAM	1	49	21.41	21.35	21.13	21.5	0
20	16QAM	1	99	21.21	21.18	20.99		
20	16QAM	50	0	21.20	21.16	20.94		
20	16QAM	50	24	21.13	20.96	20.96	21.5	0
20	16QAM	50	50	21.06	21.02	20.84		
20	16QAM	100	0	21.01	20.95	20.90		
20	64QAM	1	0	21.27	21.28	21.16		
20	64QAM	1	49	21.22	21.28	21.05	21.5	0
20	64QAM	1	99	21.26	21.01	21.02		
20	64QAM	50	0	20.35	20.23	20.29		
20	64QAM	50	24	20.30	20.25	20.15	21	0.5
20	64QAM	50	50	20.22	20.21	20.01		
20	64QAM	100	0	20.20	20.10	20.05		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	21.07	21.01	20.96		
15	QPSK	1	37	21.09	21.01	20.79	21.5	0
15	QPSK	1	74	20.98	20.94	20.81		
15	QPSK	36	0	21.19	21.17	21.05		
15	QPSK	36	20	21.02	21.02	21.00	21.5	0
15	QPSK	36	39	21.09	21.01	20.90		
15	QPSK	75	0	21.08	20.97	20.92		
15	16QAM	1	0	21.40	21.20	21.24		
15	16QAM	1	37	21.29	21.20	21.16	21.5	0
15	16QAM	1	74	21.37	21.21	20.92		
15	16QAM	36	0	21.08	21.13	21.01		
15	16QAM	36	20	21.14	20.97	21.02	21.5	0
15	16QAM	36	39	21.01	21.04	20.90		
15	16QAM	75	0	21.05	21.02	20.96		
15	64QAM	1	0	21.16	21.24	21.19		
15	64QAM	1	37	21.36	21.39	21.18	21.5	0
15	64QAM	1	74	21.10	21.09	21.00		
15	64QAM	36	0	20.43	20.33	20.20		
15	64QAM	36	20	20.31	20.15	20.18	21	0.5
15	64QAM	36	39	20.20	20.15	20.18		
15	64QAM	75	0	20.26	20.12	20.08		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	21.16	20.97	20.76		
10	QPSK	1	25	21.08	21.05	20.69	21.5	0
10	QPSK	1	49	21.04	21.01	20.75		
10	QPSK	25	0	21.12	21.11	20.92		
10	QPSK	25	12	21.23	21.04	21.03	21.5	0
10	QPSK	25	25	20.97	21.05	20.91		
10	QPSK	50	0	21.08	20.89	20.88		
10	16QAM	1	0	21.43	21.26	21.22		
10	16QAM	1	25	21.42	21.43	21.08	21.5	0
10	16QAM	1	49	21.45	21.19	21.10		
10	16QAM	25	0	21.15	21.07	20.89		
10	16QAM	25	12	21.19	21.07	20.88	21.5	0
10	16QAM	25	25	21.11	21.08	20.88		
10	16QAM	50	0	21.10	20.93	20.88		
10	64QAM	1	0	21.40	21.44	21.10		
10	64QAM	1	25	21.35	21.25	21.08	21.5	0
10	64QAM	1	49	21.34	21.33	21.01		
10	64QAM	25	0	20.34	20.38	20.12		
10	64QAM	25	12	20.48	20.27	20.14	21	0.5
10	64QAM	25	25	20.33	20.23	20.16		
10	64QAM	50	0	20.29	20.23	20.04		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	21.03	21.09	20.83		
5	QPSK	1	12	21.15	21.04	20.85	21.5	0
5	QPSK	1	24	21.06	20.99	20.86		
5	QPSK	12	0	21.17	21.07	20.95		
5	QPSK	12	7	21.19	21.12	20.97	21.5	0
5	QPSK	12	13	21.15	21.10	20.94		
5	QPSK	25	0	21.09	21.02	20.91		
5	16QAM	1	0	21.42	21.39	21.26		
5	16QAM	1	12	21.24	21.15	20.99	21.5	0
5	16QAM	1	24	21.42	21.27	21.17		
5	16QAM	12	0	21.12	21.07	21.02		
5	16QAM	12	7	21.24	21.03	20.97	21.5	0
5	16QAM	12	13	21.15	21.09	20.88		
5	16QAM	25	0	21.12	21.00	20.83		
5	64QAM	1	0	21.35	21.20	21.10		
5	64QAM	1	12	21.26	21.24	21.16	21.5	0
5	64QAM	1	24	21.28	21.24	21.06		
5	64QAM	12	0	20.44	20.42	20.17		
5	64QAM	12	7	20.44	20.39	20.18	21	0.5
5	64QAM	12	13	20.46	20.32	20.10		
5	64QAM	25	0	20.40	20.30	20.07		

Band 66								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				132072	132322	132572		
Frequency (MHz)				1720	1745	1770		
20	QPSK	1	0	20.32	20.35	20.31		
20	QPSK	1	49	20.30	20.31	20.32	20.5	0
20	QPSK	1	99	20.31	20.22	20.33		
20	QPSK	50	0	20.31	20.39	20.35		
20	QPSK	50	24	20.35	20.35	20.24	20.5	0
20	QPSK	50	50	20.21	20.32	20.31		
20	QPSK	100	0	20.21	20.24	20.20		
20	16QAM	1	0	20.30	20.20	20.31		
20	16QAM	1	49	20.34	20.28	20.47	20.5	0
20	16QAM	1	99	20.31	20.23	20.42		
20	16QAM	50	0	19.89	19.93	20.01		
20	16QAM	50	24	20.05	19.95	20.11	20.5	0
20	16QAM	50	50	19.91	19.98	20.05		
20	16QAM	100	0	19.72	19.78	19.68		
20	64QAM	1	0	20.14	20.02	20.39		
20	64QAM	1	49	20.24	20.06	20.34	20.5	0
20	64QAM	1	99	20.01	20.04	20.19		
20	64QAM	50	0	19.67	19.84	19.79		
20	64QAM	50	24	19.72	19.68	20.04	20.5	0
20	64QAM	50	50	19.63	19.70	19.92		
20	64QAM	100	0	19.48	19.83	19.93		
Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	QPSK	1	0	20.27	20.38	20.36		
15	QPSK	1	37	20.39	20.39	20.30	20.5	0
15	QPSK	1	74	20.26	20.26	20.27		
15	QPSK	36	0	20.06	19.96	19.87		
15	QPSK	36	20	20.24	20.04	19.94	20.5	0
15	QPSK	36	39	20.33	20.01	19.85		
15	QPSK	75	0	20.18	19.98	19.80		
15	16QAM	1	0	20.28	20.14	20.19		
15	16QAM	1	37	20.40	20.22	20.13	20.5	0
15	16QAM	1	74	20.30	20.22	20.12		
15	16QAM	36	0	19.93	19.85	19.79		
15	16QAM	36	20	20.13	19.89	19.88	20.5	0
15	16QAM	36	39	20.20	19.86	19.81		
15	16QAM	75	0	20.05	19.79	19.56		
15	64QAM	1	0	19.90	19.91	19.88		
15	64QAM	1	37	20.22	20.01	19.85	20.5	0
15	64QAM	1	74	20.33	19.85	19.84		
15	64QAM	36	0	19.68	19.46	19.55		
15	64QAM	36	20	19.87	19.63	19.62	20.5	0
15	64QAM	36	39	19.96	19.65	19.58		
15	64QAM	75	0	19.79	19.54	19.31		
Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	QPSK	1	0	20.31	20.09	20.16		
10	QPSK	1	25	20.34	20.16	20.14	20.5	0
10	QPSK	1	49	20.25	20.11	20.12		
10	QPSK	25	0	20.12	19.63	19.67		
10	QPSK	25	12	20.13	19.69	19.68	20.5	0
10	QPSK	25	25	20.09	19.68	19.66		
10	QPSK	50	0	19.96	19.48	19.46		
10	16QAM	1	0	20.22	19.90	19.92		
10	16QAM	1	25	20.35	19.87	19.93	20.5	0
10	16QAM	1	49	20.15	19.85	19.91		
10	16QAM	25	0	19.90	19.68	19.59		
10	16QAM	25	12	20.04	19.69	19.63	20.5	0
10	16QAM	25	25	19.96	19.63	19.61		
10	16QAM	50	0	19.84	19.35	19.41		
10	64QAM	1	0	19.88	19.78	19.80		
10	64QAM	1	25	20.24	19.79	19.86	20.5	0
10	64QAM	1	49	19.89	19.74	19.81		
10	64QAM	25	0	19.49	19.31	19.41		
10	64QAM	25	12	19.78	19.42	19.39	20.5	0
10	64QAM	25	25	19.70	19.43	19.38		
10	64QAM	50	0	19.59	19.13	19.16		
Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	20.36	20.29	20.25		
5	QPSK	1	12	20.26	20.20	20.22	20.5	0
5	QPSK	1	24	20.28	20.16	20.09		
5	QPSK	12	0	20.26	20.31	20.29		
5	QPSK	12	7	20.38	20.30	20.28	20.5	0
5	QPSK	12	13	20.32	20.26	20.19		
5	QPSK	25	0	20.19	20.19	20.21		
5	16QAM	1	0	20.18	19.95	19.90		
5	16QAM	1	12	20.31	19.97	19.91	20.5	0
5	16QAM	1	24	20.40	19.95	19.90		
5	16QAM	12	0	19.94	19.86	19.75		
5	16QAM	12	7	20.07	19.67	19.80	20.5	0
5	16QAM	12	13	20.07	19.65	19.69		
5	16QAM	25	0	19.97	19.55	19.69		
5	64QAM	1	0	19.98	19.76	19.83		
5	64QAM	1	12	20.21	19.75	19.96	20.5	0
5	64QAM	1	24	20.17	19.81	19.87		
5	64QAM	12	0	19.69	19.45	19.52		
5	64QAM	12	7	19.84	19.43	19.55	20.5	0
5	64QAM	12	13	19.83	19.41	19.47		
5	64QAM	25	0	19.70	19.29	19.26		
Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	20.31	20.26	20.23		
3	QPSK	1	8	20.44	20.29	20.25	20.5	0
3	QPSK	1	14	20.40	20.20	20.16		
3	QPSK	8	0	20.39	20.24	20.26		
3	QPSK	8	4	20.45	20.31	20.26	20.5	0
3	QPSK	8	7	20.44	20.28	20.21		
3	QPSK	15	0	20.41	20.26	20.23		
3	16QAM	1	0	19.98	19.88	19.99		
3	16QAM	1	8	20.17	20.06	19.97	20.5	0
3	16QAM	1	14	20.13	19.98	19.92		
3	16QAM	8	0	19.84	19.65	19.78		
3	16QAM	8	4	19.90	19.74	19.82	20.5	0
3	16QAM	8	7	19.88	19.70	19.80		
3	16QAM	15	0	19.82	19.61	19.74		
3	64QAM	1	0	19.84	19.91	19.89		
3	64QAM	1	8	20.10	19.87	19.86	20.5	0
3	64QAM	1	14	20.11	19.89	19.84		
3	64QAM	8	0	19.55	19.34	19.53		
3	64QAM	8	4	19.63	19.45	19.55	20.5	0
3	64QAM	8	7	19.61	19.43	19.50		
3	64QAM	15	0	19.54	19.35	19.47		
Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	20.24	20.08	20.03		
1.4	QPSK	1	3	20.33	20.19	20.07		
1.4	QPSK	1	5	20.27	20.11	20.08	20.5	0
1.4	QPSK	3	0	20.28	20.13	20.02		
1.4	QPSK	3	1	20.32	20.17	20.07		
1.4	QPSK	3	3	20.30	20.16	20.07		
1.4	QPSK	6	0	20.33	20.19	20.10	20.5	0
1.4	16QAM	1	0	20.04	19.88	19.85		
1.4	16QAM	1	3	20.01	19.95	19.93		
1.4	16QAM	1	5	19.92	19.91	19.90	20.5	0
1.4	16QAM	3	0	19.78	19.67	19.57		
1.4	16QAM	3	1	19.82	19.70	19.62		
1.4	16QAM	3	3	19.78	19.67	19.59		
1.4	16QAM	6	0	19.77	19.61	19.66	20.5	0
1.4	64QAM	1	0	19.84	19.75	19.81		
1.4	64QAM	1	3	19.99	19.83	19.86		
1.4	64QAM	1	5	19.89	19.79	19.77	20.5	0
1.4	64QAM	3	0	19.85	19.73	19.70		
1.4	64QAM	3	1	19.87	19.71	19.77		
1.4	64QAM	3	3	19.88	19.77	19.84		
1.4	64QAM	6	0	19.48	19.24	19.31	20.5	0

