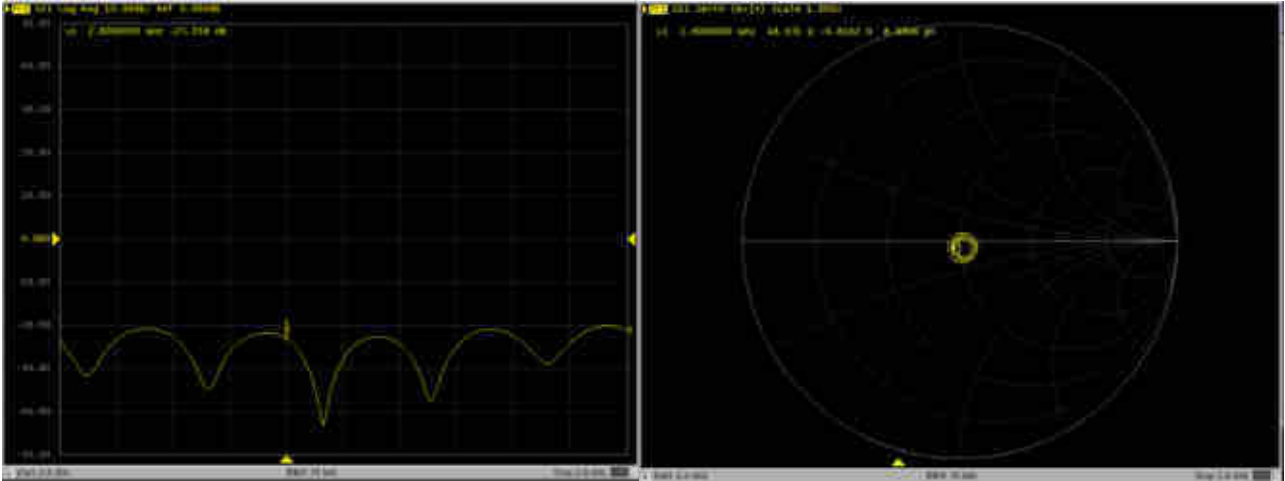


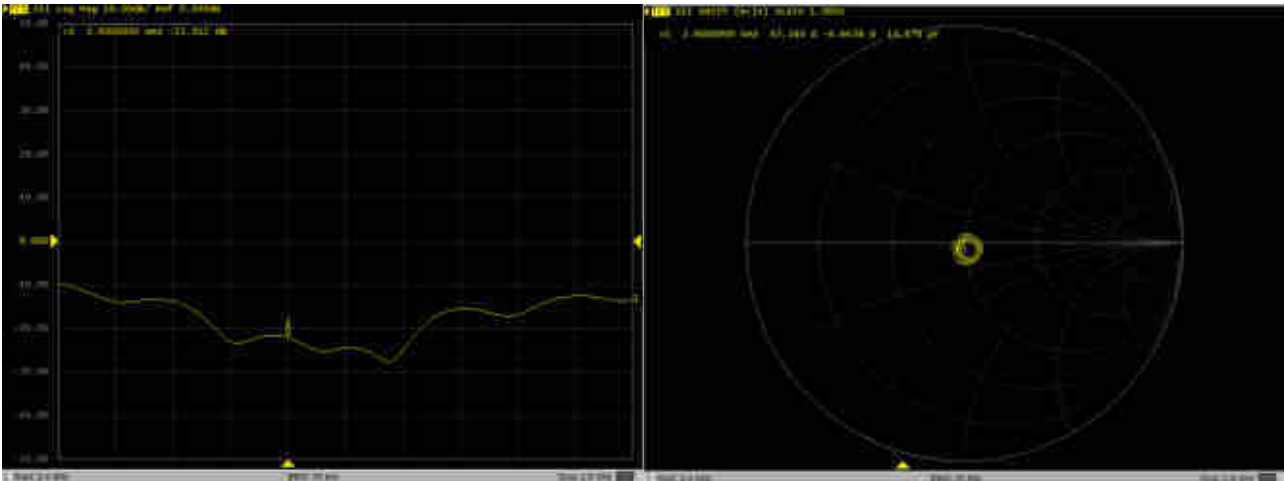


Dipole Verification Data> D2600V2, serial no. 1070

2600MHz - Head



2600MHz - Body





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Client **Sporton**

Certificate No: **Z18-60259**

CALIBRATION CERTIFICATE

Object **D5GHzV2 - SN: 1167**

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

Calibration date: **August 03, 2018**

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

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

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards | ID # | Cal Date(Calibrated by, Certificate No.) | Scheduled Calibration |
|-------------------------|------------|--|-----------------------|
| Power Meter NRP2 | 102083 | 01-Nov-17 (CTTL, No.J17X08756) | Oct-18 |
| Power sensor NRP-Z91 | 100542 | 01-Nov-17 (CTTL, No.J17X08756) | Oct-18 |
| ReferenceProbe EX3DV4 | SN 7464 | 12-Sep-17(SPEAG,No.EX3-7464_Sep17) | Sep-18 |
| DAE4 | SN 1524 | 13-Sep-17(SPEAG,No.DAE4-1524_Sep17) | Sep-18 |
| Secondary Standards | ID # | Cal Date(Calibrated by, Certificate No.) | Scheduled Calibration |
| Signal Generator E4438C | MY49071430 | 23-Jan-18 (CTTL, No.J18X00560) | Jan-19 |
| NetworkAnalyzerE5071C | MY46110673 | 24-Jan-18 (CTTL, No.J18X00561) | Jan-19 |

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

Issued: August 6, 2018

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



Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

- DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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