Full

CA_7C								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
20850	21048	QPSK	1	0	0	0	23.52	24.00
21100	20902	QPSK	1	0	0	0	23.75	24.00
21350	21152	QPSK	1	0	0	0	23.68	24.00

Sensor

CA_7C								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
20850	21048	QPSK	1	0	0	0	16.87	17.00
21100	20902	QPSK	1	0	0	0	16.76	17.00
21350	21152	QPSK	1	0	0	0	17.88	17.00

Hotspot

CA_7C								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
20850	21048	QPSK	1	0	0	0	13.31	14.00
21100	20902	QPSK	1	0	0	0	13.47	14.00
21350	21152	QPSK	1	0	0	0	13.35	14.00

Handheld

CA_7C								
Combination 20MHz+20MHz (100RB+100RB)								
PCC Channel	SCC Channel	Modulation	PCC		SCC		Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset		
20850	21048	QPSK	1	0	0	0	21.36	21.50
21100	20902	QPSK	1	0	0	0	21.23	21.50
21350	21152	QPSK	1	0	0	0	21.37	21.50

Full Power

CA_2A-7A

Combination 20MHz+20MHz (100RB+100RB)

PCC Channel	SCC Channel	Modulation	RB Size	RB Offset	RB Size	RB Offset	PCC Measured Power (dBm)	SCC Measured Power (dBm)	Total Measured Power (dBm)	Total Tune up Power (dBm)
18700	20850	QPSK	1	0	1	0	22.33	17.00	23.43	24.00
			1	49	1	49	22.23	17.32	23.34	24.00
			1	99	1	99	22.12	17.13	23.33	24.00
			50	0	50	0	20.02	20.45	23.23	24.00
			50	24	50	24	20.12	20.32	23.34	24.00
			50	50	50	50	19.99	20.31	23.13	24.00
			100	0	100	0	19.99	20.33	23.15	24.00
18900	21100	QPSK	1	0	1	0	22.14	17.11	23.45	24.00
			1	49	1	49	22.21	17.32	23.32	24.00
			1	99	1		22.12	16.97	23.25	24.00
			50	0	50	0	20.23	20.12	23.15	24.00
			50	24	50	24	20.12	20.02	23.12	24.00
			50	50	50	50	20.11	20.12	23.24	24.00
			100	0	100	0	20.00	20.12	23.13	24.00
19100	21350	QPSK	1	0	1	0	22.00	17.32	23.19	24.00
			1	49	1	49	22.13	16.97	23.21	24.00
			1	99	1	99	22.13	17.43	23.31	24.00
			50	0	50	0	19.56	20.12	22.96	24.00
			50	24	50	24	19.67	20.23	22.88	24.00
			50	50	50	50	19.78	20.22	22.98	24.00
			100	0	100	0	19.49	20.02	22.76	24.00

For Head

CA_2A-7A

Combination 20MHz+20MHz (100RB+100RB)

PCC Channel	SCC Channel	Modulation	RB Size	RB Offset	RB Size	RB Offset	PCC Measured Power (dBm)	SCC Measured Power (dBm)	PCC Tune up Power (dBm)	SCC Tune up Power (dBm)
18700	20850	QPSK	1	0	1	0	22.50	12.15	24.00	13.00
			1	49	1	49	22.64	12.03	24.00	13.00
			1	99	1	99	22.27	12.00	24.00	13.00
			50	0	50	0	19.90	12.10	23.00	13.00
			50	24	50	24	19.99	12.03	23.00	13.00
			50	50	50	50	19.87	11.99	23.00	13.00
			100	0	100	0	19.88	11.98	23.00	13.00
18900	21100	QPSK	1	0	1	0	22.45	12.21	24.00	13.00
			1	49	1	49	22.44	12.10	24.00	13.00
			1	99	1	99	22.35	12.07	24.00	13.00
			50	0	50	0	19.78	12.21	23.00	13.00
			50	24	50	24	19.88	12.06	23.00	13.00
			50	50	50	50	19.97	11.98	23.00	13.00
			100	0	100	0	19.88	12.12	23.00	13.00
19100	21350	QPSK	1	0	1	0	22.34	12.03	24.00	13.00
			1	49	1	49	22.56	12.11	24.00	13.00
			1	99	1	99	22.55	12.07	24.00	13.00
			50	0	50	0	19.67	12.10	23.00	13.00
			50	24	50	24	19.66	12.06	23.00	13.00
			50	50	50	50	19.78	12.08	23.00	13.00
			100	0	100	0	19.98	12.02	23.00	13.00

Full Power

CA_7A-2A

Combination 20MHz+20MHz (100RB+100RB)

PCC Channel	SCC Channel	Modulation	RB Size	RB Offset	RB Size	RB Offset	PCC Measured Power (dBm)	SCC Measured Power (dBm)	Total Measured Power (dBm)	Total Tune up Power (dBm)
20850	18700	QPSK	1	0	1	0	22.80	16.99	23.65	24.00
			1	49	1	49	22.67	17.32	23.67	24.00
			1	99	1	99	22.78	16.66	23.54	24.00
			50	0	50	0	20.51	19.96	23.27	24.00
			50	24	50	24	20.45	19.95	23.43	24.00
			50	50	50	50	20.50	19.67	23.34	24.00
			100	0	100	0	20.45	20.01	23.27	24.00
21100	18900	QPSK	1	0	1	0	23.05	16.35	23.74	24.00
			1	49	1	49	22.87	16.78	23.65	24.00
			1	99	1	99	22.78	17.12	23.45	24.00
			50	0	50	0	20.54	19.76	23.65	24.00
			50	24	50	24	20.34	19.56	23.54	24.00
			50	50	50	50	20.44	20.02	23.54	24.00
			100	0	100	0	20.21	20.12	23.35	24.00
21350	19100	QPSK	1	0	1	0	23.00	16.07	23.58	24.00
			1	49	1	49	22.89	16.32	23.34	24.00
			1	99	1	99	22.98	16.54	23.45	24.00
			50	0	50	0	20.13	19.56	22.97	24.00
			50	24	50	24	20.13	19.65	22.91	24.00
			50	50	50	50	20.17	19.77	23.10	24.00
			100	0	100	0	20.32	19.80	22.99	24.00