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Measurement Conditions

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

| | | |
|------------------------------|--|----------------------------------|
| DASY Version | DASY52 | 52.10.1.1476 |
| Extrapolation | Advanced Extrapolation | |
| Phantom | Triple Flat Phantom 5.1C | |
| Distance Dipole Center - TSL | 10 mm | with Spacer |
| Zoom Scan Resolution | dx, dy = 4 mm, dz = 1.4 mm | Graded Ratio = 1.4 (Z direction) |
| Frequency | 5250 MHz ± 1 MHz 5600 MHz ± 1 MHz 5750 MHz ± 1 MHz | |

Head TSL parameters at 5250 MHz

The following parameters and calculations were applied.

| | Temperature | Permittivity | Conductivity |
|---|-----------------|--------------|------------------|
| Nominal Head TSL parameters | 22.0 °C | 35.9 | 4.71 mho/m |
| Measured Head TSL parameters | (22.0 ± 0.2) °C | 35.9 ± 6 % | 4.82 mho/m ± 6 % |
| Head TSL temperature change during test | <1.0 °C | ---- | ---- |

SAR result with Head TSL at 5250 MHz

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



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Head TSL parameters at 5600 MHz

The following parameters and calculations were applied.

| | Temperature | Permittivity | Conductivity |
|---|-----------------|--------------|------------------|
| Nominal Head TSL parameters | 22.0 °C | 35.5 | 5.07 mho/m |
| Measured Head TSL parameters | (22.0 ± 0.2) °C | 35.1 ± 6 % | 5.18 mho/m ± 6 % |
| Head TSL temperature change during test | <1.0 °C | ---- | ---- |

SAR result with Head TSL at 5600 MHz

| | | |
|---|--------------------|-----------------------------------|
| SAR averaged over 1 cm ³ (1 g) of Head TSL | Condition | |
| SAR measured | 100 mW input power | 8.09 mW / g |
| SAR for nominal Head TSL parameters | normalized to 1W | 80.8 mW / g ± 24.4 % (k=2) |
| SAR averaged over 10 cm ³ (10 g) of Head TSL | Condition | |
| SAR measured | 100 mW input power | 2.32 mW / g |
| SAR for nominal Head TSL parameters | normalized to 1W | 23.2 mW / g ± 24.2 % (k=2) |

Head TSL parameters at 5750 MHz

The following parameters and calculations were applied.

| | Temperature | Permittivity | Conductivity |
|---|-----------------|--------------|------------------|
| Nominal Head TSL parameters | 22.0 °C | 35.4 | 5.22 mho/m |
| Measured Head TSL parameters | (22.0 ± 0.2) °C | 34.9 ± 6 % | 5.37 mho/m ± 6 % |
| Head TSL temperature change during test | <1.0 °C | ---- | ---- |

SAR result with Head TSL at 5750 MHz

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



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Body TSL parameters at 5250 MHz

The following parameters and calculations were applied.

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

SAR result with Body TSL at 5250 MHz

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

Body TSL parameters at 5600 MHz

The following parameters and calculations were applied.

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

SAR result with Body TSL at 5600 MHz

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



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Body TSL parameters at 5750 MHz

The following parameters and calculations were applied.

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

SAR result with Body TSL at 5750 MHz

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



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Appendix (Additional assessments outside the scope of CNAS L0570)

Antenna Parameters with Head TSL at 5250 MHz

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

Antenna Parameters with Head TSL at 5600 MHz

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

Antenna Parameters with Head TSL at 5750 MHz

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

Antenna Parameters with Body TSL at 5250 MHz

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

Antenna Parameters with Body TSL at 5600 MHz

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

Antenna Parameters with Body TSL at 5750 MHz

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



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General Antenna Parameters and Design

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

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

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

Additional EUT Data

| | |
|-----------------|-------|
| Manufactured by | SPEAG |
|-----------------|-------|



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DASY5 Validation Report for Head TSL

Date: 07.27.2018

Test Laboratory: CTTL, Beijing, China

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

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

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

Phantom section: Center Section

DASY5 Configuration:

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

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

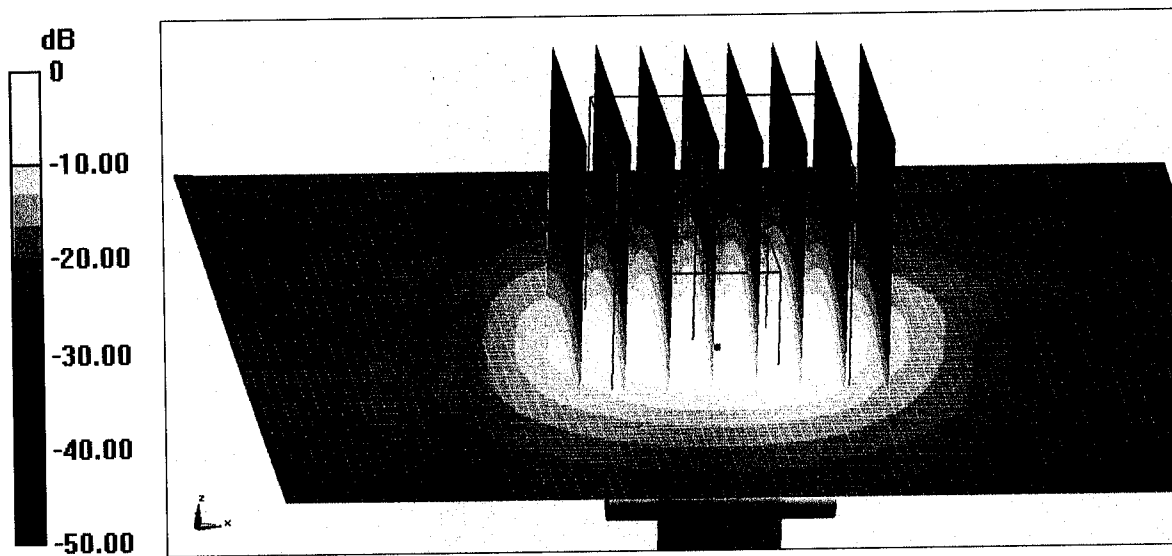
Dipole Calibration /Pin=100mW, d=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 63.53 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 36.2 W/kg
SAR(1 g) = 8.09 W/kg; SAR(10 g) = 2.32 W/kg
Maximum value of SAR (measured) = 19.7 W/kg