For Head

CA_7A-2A

Combination 20MHz+20MHz (100RB+100RB)

PCC Channel	SCC Channel	Modulation	RB Size	RB Offset	RB Size	RB Offset	PCC Measured Power (dBm)	SCC Measured Power (dBm)	PCC Tune up Power (dBm)	SCC Tune up Power (dBm)
20850	18700	QPSK	1	0	1	0	12.15	22.72	13.00	24.00
			1	49	1	49	12.04	22.67	13.00	24.00
			1	99	1	99	12.13	22.56	13.00	24.00
			50	0	50	0	12.21	19.99	13.00	23.00
			50	24	50	24	12.12	20.01	13.00	23.00
			50	50	50	50	12.03	19.89	13.00	23.00
			100	0	100	0	12.12	19.99	13.00	23.00
21100	18900	QPSK	1	0	1	0	12.13	22.76	13.00	24.00
			1	49	1	49	12.04	22.65	13.00	24.00
			1	99	1	99	12.14	22.78	13.00	24.00
			50	0	50	0	12.04	19.89	13.00	23.00
			50	24	50	24	12.12	20.12	13.00	23.00
			50	50	50	50	12.14	19.99	13.00	23.00
			100	0	100	0	12.18	20.01	13.00	23.00
21350	19100	QPSK	1	0	1	0	12.21	22.72	13.00	24.00
			1	49	1	49	12.01	22.56	13.00	24.00
			1	99	1	99	12.05	22.76	13.00	24.00
			50	0	50	0	12.12	20.00	13.00	23.00
			50	24	50	24	12.21	19.98	13.00	23.00
			50	50	50	50	12.14	20.01	13.00	23.00
			100	0	100	0	12.19	20.03	13.00	23.00

For Body Worn & Hotspot

CA_2A-7A

Combination 20MHz+20MHz (100RB+100RB)

PCC Channel	SCC Channel	Modulation	RB Size	RB Offset	RB Size	RB Offset	PCC Measured Power (dBm)	SCC Measured Power (dBm)	PCC Tune up Power (dBm)	SCC Tune up Power (dBm)
18700	20850	QPSK	1	0	1	0	8.91	15.32	9.50	16.00
			1	49	1	49	8.98	15.31	9.50	16.00
			1	99	1	99	8.91	13.15	9.50	16.00
			50	0	50	0	8.96	15.33	9.50	16.00
			50	24	50	24	9.02	15.21	9.50	16.00
			50	50	50	50	9.00	15.15	9.50	16.00
			100	0	100	0	8.99	15.31	9.50	16.00
18900	21100	QPSK	1	0	1	0	9.01	15.46	9.50	16.00
			1	49	1	49	9.00	15.13	9.50	16.00
			1	99	1	99	8.99	15.21	9.50	16.00
			50	0	50	0	9.01	15.44	9.50	16.00
			50	24	50	24	8.90	15.19	9.50	16.00
			50	50	50	50	8.99	15.21	9.50	16.00
			100	0	100	0	8.90	15.31	9.50	16.00
19100	21350	QPSK	1	0	1	0	9.01	15.40	9.50	16.00
			1	49	1	49	8.98	15.12	9.50	16.00
			1	99	1	99	9.00	15.14	9.50	16.00
			50	0	50	0	9.01	15.13	9.50	16.00
			50	24	50	24	8.97	15.23	9.50	16.00
			50	50	50	50	8.97	15.21	9.50	16.00
			100	0	100	0	9.02	15.24	9.50	16.00

For Handheld

CA_2A-7A

Combination 20MHz+20MHz (100RB+100RB)

PCC Channel	SCC Channel	Modulation	RB Size	RB Offset	RB Size	RB Offset	PCC Measured Power (dBm)	SCC Measured Power (dBm)	PCC Tune up Power (dBm)	SCC Tune up Power (dBm)
18700	20850	QPSK	1	0	1	0	10.35	18.62	12.00	20.00
			1	49	1	49	10.42	18.61	12.00	20.00
			1	99	1	99	10.36	18.66	12.00	20.00
			50	0	50	0	10.52	18.65	12.00	20.00
			50	24	50	24	10.35	18.59	12.00	20.00
			50	50	50	50	10.41	18.65	12.00	20.00
			100	0	100	0	10.35	18.55	12.00	20.00
18900	21100	QPSK	1	0	1	0	10.65	18.73	12.00	20.00
			1	49	1	49	10.56	18.64	12.00	20.00
			1	99	1	99	10.45	18.54	12.00	20.00
			50	0	50	0	10.52	18.62	12.00	20.00
			50	24	50	24	10.35	18.52	12.00	20.00
			50	50	50	50	10.42	18.54	12.00	20.00
			100	0	100	0	10.29	18.53	12.00	20.00
19100	21350	QPSK	1	0	1	0	10.35	18.65	12.00	20.00
			1	49	1	49	10.35	18.45	12.00	20.00
			1	99	1	99	10.35	18.52	12.00	20.00
			50	0	50	0	10.35	18.41	12.00	20.00
			50	24	50	24	10.35	18.32	12.00	20.00
			50	50	50	50	10.35	18.41	12.00	20.00
			100	0	100	0	10.35	18.32	12.00	20.00

For Body Worn

CA_7A-2A

Combination 20MHz+20MHz (100RB+100RB)

PCC Channel	SCC Channel	Modulation	RB Size	RB Offset	RB Size	RB Offset	PCC Measured Power (dBm)	SCC Measured Power (dBm)	PCC Tune up Power (dBm)	SCC Tune up Power (dBm)
20850	18700	QPSK	1	0	1	0	15.28	8.96	16.00	9.50
			1	49	1	49	15.22	9.02	16.00	9.50
			1	99	1	99	15.18	8.78	16.00	9.50
			50	0	50	0	15.21	9.12	16.00	9.50
			50	24	50	24	15.23	9.03	16.00	9.50
			50	50	50	50	15.16	9.02	16.00	9.50
			100	0	100	0	15.23	8.89	16.00	9.50
21100	18900	QPSK	1	0	1	0	15.23	9.17	16.00	9.50
			1	49	1	49	15.18	9.02	16.00	9.50
			1	99	1	99	15.21	9.10	16.00	9.50
			50	0	50	0	15.12	9.09	16.00	9.50
			50	24	50	24	15.24	9.02	16.00	9.50
			50	50	50	50	15.21	9.04	16.00	9.50
			100	0	100	0	15.20	9.10	16.00	9.50
21350	19100	QPSK	1	0	1	0	15.21	8.99	16.00	9.50
			1	49	1	49	15.12	9.12	16.00	9.50
			1	99	1	99	15.13	9.14	16.00	9.50
			50	0	50	0	15.21	9.07	16.00	9.50
			50	24	50	24	15.12	9.13	16.00	9.50
			50	50	50	50	15.11	9.11	16.00	9.50
			100	0	100	0	15.14	9.03	16.00	9.50

For Handheld

CA_7A-2A

Combination 20MHz+20MHz (100RB+100RB)

PCC Channel	SCC Channel	Modulation	RB Size	RB Offset	RB Size	RB Offset	PCC Measured Power (dBm)	SCC Measured Power (dBm)	PCC Tune up Power (dBm)	SCC Tune up Power (dBm)
20850	18700	QPSK	1	0	1	0	18.20	10.42	20.00	12.00
			1	49	1	49	18.45	10.52	20.00	12.00
			1	99	1	99	18.35	10.51	20.00	12.00
			50	0	50	0	18.42	10.50	20.00	12.00
			50	24	50	24	18.24	10.35	20.00	12.00
			50	50	50	50	18.24	10.42	20.00	12.00
			100	0	100	0	18.15	10.53	20.00	12.00
21100	18900	QPSK	1	0	1	0	18.24	10.34	20.00	12.00
			1	49	1	49	18.26	10.42	20.00	12.00
			1	99	1	99	18.35	10.32	20.00	12.00
			50	0	50	0	18.21	10.34	20.00	12.00
			50	24	50	24	18.25	10.24	20.00	12.00
			50	50	50	50	18.31	10.34	20.00	12.00
			100	0	100	0	18.24	10.35	20.00	12.00
21350	19100	QPSK	1	0	1	0	18.25	10.37	20.00	12.00
			1	49	1	49	18.23	10.51	20.00	12.00
			1	99	1	99	18.23	10.36	20.00	12.00
			50	0	50	0	18.42	10.42	20.00	12.00
			50	24	50	24	18.42	10.35	20.00	12.00
			50	50	50	50	18.41	10.31	20.00	12.00
			100	0	100	0	18.24	10.30	20.00	12.00

Full Power Mode

2CA DL

Configure		CA List	PCC								SCC					Power	
			LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	DL Antenna Configuration	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	DL Antenna Configuration	With CA Tx. Power (dBm)	Without CA Tx. Power (dBm)
Inter-Band		CA_2A-5A	Band 2	20M	1880	18900	QPSK	1	0		Band 5	10M	881.5	2525		23.61	23.38
			Band 5	10M	836.5	20525	QPSK	1	0		Band 2	20M	1960	900		23.55	23.31
		CA_4A-5A	Band 4	20M	1732.5	20175	QPSK	1	0		Band 5	10M	881.5	2525		23.08	23.18
			Band 5	10M	836.5	20525	QPSK	1	0		Band 4	20M	2132.5	2175		23.56	23.31
		CA_4A4-5A	Band 4	20M	1732.5	20175	QPSK	1	0	4x4MIMO	Band 5	10M	881.5	2525		23.19	23.18
			Band 5	10M	836.5	20525	QPSK	1	0		Band 4	20M	2132.5	2175	4x4MIMO	23.13	23.31
		CA_4A-12A	Band 4	20M	1732.5	20175	QPSK	1	0		Band 12	10M	737.5	5095		23.09	23.18
			Band 12	10M	707.5	23095	QPSK	1	0		Band 4	20M	2132.5	2175		23	23.08
		CA_4A4-12A	Band 4	20M	1732.5	20175	QPSK	1	0	4x4MIMO	Band 12	10M	737.5	5095		23.21	23.18
			Band 12	10M	707.5	23095	QPSK	1	0		Band 4	20M	2132.5	2175	4x4MIMO	22.79	23.08
		CA_4A-17A	Band 4	10M	1732.5	20175	QPSK	1	0		Band 17	10M	740	5790		23.04	23.18
			Band 17	10M	710	23790	QPSK	1	0		Band 4	10M	2132.5	2175		22.94	23
		CA_4A4-17A	Band 4	10M	1732.5	20175	QPSK	1	0	4x4MIMO	Band 17	10M	740	5790		23.1	23.18
			Band 17	10M	710	23790	QPSK	1	0		Band 4	10M	2132.5	2175	4x4MIMO	22.22	23
		CA_5A-38A	Band 5	10M	836.5	20525	QPSK	1	0		Band 38	20M	2595	38000		23.52	23.31
			Band 38	20M	2595	38000	QPSK	1	0		Band 5	10M	881.5	2525		23.58	23.33
		CA_5A-38A4	Band 5	10M	836.5	20525	QPSK	1	0		Band 38	20M	2595	38000	4x4MIMO	22.94	23.31
			Band 38	20M	2595	38000	QPSK	1	0	4x4MIMO	Band 5	10M	881.5	2525		23.4	23.33
		CA_5A-41A	Band 5	10M	836.5	20525	QPSK	1	0		Band 41	20M	2593	40620		23.53	23.31
			Band 41	20M	2593	40620	QPSK	1	0		Band 5	10M	881.5	2525		23.44	23.43
		CA_5A-41A4	Band 5	10M	836.5	20525	QPSK	1	0		Band 41	20M	2593	40620	4x4MIMO	23.05	23.31
			Band 41	20M	2593	40620	QPSK	1	0	4x4MIMO	Band 5	10M	881.5	2525		23.01	23.43
Intra-Band	Contiguous	CA_7B	Band 7	15M	2507.5	20825	QPSK	1	74		Band 7	5M	2834.3	2918		23	23.08
		CA_7B4	Band 7	15M	2507.5	20825	QPSK	1	74	4x4MIMO	Band 7	5M	2834.3	2918	4x4MIMO	23.01	23.08
		CA_38C	Band 38	20M	2585.1	37901	QPSK	1	0		Band 38	20M	2604.9	2783.1		23.45	23.33
		CA_38C4	Band 38	20M	2585.1	37901	QPSK	1	0	4x4MIMO	Band 38	20M	2604.9	2783.1	4x4MIMO	23.35	23.33
		CA_41C	Band 41	20M	2593	40620	QPSK	1	0		Band 41	20M	2612.8	2791		23.48	23.43
		CA_41C4	Band 41	20M	2593	40620	QPSK	1	0	4x4MIMO	Band 41	20M	2612.8	2791	4x4MIMO	23.05	23.43
		CA_66B	Band 66	15M	1717.5	132047	QPSK	1	37		Band 66	5M	2126.8	66604		23.04	23.08
		CA_66B4	Band 66	15M	1717.5	132047	QPSK	1	37	4x4MIMO	Band 66	5M	2126.8	66604	4x4MIMO	23.03	23.08
		CA_66C	Band 66	20M	1745	132322	QPSK	1	0		Band 66	20M	2174.8	67084		23.13	23.27
		CA_66C4	Band 66	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 66	20M	2174.8	67084	4x4MIMO	22.97	23.27
	Non-Contiguous	CA_4A-4A	Band 4	20M	1732.5	20175	QPSK	1	0		Band 4	5M	2152.5	2375		22.7	23.18
		CA_4A4-4A4	Band 4	20M	1732.5	20175	QPSK	1	0	4x4MIMO	Band 4	5M	2152.5	2375	4x4MIMO	23.39	23.18
		CA_41A-41A	Band 41	20M	2593	40620	QPSK	1	0		Band 41	5M	2687.5	41565		23.3	23.43
		CA_41A4-41A4	Band 41	20M	2593	40620	QPSK	1	0	4x4MIMO	Band 41	5M	2687.5	41565	4x4MIMO	23.04	23.43

3CA DL

<Inter-Band for Three Carrier Combination> (two bands)

Configure		PCC								SCC1					SCC2					Power	
		LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	DL Antenna Configuration	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	DL Antenna Configuration	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	DL Antenna Configuration	With CA Tx. Power (dBm)	Without CA Tx. Power (dBm)
Inter-Band	CA_2A-7C	Band 2	20M	1880	18900	QPSK	1	0		Band 7	20M	2655	3100		Band 7	20M	2674.8	3298		23.58	23.38
		Band 7	20M	2535	21100	QPSK	1	0		Band 7	20M	2674.8	3298		Band 2	20M	1960	900		23.55	23.54
	CA_2A-7C4	Band 2	20M	1880	18900	QPSK	1	0		Band 7	20M	2655	3100	4x4MIMO	Band 7	20M	2674.8	3298	4x4MIMO	20.57	23.38
		Band 7	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	20M	2674.8	3298	4x4MIMO	Band 2	20M	1960	900		23.57	23.54
	CA_2A-7A-7A	Band 2	20M	1880	18900	QPSK	1	0		Band 7	20M	2655	3100		Band 7	5M	2687.5	3425		23.62	23.38
		Band 7	20M	2535	21100	QPSK	1	0		Band 7	5M	2687.5	3425		Band 2	20M	1960	900		23.57	23.54
	CA_2A-7A4-7A4	Band 2	20M	1880	18900	QPSK	1	0		Band 7	20M	2655	3100	4x4MIMO	Band 7	5M	2687.5	3425	4x4MIMO	20.66	23.38
		Band 7	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	5M	2687.5	3425	4x4MIMO	Band 2	20M	1960	900		23.62	23.54
	CA_4A-7C	Band 4	20M	1732.5	20175	QPSK	1	0		Band 7	20M	2655	3100		Band 7	20M	2674.8	3298		23.05	23.18
		Band 7	20M	2535	21100	QPSK	1	0		Band 7	20M	2674.8	3298		Band 4	20M	2132.5	2175		23.59	23.54
	CA_4A4-7C4	Band 4	20M	1732.5	20175	QPSK	1	0	4x4MIMO	Band 7	20M	2655	3100	4x4MIMO	Band 7	20M	2674.8	3298	4x4MIMO	21.81	23.18
		Band 7	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	20M	2674.8	3298	4x4MIMO	Band 4	20M	2132.5	2175	4x4MIMO	23.63	23.54
	CA_5A-7C4	Band 5	10M	836.5	20525	QPSK	1	0		Band 7	20M	2655	3100		Band 7	20M	2674.8	3298		23.55	23.31
		Band 7	20M	2535	21100	QPSK	1	0		Band 7	20M	2674.8	3298		Band 5	10M	881.5	2525		23.56	23.54
	CA_5A-7C4	Band 5	10M	836.5	20525	QPSK	1	0		Band 7	20M	2655	3100	4x4MIMO	Band 7	20M	2674.8	3298	4x4MIMO	23.27	23.31
		Band 7	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	20M	2674.8	3298	4x4MIMO	Band 5	10M	881.5	2525		22.39	23.54
	CA_5A-66A-66A	Band 5	10M	836.5	20525	QPSK	1	0		Band 66	20M	2155	66886		Band 66	5M	2197.5	67311		23.56	23.31
		Band 66	20M	1745	132322	QPSK	1	0		Band 66	5M	2197.5	67311		Band 5	10M	881.5	2525		22.41	23.27
	CA_5A-66A4-66A4	Band 5	10M	836.5	20525	QPSK	1	0		Band 66	20M	2155	66886	4x4MIMO	Band 66	5M	2197.5	67311	4x4MIMO	23.25	23.31
		Band 66	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 66	5M	2197.5	67311	4x4MIMO	Band 5	10M	881.5	2525		22.41	23.27
	CA_12A-66A-66A	Band 12	10M	707.5	23095	QPSK	1	0		Band 66	20M	2155	66886		Band 66	5M	2197.5	67311		23.05	23.08
		Band 66	20M	1745	132322	QPSK	1	0		Band 66	5M	2197.5	67311		Band 12	10M	737.5	5095		22.21	23.27
	CA_12A-66A4-66A4	Band 12	10M	707.5	23095	QPSK	1	0		Band 66	20M	2155	66886	4x4MIMO	Band 66	5M	2197.5	67311	4x4MIMO	22.08	23.08
		Band 66	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 66	5M	2197.5	67311	4x4MIMO	Band 12	10M	737.5	5095		22.5	23.27
	CA_26A_41C	Band 26	15M	831.5	26865	QPSK	1	0		Band 41	20M	2593	40620		Band 41	20M	19.8	40818		23.35	23.37
		Band 41	20M	2593	40620	QPSK	1	0		Band 41	20M	2612.8	40818		Band 26	15M	876.5	8865		23.28	23.43
	CA_26A_41C4	Band 26	15M	831.5	26865	QPSK	1	0		Band 41	20M	2593	40620	4x4MIMO	Band 41	20M	19.8	40818	4x4MIMO	23.31	23.37
		Band 41	20M	2593	40620	QPSK	1	0	4x4MIMO	Band 41	20M	2612.8	40818	4x4MIMO	Band 26	15M	876.5	8865		23.35	23.43