Dipole Calibration /Pin=100mW, d=10mm, f=5750 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 63.79 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 36.2 W/kg
SAR(1 g) = 7.7 W/kg; SAR(10 g) = 2.17 W/kg
Maximum value of SAR (measured) = 19.0 W/kg



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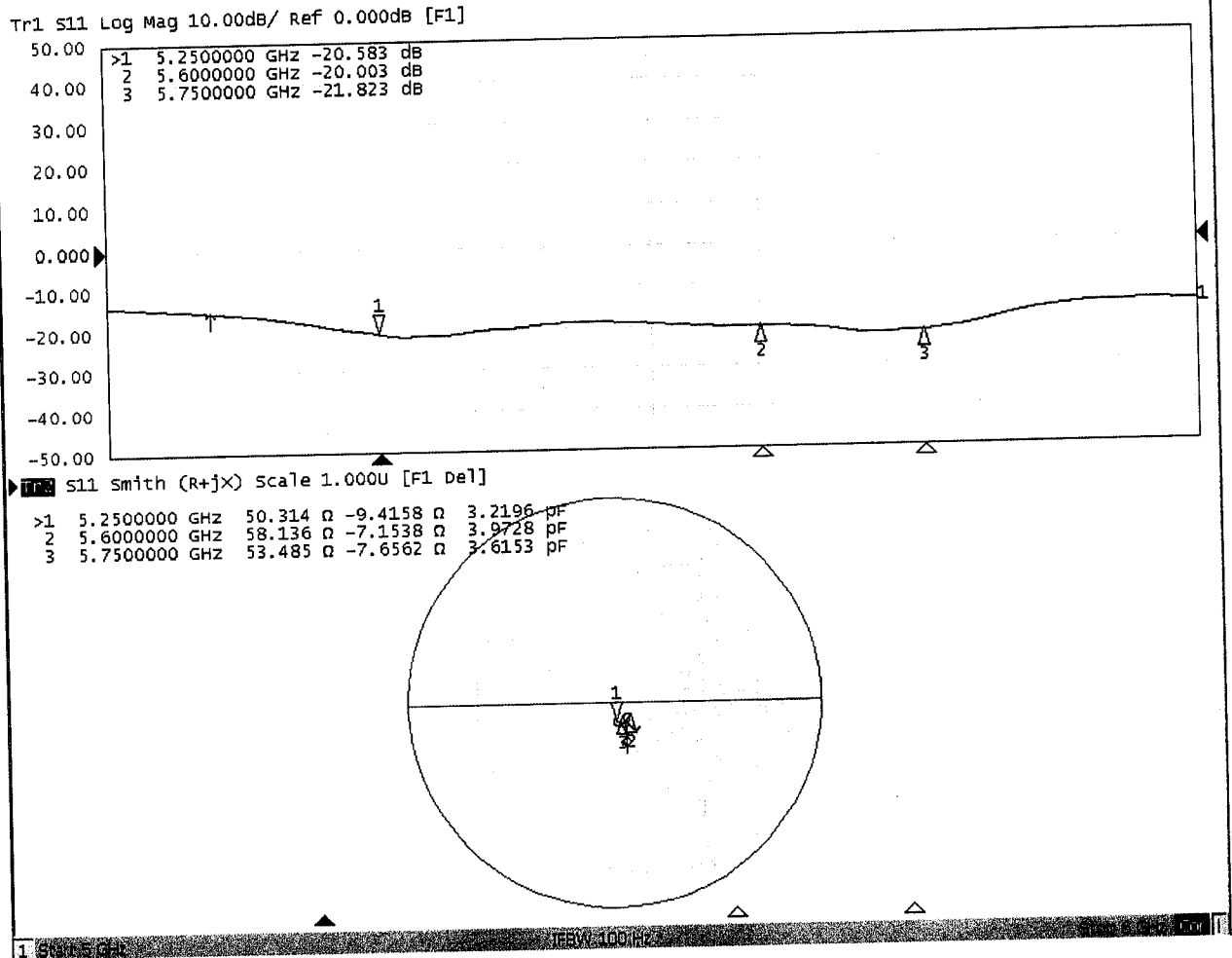


0 dB = 19.0 W/kg = 12.79 dBW/kg



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Impedance Measurement Plot for Head TSL





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DASY5 Validation Report for Body TSL

Date: 08.02.2018

Test Laboratory: CTTL, Beijing, China

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

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

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

Phantom section: Right Section

DASY5 Configuration:

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

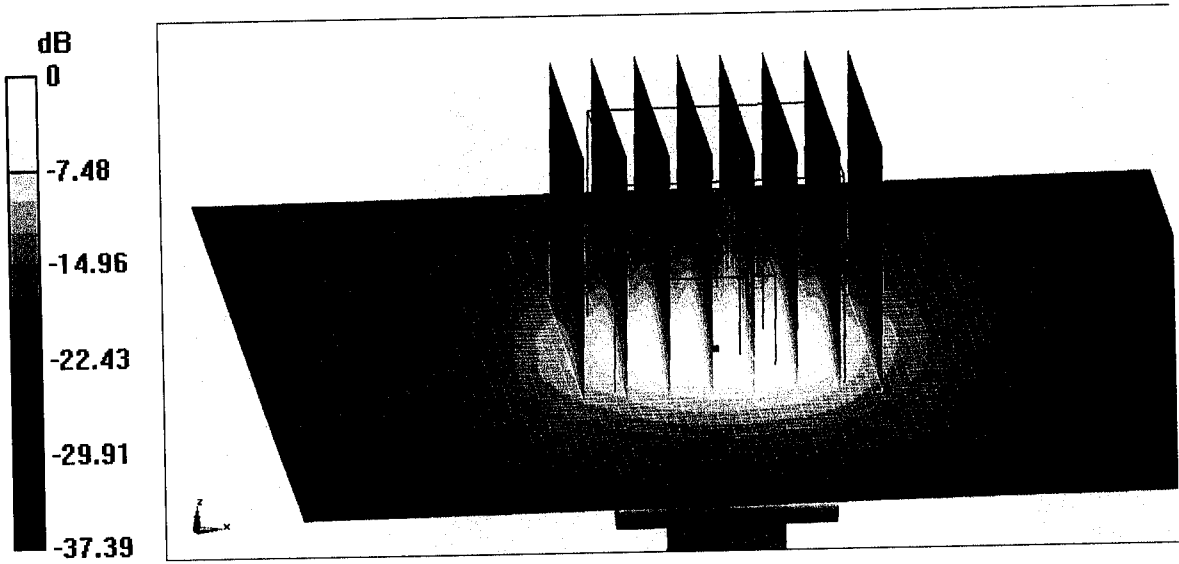
Dipole Calibration /Pin=100mW, d=10mm, f=5250 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 64.14 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 31.9 W/kg
SAR(1 g) = 7.46 W/kg; SAR(10 g) = 2.1 W/kg
Maximum value of SAR (measured) = 17.6 W/kg

Dipole Calibration /Pin=100mW, d=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 62.32 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 36.3 W/kg
SAR(1 g) = 7.73 W/kg; SAR(10 g) = 2.16 W/kg
Maximum value of SAR (measured) = 19.1 W/kg

Dipole Calibration /Pin=100mW, d=10mm, f=5750 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 63.99 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 35.2 W/kg
SAR(1 g) = 7.43 W/kg; SAR(10 g) = 2.08 W/kg
Maximum value of SAR (measured) = 18.0 W/kg