Reduced Power Mode for Sensor On
2CA DL

Configure		CA List	PCC								SCC					Power	
			LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	DL Antenna Configuration	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	DL Antenna Configuration	With CA Tx. Power (dBm)	Without CA Tx. Power (dBm)
Inter-Band		CA_2A-5A	Band 2	20M	1880	18900	QPSK	1	0		Band 5	10M	881.5	2525		16.42	16.56
			Band 5	10M	836.5	20525	QPSK	1	0		Band 2	20M	1960	900		22.36	22.26
		CA_4A-5A	Band 4	20M	1732.5	20175	QPSK	1	0		Band 5	10M	881.5	2525		16.61	16.69
			Band 5	10M	836.5	20525	QPSK	1	0		Band 4	20M	2132.5	2175		22.45	22.26
		CA_4A4-5A	Band 4	20M	1732.5	20175	QPSK	1	0	4x4MIMO	Band 5	10M	881.5	2525		16.49	16.69
			Band 5	10M	836.5	20525	QPSK	1	0		Band 4	20M	2132.5	2175	4x4MIMO	22.35	22.26
		CA_4A-12A	Band 4	20M	1732.5	20175	QPSK	1	0		Band 12	10M	737.5	5095		16.66	16.69
			Band 12	10M	707.5	23095	QPSK	1	0		Band 4	20M	2132.5	2175		22.57	23.08
		CA_4A4-12A	Band 4	20M	1732.5	20175	QPSK	1	0	4x4MIMO	Band 12	10M	737.5	5095		16.56	16.69
			Band 12	10M	707.5	23095	QPSK	1	0		Band 4	20M	2132.5	2175	4x4MIMO	22.45	23.08
		CA_4A-17A	Band 4	10M	1732.5	20175	QPSK	1	0		Band 17	10M	740	5790		15.63	15.72
			Band 17	10M	710	23790	QPSK	1	0		Band 4	10M	2132.5	2175		22.24	23
		CA_4A4-17A	Band 4	10M	1732.5	20175	QPSK	1	0	4x4MIMO	Band 17	10M	740	5790		15.7	15.72
			Band 17	10M	710	23790	QPSK	1	0		Band 4	10M	2132.5	2175	4x4MIMO	22.47	23
		CA_5A-38A	Band 5	10M	836.5	20525	QPSK	1	0		Band 38	20M	2595	38000		22.46	22.26
			Band 38	20M	2595	38000	QPSK	1	0		Band 5	10M	881.5	2525		18.05	18.55
		CA_5A-38A4	Band 5	10M	836.5	20525	QPSK	1	0		Band 38	20M	2595	38000	4x4MIMO	22.41	22.26
			Band 38	20M	2595	38000	QPSK	1	0	4x4MIMO	Band 5	10M	881.5	2525		18.1	18.55
		CA_5A-41A	Band 5	10M	836.5	20525	QPSK	1	0		Band 41	20M	2593	40620		22.42	22.26
			Band 41	20M	2593	40620	QPSK	1	0		Band 5	10M	881.5	2525		18.85	18.91
		CA_5A-41A4	Band 5	10M	836.5	20525	QPSK	1	0		Band 41	20M	2593	40620	4x4MIMO	22.41	22.26
			Band 41	20M	2593	40620	QPSK	1	0	4x4MIMO	Band 5	10M	881.5	2525		18.32	18.91
Intra-Band	Contiguous	CA_7B	Band 7	15M	2507.5	20825	QPSK	1	74		Band 7	5M	2834.3	2918		16.11	16.36
		CA_7B4	Band 7	15M	2507.5	20825	QPSK	1	74	4x4MIMO	Band 7	5M	2834.3	2918	4x4MIMO	16.23	16.36
		CA_38C	Band 38	20M	2585.1	37901	QPSK	1	0		Band 38	20M	2604.9	38099		18.6	18.55
		CA_38C4	Band 38	20M	2585.1	37901	QPSK	1	0	4x4MIMO	Band 38	20M	2604.9	38099	4x4MIMO	18.47	18.55
		CA_41C	Band 41	20M	2593	40620	QPSK	1	0		Band 41	20M	2612.8	40818		18.9	18.91
		CA_41C4	Band 41	20M	2593	40620	QPSK	1	0	4x4MIMO	Band 41	20M	2612.8	40818	4x4MIMO	18.2	18.91
		CA_66B	Band 66	15M	1717.5	132047	QPSK	1	37		Band 66	5M	2126.8	66604		16.02	16.43
		CA_66B4	Band 66	15M	1717.5	132047	QPSK	1	37	4x4MIMO	Band 66	5M	2126.8	66604	4x4MIMO	16.38	16.43
		CA_66C	Band 66	20M	1745	132322	QPSK	1	0		Band 66	20M	2174.8	67084		14.67	16.85
		CA_66C4	Band 66	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 66	20M	2174.8	67084	4x4MIMO	14.46	16.85
	Non-Contiguous	CA_4A-4A	Band 4	20M	1732.5	20175	QPSK	1	0		Band 4	5M	2152.5	2375		16.66	16.69
		CA_4A4-4A4	Band 4	20M	1732.5	20175	QPSK	1	0	4x4MIMO	Band 4	5M	2152.5	2375	4x4MIMO	16.67	16.69
		CA_41A-41A	Band 41	20M	2593	40620	QPSK	1	0		Band 41	5M	2687.5	41565		18.87	18.91
		CA_41A4-41A4	Band 41	20M	2593	40620	QPSK	1	0	4x4MIMO	Band 41	5M	2687.5	41565	4x4MIMO	18.16	18.91

3CA DL

<Inter-Band for Three Carrier Combination> (two bands)

Configure		PCC								SCC1					SCC2					Power	
		LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	DL Antenna Configuration	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	DL Antenna Configuration	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	DL Antenna Configuration	With CA Tx. Power (dBm)	Without CA Tx. Power (dBm)
Inter-Band	CA_2A-7C	Band 2	20M	1880	18900	QPSK	1	0		Band 7	20M	2655	3100		Band 7	20M	2674.8	3298		16.2	16.56
		Band 7	20M	2535	21100	QPSK	1	0		Band 7	20M	2674.8	3298		Band 2	20M	1960	900		16.91	16.83
	CA_2A-7C4	Band 2	20M	1880	18900	QPSK	1	0		Band 7	20M	2655	3100	4x4MIMO	Band 7	20M	2674.8	3298	4x4MIMO	15.21	16.56
		Band 7	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	20M	2674.8	3298	4x4MIMO	Band 2	20M	1960	900		15.87	16.83
	CA_2A-7A-7A	Band 2	20M	1880	18900	QPSK	1	0		Band 7	20M	2655	3100		Band 7	5M	2687.5	3425		16.21	16.56
		Band 7	20M	2535	21100	QPSK	1	0		Band 7	5M	2687.5	3425		Band 2	20M	1960	900		16.87	16.83
	CA_2A-7A4-7A4	Band 2	20M	1880	18900	QPSK	1	0		Band 7	20M	2655	3100	4x4MIMO	Band 7	5M	2687.5	3425	4x4MIMO	15.68	16.56
		Band 7	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	5M	2687.5	3425	4x4MIMO	Band 2	20M	1960	900		16.02	16.83
	CA_4A-7C	Band 4	20M	1732.5	20175	QPSK	1	0		Band 7	20M	2655	3100		Band 7	20M	2674.8	3298		16.57	16.69
		Band 7	20M	2535	21100	QPSK	1	0		Band 7	20M	2674.8	3298		Band 4	20M	2132.5	2175		17.05	16.83
	CA_4A4-7C4	Band 4	20M	1732.5	20175	QPSK	1	0	4x4MIMO	Band 7	20M	2655	3100	4x4MIMO	Band 7	20M	2674.8	3298	4x4MIMO	15.96	16.69
		Band 7	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	20M	2674.8	3298	4x4MIMO	Band 4	20M	2132.5	2175	4x4MIMO	15.74	16.83
	CA_5A-7C4	Band 5	10M	836.5	20525	QPSK	1	0		Band 7	20M	2655	3100		Band 7	20M	2674.8	3298		23.56	23.31
		Band 7	20M	2535	21100	QPSK	1	0		Band 7	20M	2674.8	3298		Band 5	10M	881.5	2525		16.99	16.83
	CA_5A-7C4	Band 5	10M	836.5	20525	QPSK	1	0		Band 7	20M	2655	3100	4x4MIMO	Band 7	20M	2674.8	3298	4x4MIMO	22.28	23.31
		Band 7	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	20M	2674.8	3298	4x4MIMO	Band 5	10M	881.5	2525		15.84	16.83
	CA_5A-66A-66A	Band 5	10M	836.5	20525	QPSK	1	0		Band 66	20M	2155	66886		Band 66	5M	2197.5	67311		23.55	23.31
		Band 66	20M	1745	132322	QPSK	1	0		Band 66	5M	2197.5	67311		Band 5	10M	881.5	2525		16.55	16.85
	CA_5A-66A4-66A4	Band 5	10M	836.5	20525	QPSK	1	0		Band 66	20M	2155	66886	4x4MIMO	Band 66	5M	2197.5	67311	4x4MIMO	22.55	23.31
		Band 66	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 66	5M	2197.5	67311	4x4MIMO	Band 5	10M	881.5	2525		16.7	16.85
	CA_12A-66A-66A	Band 12	10M	707.5	23095	QPSK	1	0		Band 66	20M	2155	66886		Band 66	5M	2197.5	67311		22.74	23.08
		Band 66	20M	1745	132322	QPSK	1	0		Band 66	5M	2197.5	67311		Band 12	10M	737.5	5095		16.47	16.85
	CA_12A-66A4-66A4	Band 12	10M	707.5	23095	QPSK	1	0		Band 66	20M	2155	66886	4x4MIMO	Band 66	5M	2197.5	67311	4x4MIMO	21.68	23.08
		Band 66	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 66	5M	2197.5	67311	4x4MIMO	Band 12	10M	737.5	5095		16.77	16.85
	CA_26A_41C	Band 26	15M	831.5	26865	QPSK	1	0		Band 41	20M	2593	40620		Band 41	20M	19.8	40818		22.12	22.29
		Band 41	20M	2593	40620	QPSK	1	0		Band 41	20M	2612.8	40818		Band 26	15M	876.5	8865		18.74	18.91
	CA_26A_41C4	Band 26	15M	831.5	26865	QPSK	1	0		Band 41	20M	2593	40620	4x4MIMO	Band 41	20M	19.8	40818	4x4MIMO	22.15	22.29
		Band 41	20M	2593	40620	QPSK	1	0	4x4MIMO	Band 41	20M	2612.8	40818	4x4MIMO	Band 26	15M	876.5	8865		18.68	18.91

Reduced Power Mode for Hotspot on
2CA DL

Configure		CA List	PCC								SCC					Power	
			LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	DL Antenna Configuration	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	DL Antenna Configuration	With CA Tx. Power (dBm)	Without CA Tx. Power (dBm)
Inter-Band		CA_2A-5A	Band 2	20M	1880	18900	QPSK	1	0		Band 5	10M	881.5	2525		15.04	15.13
			Band 5	10M	836.5	20525	QPSK	1	0		Band 2	20M	1960	900		22.36	22.26
		CA_4A-5A	Band 4	20M	1732.5	20175	QPSK	1	0		Band 5	10M	881.5	2525		14.67	15.46
			Band 5	10M	836.5	20525	QPSK	1	0		Band 4	20M	2132.5	2175		22.45	22.26
		CA_4A4-5A	Band 4	20M	1732.5	20175	QPSK	1	0	4x4MIMO	Band 5	10M	881.5	2525		13.24	15.46
			Band 5	10M	836.5	20525	QPSK	1	0		Band 4	20M	2132.5	2175	4x4MIMO	22.49	22.26
		CA_4A-12A	Band 4	20M	1732.5	20175	QPSK	1	0		Band 12	10M	737.5	5095		14.71	15.46
			Band 12	10M	707.5	23095	QPSK	1	0		Band 4	20M	2132.5	2175		21.65	23.08
		CA_4A4-12A	Band 4	20M	1732.5	20175	QPSK	1	0	4x4MIMO	Band 12	10M	737.5	5095		13.36	15.46
			Band 12	10M	707.5	23095	QPSK	1	0		Band 4	20M	2132.5	2175	4x4MIMO	21.43	23.08
		CA_4A-17A	Band 4	10M	1732.5	20175	QPSK	1	0		Band 17	10M	740	5790		14.68	15.29
			Band 17	10M	710	23790	QPSK	1	0		Band 4	10M	2132.5	2175		21.23	23
		CA_4A4-17A	Band 4	10M	1732.5	20175	QPSK	1	0	4x4MIMO	Band 17	10M	740	5790		14	15.29
			Band 17	10M	710	23790	QPSK	1	0		Band 4	10M	2132.5	2175	4x4MIMO	21.43	23
		CA_5A-38A	Band 5	10M	836.5	20525	QPSK	1	0		Band 38	20M	2595	38000		22.46	22.26
			Band 38	20M	2595	38000	QPSK	1	0		Band 5	10M	881.5	2525		15.27	15.78
		CA_5A-38A4	Band 5	10M	836.5	20525	QPSK	1	0		Band 38	20M	2595	38000	4x4MIMO	22.39	22.26
			Band 38	20M	2595	38000	QPSK	1	0	4x4MIMO	Band 5	10M	881.5	2525		14.25	15.78
		CA_5A-41A	Band 5	10M	836.5	20525	QPSK	1	0		Band 41	20M	2593	40620		22.33	22.26
			Band 41	20M	2593	40620	QPSK	1	0		Band 5	10M	881.5	2525		16	16.12
		CA_5A-41A4	Band 5	10M	836.5	20525	QPSK	1	0		Band 41	20M	2593	40620	4x4MIMO	22.51	22.26
			Band 41	20M	2593	40620	QPSK	1	0	4x4MIMO	Band 5	10M	881.5	2525		15.56	16.12
Intra-Band	Contiguous	CA_7B	Band 7	15M	2507.5	20825	QPSK	1	74		Band 7	5M	2834.3	2918		12.97	13.11
		CA_7B4	Band 7	15M	2507.5	20825	QPSK	1	74	4x4MIMO	Band 7	5M	2834.3	2918	4x4MIMO	13.03	13.11
		CA_38C	Band 38	20M	2585.1	37901	QPSK	1	0		Band 38	20M	2604.9	38099		15.75	15.78
		CA_38C4	Band 38	20M	2585.1	37901	QPSK	1	0	4x4MIMO	Band 38	20M	2604.9	38099	4x4MIMO	15.87	15.78
		CA_41C	Band 41	20M	2593	40620	QPSK	1	0		Band 41	20M	2612.8	40818		16.03	16.12
		CA_41C4	Band 41	20M	2593	40620	QPSK	1	0	4x4MIMO	Band 41	20M	2612.8	40818	4x4MIMO	15.61	16.12
		CA_66B	Band 66	15M	1717.5	132047	QPSK	1	37		Band 66	5M	2126.8	66604		16.37	16.44
		CA_66B4	Band 66	15M	1717.5	132047	QPSK	1	37	4x4MIMO	Band 66	5M	2126.8	66604	4x4MIMO	16.28	16.44
		CA_66C	Band 66	20M	1745	132322	QPSK	1	0		Band 66	20M	2174.8	67084		14.63	16.43
		CA_66C4	Band 66	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 66	20M	2174.8	67084	4x4MIMO	14.23	16.43
	Non-Contiguous	CA_4A-4A	Band 4	20M	1732.5	20175	QPSK	1	0		Band 4	5M	2152.5	2375		14.66	15.46
		CA_4A4-4A4	Band 4	20M	1732.5	20175	QPSK	1	0	4x4MIMO	Band 4	5M	2152.5	2375	4x4MIMO	14.55	15.46
		CA_41A-41A	Band 41	20M	2593	40620	QPSK	1	0		Band 41	5M	2687.5	41565		16.01	16.12
		CA_41A4-41A4	Band 41	20M	2593	40620	QPSK	1	0	4x4MIMO	Band 41	5M	2687.5	41565	4x4MIMO	15.67	16.12

3CA DL

<Inter-Band for Three Carrier Combination> (two bands)