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

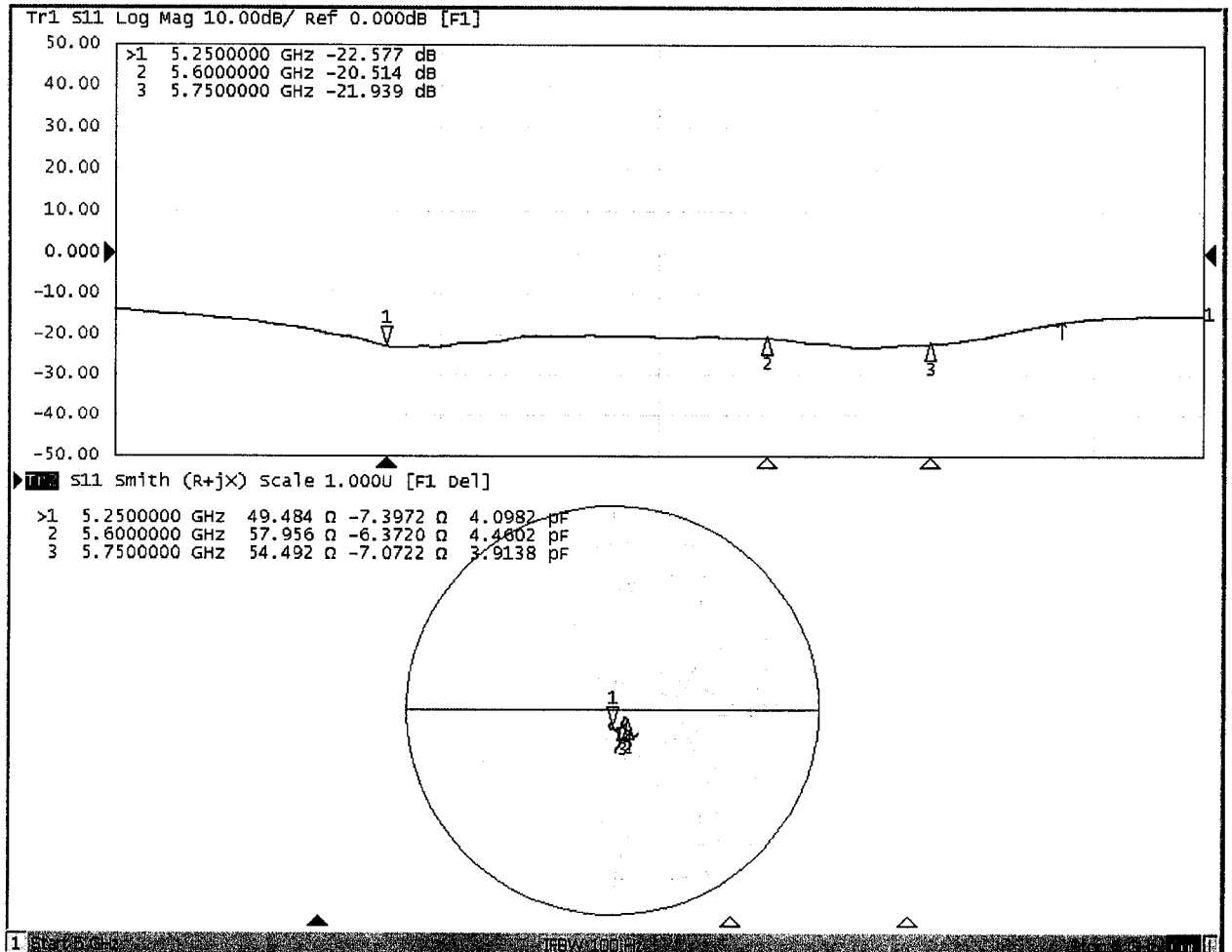


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Impedance Measurement Plot for Body TSL

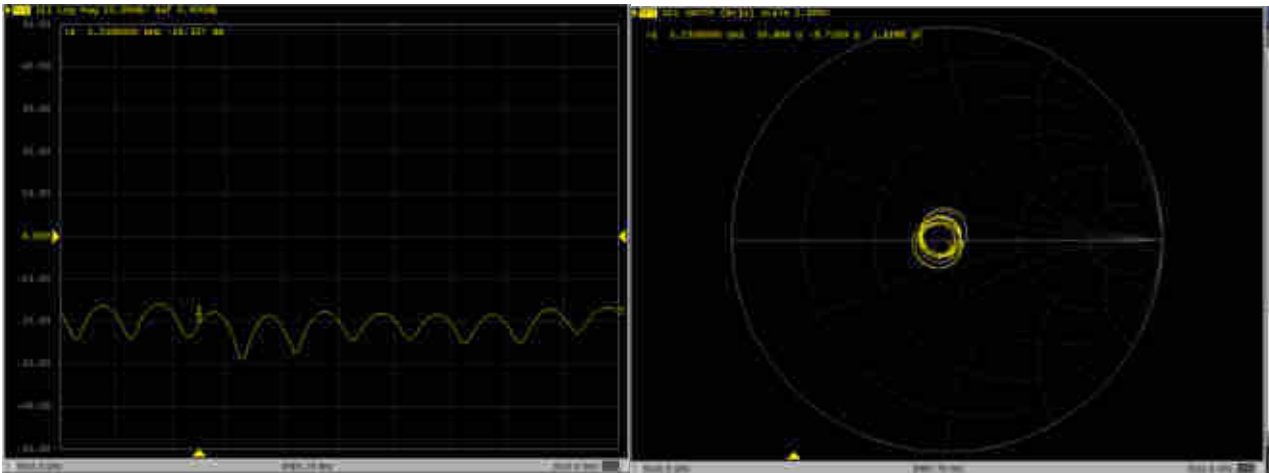


<Justification of the extended calibration>

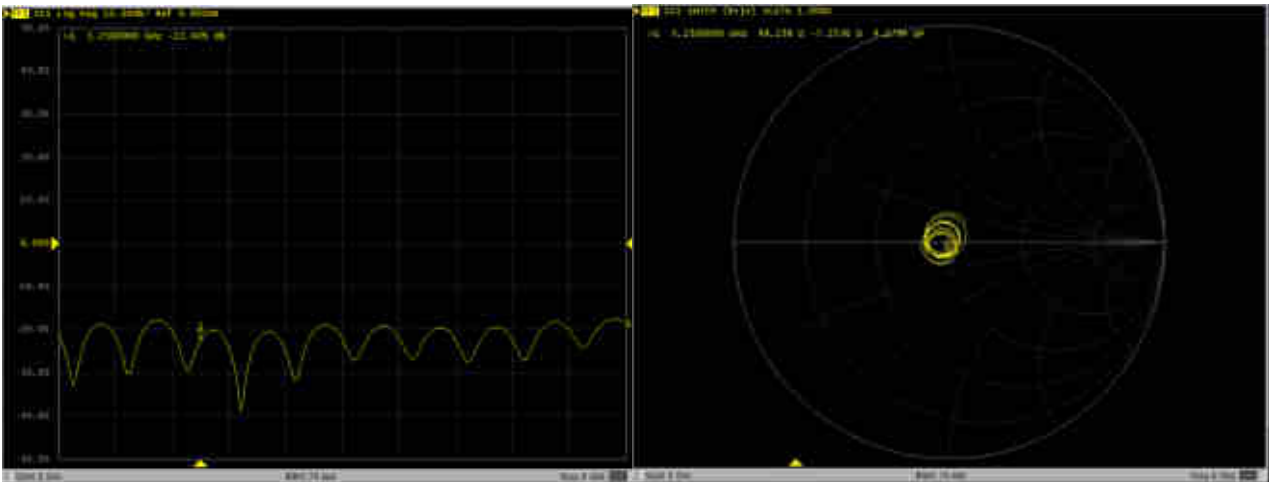
The return loss is < -20dB, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

Dipole Verification Data> D5GHzV3, serial no. 1167

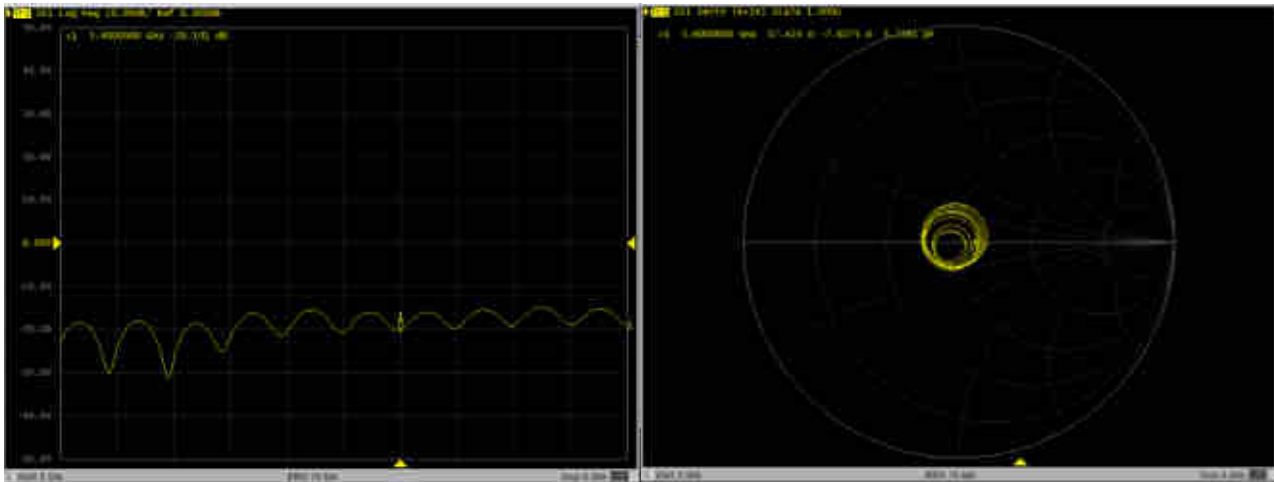
5250MHz - Head



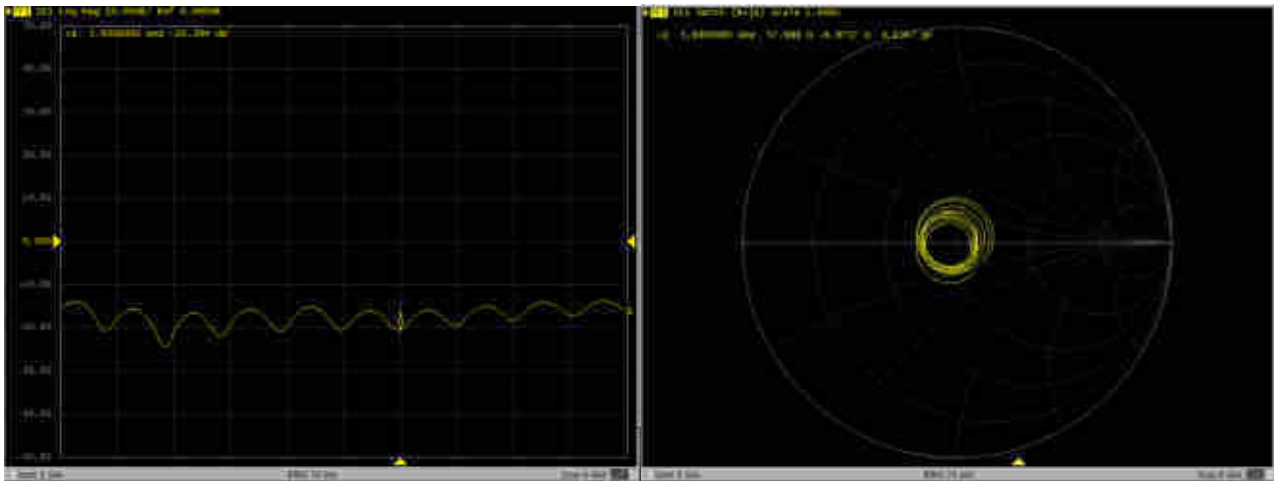
5250MHz - Body



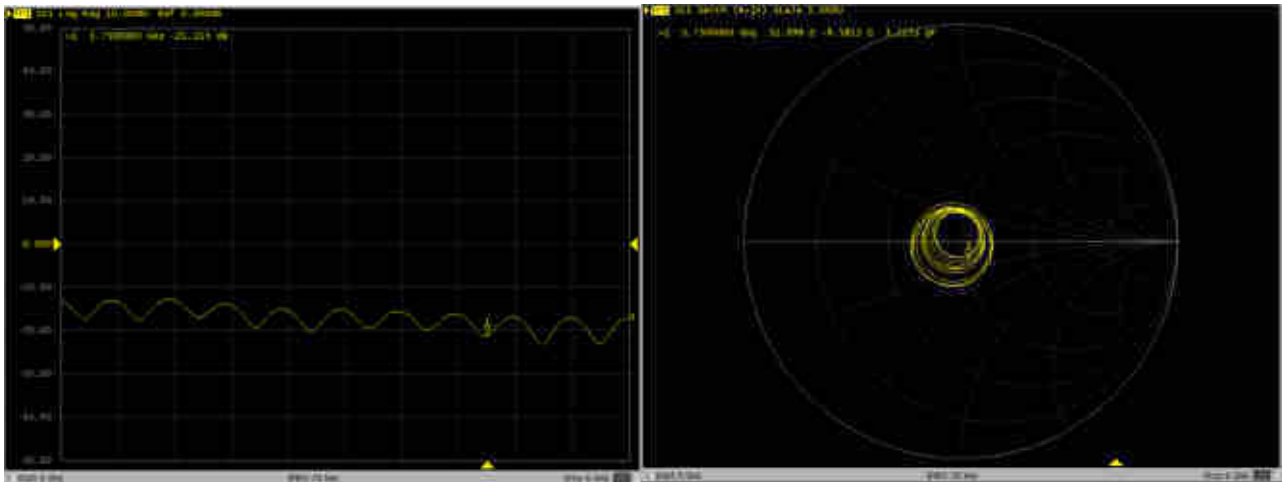
5600MHz – Head



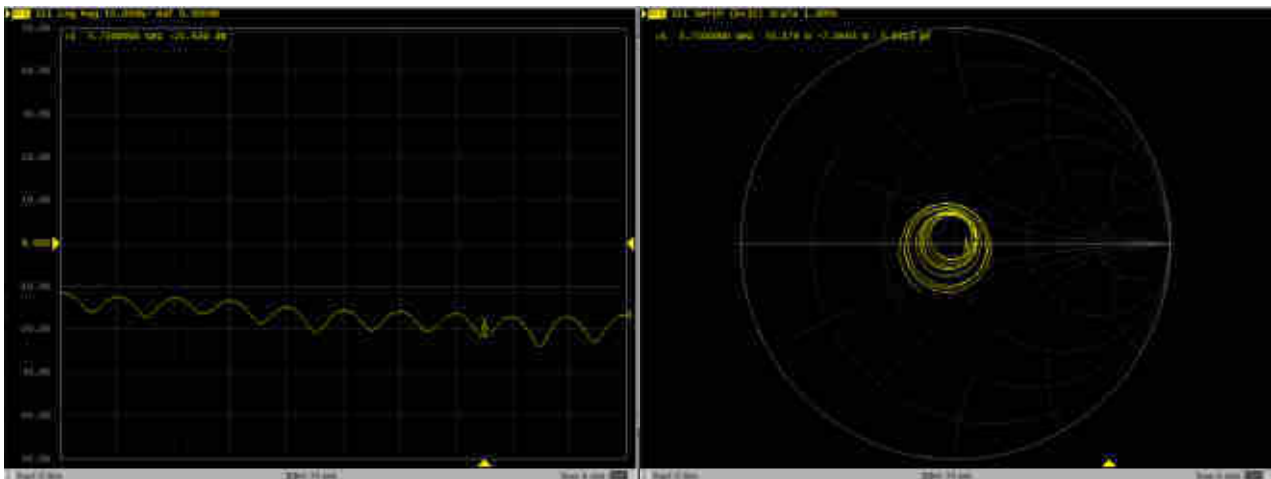
5600MHz – Body



5750MHz – Head



5750MHz – Body





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Certificate No: Z19-60436

Client : **Sporton**

CALIBRATION CERTIFICATE

Object: DAE4 - SN: 1437

Calibration Procedure(s): FF-Z11-002-01
Calibration Procedure for the Data Acquisition Electronics (DAEx)

Calibration date: November 19, 2019

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

All calibrations have been conducted in the closed laboratory facility: environment temperature(22±3)°C 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 |
|----------------|-------------|--------------------|
| Calibrated by: | Yu Zongying | SAR Test Engineer |
| Reviewed by: | Zhao Jing | SAR Test Engineer |
| Approved by: | Qi Dianyuan | SAR Project Leader |

Signature

Issued: November 21, 2019

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In Collaboration with

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CALIBRATION LABORATORY

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Glossary:

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

Methods Applied and Interpretation of Parameters:

- *DC Voltage Measurement:* Calibration Factor assessed for use in DASY system by comparison with a calibrated instrument traceable to national standards. The figure given corresponds to the full scale range of the voltmeter in the respective range.
- *Connector angle:* The angle of the connector is assessed measuring the angle mechanically by a tool inserted. Uncertainty is not required.
- The report provide only calibration results for DAE, it does not contain other performance test results.



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DC Voltage Measurement

A/D - Converter Resolution nominal

High Range: 1LSB = 6.1 μ V, full range = -100...+300 mV
 Low Range: 1LSB = 61nV, full range = -1.....+3mV

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

| Calibration Factors | X | Y | Z |
|---------------------|---------------------------|---------------------------|---------------------------|
| High Range | 404.110 \pm 0.15% (k=2) | 403.634 \pm 0.15% (k=2) | 404.056 \pm 0.15% (k=2) |
| Low Range | 3.95185 \pm 0.7% (k=2) | 3.93955 \pm 0.7% (k=2) | 3.90561 \pm 0.7% (k=2) |

Connector Angle

| | |
|---|----------------------------------|
| Connector Angle to be used in DASY system | 65 $^{\circ}$ \pm 1 $^{\circ}$ |
|---|----------------------------------|



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client **Auden**

Certificate No: **DAE3-528_Mar20**

CALIBRATION CERTIFICATE

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

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

Calibration date: **March 16, 2020**

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

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

Calibration Equipment used (M&TE critical for calibration)

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

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

Issued: March 16, 2020