Configure		PCC								SCC1					SCC2					Power	
		LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	DL Antenna Configuration	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	DL Antenna Configuration	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	DL Antenna Configuration	With CA Tx. Power (dBm)	Without CA Tx. Power (dBm)
Inter-Band	CA_2A-7C	Band 2	20M	1880	18900	QPSK	1	0		Band 7	20M	2655	3100		Band 7	20M	2674.8	3298		15.22	15.13
		Band 7	20M	2535	21100	QPSK	1	0		Band 7	20M	2674.8	3298		Band 2	20M	1960	900		13.08	13.17
	CA_2A-7C4	Band 2	20M	1880	18900	QPSK	1	0		Band 7	20M	2655	3100	4x4MIMO	Band 7	20M	2674.8	3298	4x4MIMO	14.2	15.13
		Band 7	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	20M	2674.8	3298	4x4MIMO	Band 2	20M	1960	900		11.73	13.17
	CA_2A-7A-7A	Band 2	20M	1880	18900	QPSK	1	0		Band 7	20M	2655	3100		Band 7	5M	2687.5	3425		15.19	15.13
		Band 7	20M	2535	21100	QPSK	1	0		Band 7	5M	2687.5	3425		Band 2	20M	1960	900		12.97	13.17
	CA_2A-7A4-7A4	Band 2	20M	1880	18900	QPSK	1	0		Band 7	20M	2655	3100	4x4MIMO	Band 7	5M	2687.5	3425	4x4MIMO	14.17	15.13
		Band 7	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	5M	2687.5	3425	4x4MIMO	Band 2	20M	1960	900		11.7	13.17
	CA_4A-7C	Band 4	20M	1732.5	20175	QPSK	1	0		Band 7	20M	2655	3100		Band 7	20M	2674.8	3298		14.83	15.46
		Band 7	20M	2535	21100	QPSK	1	0		Band 7	20M	2674.8	3298		Band 4	20M	2132.5	2175		13.21	13.17
	CA_4A4-7C4	Band 4	20M	1732.5	20175	QPSK	1	0	4x4MIMO	Band 7	20M	2655	3100	4x4MIMO	Band 7	20M	2674.8	3298	4x4MIMO	15.35	15.46
		Band 7	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	20M	2674.8	3298	4x4MIMO	Band 4	20M	2132.5	2175	4x4MIMO	11.67	13.17
	CA_5A-7C4	Band 5	10M	836.5	20525	QPSK	1	0		Band 7	20M	2655	3100		Band 7	20M	2674.8	3298		23.56	23.31
		Band 7	20M	2535	21100	QPSK	1	0		Band 7	20M	2674.8	3298		Band 5	10M	881.5	2525		13.15	13.17
	CA_5A-7C4	Band 5	10M	836.5	20525	QPSK	1	0		Band 7	20M	2655	3100	4x4MIMO	Band 7	20M	2674.8	3298	4x4MIMO	22.42	23.31
		Band 7	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	20M	2674.8	3298	4x4MIMO	Band 5	10M	881.5	2525		12.55	13.17
	CA_5A-66A-66A	Band 5	10M	836.5	20525	QPSK	1	0		Band 66	20M	2155	66886		Band 66	5M	2197.5	67311		23.55	23.31
		Band 66	20M	1745	132322	QPSK	1	0		Band 66	5M	2197.5	67311		Band 5	10M	881.5	2525		16.4	16.43
	CA_5A-66A4-66A4	Band 5	10M	836.5	20525	QPSK	1	0		Band 66	20M	2155	66886	4x4MIMO	Band 66	5M	2197.5	67311	4x4MIMO	22.32	23.31
		Band 66	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 66	5M	2197.5	67311	4x4MIMO	Band 5	10M	881.5	2525		14.1	16.43
	CA_12A-66A-66A	Band 12	10M	707.5	23095	QPSK	1	0		Band 66	20M	2155	66886		Band 66	5M	2197.5	67311		21.8	23.08
		Band 66	20M	1745	132322	QPSK	1	0		Band 66	5M	2197.5	67311		Band 12	10M	737.5	5095		15.41	16.43
	CA_12A-66A4-66A4	Band 12	10M	707.5	23095	QPSK	1	0		Band 66	20M	2155	66886	4x4MIMO	Band 66	5M	2197.5	67311	4x4MIMO	22.03	23.08
		Band 66	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 66	5M	2197.5	67311	4x4MIMO	Band 12	10M	737.5	5095		16.32	16.43
	CA_26A_41C	Band 26	15M	831.5	26865	QPSK	1	0		Band 41	20M	2593	40620		Band 41	20M	19.8	40818		21.85	22.29
		Band 41	20M	2593	40620	QPSK	1	0		Band 41	20M	2612.8	40818		Band 26	15M	876.5	8865		16.05	16.12
	CA_26A_41C4	Band 26	15M	831.5	26865	QPSK	1	0		Band 41	20M	2593	40620	4x4MIMO	Band 41	20M	19.8	40818	4x4MIMO	22.12	22.29
		Band 41	20M	2593	40620	QPSK	1	0	4x4MIMO	Band 41	20M	2612.8	40818	4x4MIMO	Band 26	15M	876.5	8865		16.11	16.12

Reduced Power Mode for Handheld on

2CA DL

Configure		CA List	PCC								SCC					Power	
			LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	DL Antenna Configuration	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	DL Antenna Configuration	With CA Tx. Power (dBm)	Without CA Tx. Power (dBm)
Inter-Band		CA_2A-5A	Band 2	20M	1880	18900	QPSK	1	0		Band 5	10M	881.5	2525		20.06	20.38
			Band 5	10M	836.5	20525	QPSK	1	0		Band 2	20M	1960	900		23.51	23.31
		CA_4A-5A	Band 4	20M	1732.5	20175	QPSK	1	0		Band 5	10M	881.5	2525		19.82	20.23
			Band 5	10M	836.5	20525	QPSK	1	0		Band 4	20M	2132.5	2175		23.27	23.31
		CA_4A4-5A	Band 4	20M	1732.5	20175	QPSK	1	0	4x4MIMO	Band 5	10M	881.5	2525		19.76	20.23
			Band 5	10M	836.5	20525	QPSK	1	0		Band 4	20M	2132.5	2175	4x4MIMO	22.63	23.31
		CA_4A-12A	Band 4	20M	1732.5	20175	QPSK	1	0		Band 12	10M	737.5	5095		19.79	20.23
			Band 12	10M	707.5	23095	QPSK	1	0		Band 4	20M	2132.5	2175		21.78	23.08
		CA_4A4-12A	Band 4	20M	1732.5	20175	QPSK	1	0	4x4MIMO	Band 12	10M	737.5	5095		19.79	20.23
			Band 12	10M	707.5	23095	QPSK	1	0		Band 4	20M	2132.5	2175	4x4MIMO	21.87	23.08
		CA_4A-17A	Band 4	10M	1732.5	20175	QPSK	1	0		Band 17	10M	740	5790		19.83	19.85
			Band 17	10M	710	23790	QPSK	1	0		Band 4	10M	2132.5	2175		21.47	23
		CA_4A4-17A	Band 4	10M	1732.5	20175	QPSK	1	0	4x4MIMO	Band 17	10M	740	5790		19.66	19.85
			Band 17	10M	710	23790	QPSK	1	0		Band 4	10M	2132.5	2175	4x4MIMO	21.78	23
Intra-Band	Contiguous	CA_7B	Band 7	15M	2507.5	20825	QPSK	1	74		Band 7	5M	2834.3	2918		20.73	20.98
		CA_7B4	Band 7	15M	2507.5	20825	QPSK	1	74	4x4MIMO	Band 7	5M	2834.3	2918	4x4MIMO	20.78	20.98
		CA_66B	Band 66	15M	1717.5	132047	QPSK	1	37		Band 66	5M	2126.8	66604		20.12	20.39
		CA_66B4	Band 66	15M	1717.5	132047	QPSK	1	37	4x4MIMO	Band 66	5M	2126.8	66604	4x4MIMO	20.21	20.39
		CA_66C	Band 66	20M	1745	132322	QPSK	1	0		Band 66	20M	2174.8	67084		20.3	20.35
		CA_66C4	Band 66	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 66	20M	2174.8	67084	4x4MIMO	19.12	20.35

3CA DL

<Inter-Band for Three Carrier Combination> (two bands)

Configure		PCC								SCC1					SCC2					Power	
		LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	DL Antenna Configuration	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	DL Antenna Configuration	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	DL Antenna Configuration	With CA Tx. Power (dBm)	Without CA Tx. Power (dBm)
Inter-Band	CA_2A-7C	Band 2	20M	1880	18900	QPSK	1	0		Band 7	20M	2655	3100		Band 7	20M	2674.8	3298		20.17	20.38
		Band 7	20M	2535	21100	QPSK	1	0		Band 7	20M	2674.8	3298		Band 2	20M	1960	900		21.34	21.46
	CA_2A-7C4	Band 2	20M	1880	18900	QPSK	1	0		Band 7	20M	2655	3100	4x4MIMO	Band 7	20M	2674.8	3298	4x4MIMO	20.03	20.38
		Band 7	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	20M	2674.8	3298	4x4MIMO	Band 2	20M	1960	900		20.79	21.46
	CA_2A-7A-7A	Band 2	20M	1880	18900	QPSK	1	0		Band 7	20M	2655	3100		Band 7	5M	2687.5	3425		20.19	20.38
		Band 7	20M	2535	21100	QPSK	1	0		Band 7	5M	2687.5	3425		Band 2	20M	1960	900		21.23	21.46
	CA_2A-7A4-7A4	Band 2	20M	1880	18900	QPSK	1	0		Band 7	20M	2655	3100	4x4MIMO	Band 7	5M	2687.5	3425	4x4MIMO	20.02	20.38
		Band 7	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	5M	2687.5	3425	4x4MIMO	Band 2	20M	1960	900		19.71	21.46
	CA_4A-7C	Band 4	20M	1732.5	20175	QPSK	1	0		Band 7	20M	2655	3100		Band 7	20M	2674.8	3298		19.82	20.23
		Band 7	20M	2535	21100	QPSK	1	0		Band 7	20M	2674.8	3298		Band 4	20M	2132.5	2175		21.31	21.46
	CA_4A4-7C4	Band 4	20M	1732.5	20175	QPSK	1	0	4x4MIMO	Band 7	20M	2655	3100	4x4MIMO	Band 7	20M	2674.8	3298	4x4MIMO	18.23	20.23
		Band 7	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	20M	2674.8	3298	4x4MIMO	Band 4	20M	2132.5	2175	4x4MIMO	19.7	21.46
	CA_5A-7C4	Band 5	10M	836.5	20525	QPSK	1	0		Band 7	20M	2655	3100		Band 7	20M	2674.8	3298		23.37	23.31
		Band 7	20M	2535	21100	QPSK	1	0		Band 7	20M	2674.8	3298		Band 5	10M	881.5	2525		21.34	21.46
	CA_5A-7C4	Band 5	10M	836.5	20525	QPSK	1	0		Band 7	20M	2655	3100	4x4MIMO	Band 7	20M	2674.8	3298	4x4MIMO	22.73	23.31
		Band 7	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	20M	2674.8	3298	4x4MIMO	Band 5	10M	881.5	2525		19.63	21.46
	CA_5A-66A-66A	Band 5	10M	836.5	20525	QPSK	1	0		Band 66	20M	2155	66886		Band 66	5M	2197.5	67311		23.35	23.31
		Band 66	20M	1745	132322	QPSK	1	0		Band 66	5M	2197.5	67311		Band 5	10M	881.5	2525		19.48	20.35
	CA_5A-66A4-66A4	Band 5	10M	836.5	20525	QPSK	1	0		Band 66	20M	2155	66886	4x4MIMO	Band 66	5M	2197.5	67311	4x4MIMO	22.75	23.31
		Band 66	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 66	5M	2197.5	67311	4x4MIMO	Band 5	10M	881.5	2525		19.23	20.35
	CA_12A-66A-66A	Band 12	10M	707.5	23095	QPSK	1	0		Band 66	20M	2155	66886		Band 66	5M	2197.5	67311		21.8	23.08
		Band 66	20M	1745	132322	QPSK	1	0		Band 66	5M	2197.5	67311		Band 12	10M	737.5	5095		20.3	20.35
	CA_12A-66A4-66A4	Band 12	10M	707.5	23095	QPSK	1	0		Band 66	20M	2155	66886	4x4MIMO	Band 66	5M	2197.5	67311	4x4MIMO	22.01	23.08
		Band 66	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 66	5M	2197.5	67311	4x4MIMO	Band 12	10M	737.5	5095		19.16	20.35
	CA_26A_41C	Band 26	15M	831.5	26865	QPSK	1	0		Band 41	20M	2593	40620		Band 41	20M	19.8	40818		23.28	23.37
		Band 41	20M	2593	40620	QPSK	1	0		Band 41	20M	2612.8	40818		Band 26	15M	876.5	8865		23.19	23.43
	CA_26A_41C4	Band 26	15M	831.5	26865	QPSK	1	0		Band 41	20M	2593	40620	4x4MIMO	Band 41	20M	19.8	40818	4x4MIMO	23.31	23.37
		Band 41	20M	2593	40620	QPSK	1	0	4x4MIMO	Band 41	20M	2612.8	40818	4x4MIMO	Band 26	15M	876.5	8865		23.28	23.43