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Glossary

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

Methods Applied and Interpretation of Parameters

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

DC Voltage Measurement

A/D - Converter Resolution nominal

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

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

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

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

Connector Angle

| | |
|---|--|
| Connector Angle to be used in DASY system | 50.0 ^o \pm 1 ^o |
|---|--|

Appendix (Additional assessments outside the scope of SCS0108)

1. DC Voltage Linearity

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

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

2. Common mode sensitivity

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

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

3. Channel separation

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

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

4. AD-Converter Values with inputs shorted

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

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

5. Input Offset Measurement

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

Input 10M Ω

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

6. Input Offset Current

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

7. Input Resistance (Typical values for information)

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

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

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

9. Power Consumption (Typical values for information)

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



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Accreditation No.: SCS 0108

Client: Sporton

Certificate No: EX3-3819_Apr20

CALIBRATION CERTIFICATE

Object: EX3DV4 - SN:3819

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

Calibration date: April 30, 2020

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

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

Calibration Equipment used (M&TE critical for calibration)

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

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

Issued: April 30, 2020

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Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

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

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

Basic Calibration Parameters

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

Calibration Results for Modulation Response

| UID | Communication System Name | | A dB | B dB/ μV | C | D dB | VR mV | Max dev. | Unc ^C (k=2) |
|-----|---------------------------|---|---------|------------------------|-----|---------|----------|-------------|---------------------------|
| 0 | CW ^D | X | 0.0 | 0.0 | 1.0 | 0.00 | 156.7 | ± 3.5 % | ± 4.7 % |
| | | Y | 0.0 | 0.0 | 1.0 | | 148.5 | | |
| | | Z | 0.0 | 0.0 | 1.0 | | 139.2 | | |

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

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

^B Numerical linearization parameter; uncertainty not required.