Full Power Mode

n41 for FCC								
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				509202	518598	528000		
Frequency (MHz)				2546.01	2592.99	2640		
100	PI/2 BPSK	1	1	21.95	21.64	21.84	23.0	0.0
100	PI/2 BPSK	1	137	22.94	22.82	22.79		
100	PI/2 BPSK	1	271	22.90	22.42	22.81		
100	PI/2 BPSK	135	0	22.07	22.45	22.01	23.0	0.0
100	PI/2 BPSK	135	69	22.51	22.84	22.54		
100	PI/2 BPSK	135	138	22.52	22.58	22.13		
100	PI/2 BPSK	270	0	22.46	22.43	22.12	22.5	0.5
100	QPSK	1	1	21.86	21.72	21.85	23.0	0.0
100	QPSK	1	137	22.98	22.92	22.90		
100	QPSK	1	271	22.89	22.78	22.67		
100	QPSK	135	0	21.97	22.03	21.88	23.0	0.0
100	QPSK	135	69	22.97	22.85	22.94		
100	QPSK	135	138	22.32	22.23	22.64		
100	QPSK	270	0	21.96	21.94	21.79	22.0	1.0
100	16QAM	1	1	21.82	21.77	21.91	22.0	1.0
100	64QAM	1	1	20.37	20.46	20.11	20.5	2.5
100	256QAM	1	1	18.29	18.34	18.44	18.5	4.5
Channel				508200	518598	528996	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2541	2592.99	2644.98		
90	QPSK	1	120	22.92	22.90	22.95	23.0	0.0
Channel				507204	518598	529998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2536.02	2592.99	2649.99		
80	QPSK	1	109	22.96	22.95	22.92	23.0	0.0
Channel				505200	518598	531996	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2526	2592.99	2659.98		
60	QPSK	1	81	22.78	22.84	22.92	23.0	0.0
Channel				504204	518598	532998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2521.02	2592.99	2664.99		
50	QPSK	1	67	22.86	22.92	22.91	23.0	0.0
Channel				503202	518598	534000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2516.01	2592.99	2670		
40	QPSK	1	53	22.86	22.87	22.85	23.0	0.0
Channel				501204	518598	535998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2506.02	2592.99	2679.99		
20	QPSK	1	26	22.81	22.86	22.84	23.0	0.0

n41 for FCC For Head&Body Worn								
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				509202	518598	528000		
Frequency (MHz)				2546.01	2592.99	2640		
100	PI/2 BPSK	1	1	15.04	15.44	15.46	16.5	0.0
100	PI/2 BPSK	1	137	15.00	15.03	15.01		
100	PI/2 BPSK	1	271	15.07	15.46	14.99		
100	PI/2 BPSK	135	0	15.10	15.19	15.02	16.5	0.0
100	PI/2 BPSK	135	69	15.03	15.05	15.05		
100	PI/2 BPSK	135	138	15.06	15.16	14.87		
100	PI/2 BPSK	270	0	15.01	15.06	15.03	16.5	0.0
100	QPSK	1	1	15.06	15.01	15.06	16.5	0.0
100	QPSK	1	137	15.58	15.77	15.64		
100	QPSK	1	271	15.66	15.66	15.53		
100	QPSK	135	0	15.68	15.67	15.48	16.5	0.0
100	QPSK	135	69	15.66	15.76	15.63		
100	QPSK	135	138	15.63	15.58	15.72		
100	QPSK	270	0	15.61	15.73	15.44	16.5	0.0
100	16QAM	1	1	15.68	15.73	15.66	16.5	0.0
100	64QAM	1	1	15.71	15.62	15.71	16.5	0.0
100	256QAM	1	1	15.66	15.66	15.69	16.5	0.0
Channel				508200	518598	528996	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2541	2592.99	2644.98		
90	QPSK	1	120	15.72	15.69	15.71	16.5	0.0
Channel				507204	518598	529998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2536.02	2592.99	2649.99		
80	QPSK	1	109	15.63	15.55	15.73	16.5	0.0
Channel				505200	518598	531996	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2526	2592.99	2659.98		
60	QPSK	1	81	15.66	15.69	15.75	16.5	0.0
Channel				504204	518598	532998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2521.02	2592.99	2664.99		
50	QPSK	1	67	15.54	15.58	15.62	16.5	0.0
Channel				503202	518598	534000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2516.01	2592.99	2670		
40	QPSK	1	53	15.58	15.71	15.64	16.5	0.0
Channel				501204	518598	535998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2506.02	2592.99	2679.99		
20	QPSK	1	26	15.61	15.62	15.69	16.5	0.0

n41 for FCC For Hotspot								
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				509202	518598	528000		
Frequency (MHz)				2546.01	2592.99	2640		
100	PI/2 BPSK	1	1	13.66	13.56	13.72	15.0	0.0
100	PI/2 BPSK	1	137	13.69	13.63	13.81		
100	PI/2 BPSK	1	271	14.02	14.01	13.99		
100	PI/2 BPSK	135	0	13.78	13.89	13.85	15.0	0.0
100	PI/2 BPSK	135	69	13.59	13.64	13.73		
100	PI/2 BPSK	135	138	13.72	13.76	13.78		
100	PI/2 BPSK	270	0	13.78	13.71	13.76	15.0	0.0
100	QPSK	1	1	13.85	13.84	13.95	15.0	0.0
100	QPSK	1	137	13.92	14.11	13.95		
100	QPSK	1	271	13.89	13.99	14.03		
100	QPSK	135	0	13.75	13.72	13.69	15.0	0.0
100	QPSK	135	69	13.85	14.00	13.88		
100	QPSK	135	138	13.79	13.75	13.90		
100	QPSK	270	0	13.72	13.76	13.67	15.0	0.0
100	16QAM	1	1	13.82	13.81	13.88	15.0	0.0
100	64QAM	1	1	13.85	13.77	13.93	15.0	0.0
100	256QAM	1	1	13.63	13.68	13.82	15.0	0.0
Channel				508200	518598	528996	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2541	2592.99	2644.98		
90	QPSK	1	120	13.66	13.58	13.75	15.0	0.0
Channel				507204	518598	529998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2536.02	2592.99	2649.99		
80	QPSK	1	109	13.58	13.55	13.89	15.0	0.0
Channel				505200	518598	531996	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2526	2592.99	2659.98		
60	QPSK	1	81	13.68	13.64	13.91	15.0	0.0
Channel				504204	518598	532998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2521.02	2592.99	2664.99		
50	QPSK	1	67	13.72	13.72	13.94	15.0	0.0
Channel				503202	518598	534000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2516.01	2592.99	2670		
40	QPSK	1	53	13.61	13.78	13.87	15.0	0.0
Channel				501204	518598	535998	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2506.02	2592.99	2679.99		
20	QPSK	1	26	13.65	13.82	13.93	15.0	0.0