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

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

Other Probe Parameters

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

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

Calibration Parameter Determined in Head Tissue Simulating Media

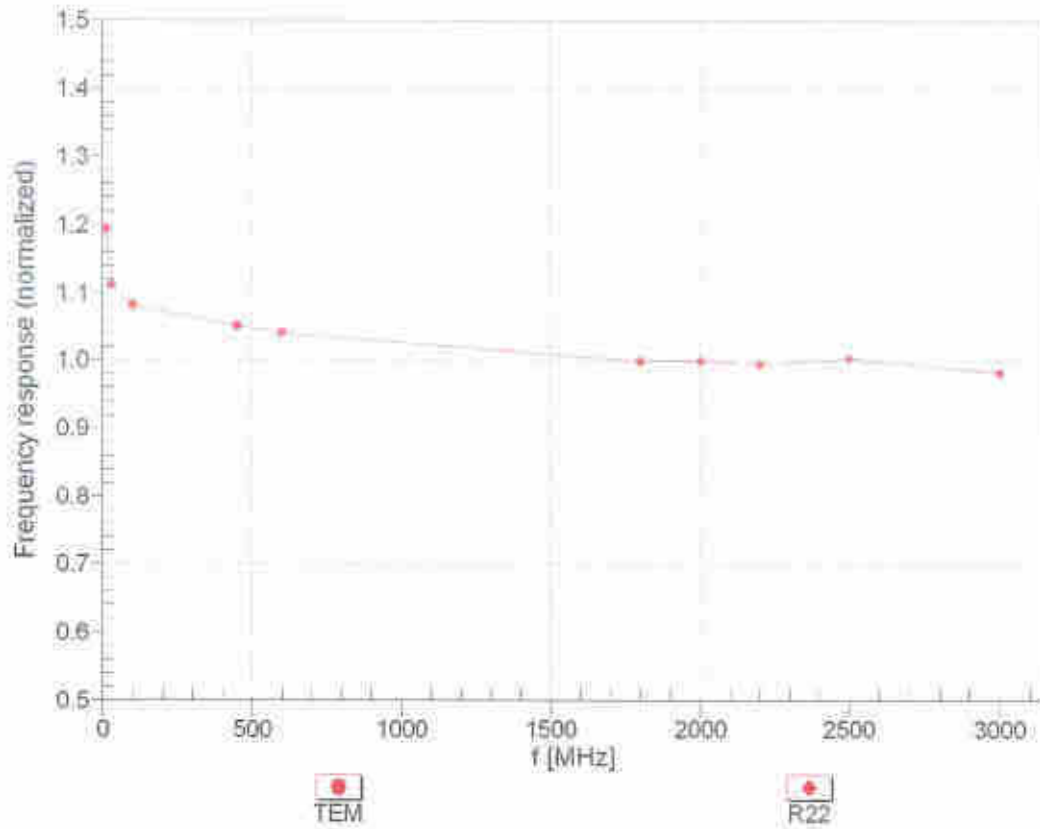
| f (MHz) ^c | Relative Permittivity ^f | Conductivity (S/m) ^f | ConvF X | ConvF Y | ConvF Z | Alpha ^g | Depth (mm) ^g | Unc (k=2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|--------------------|-------------------------|-----------|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

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

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

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

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



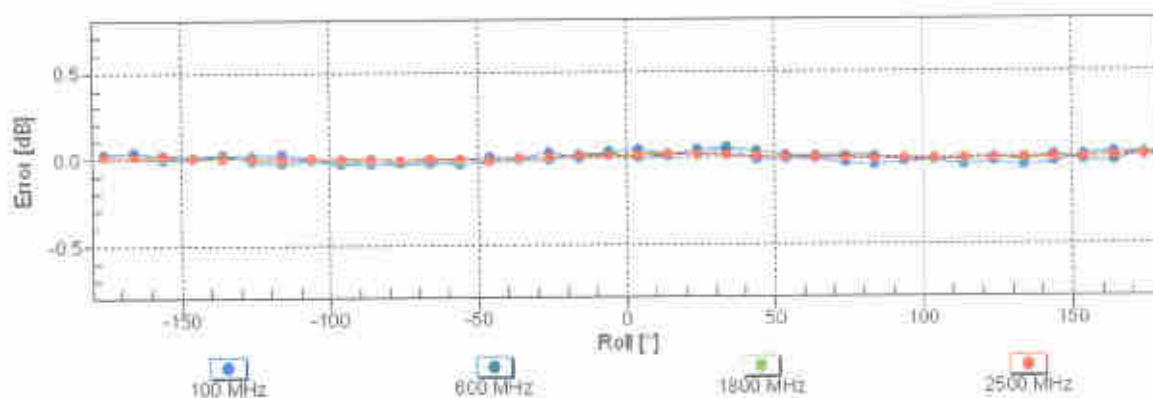
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ (k=2)

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

f=600 MHz,TEM

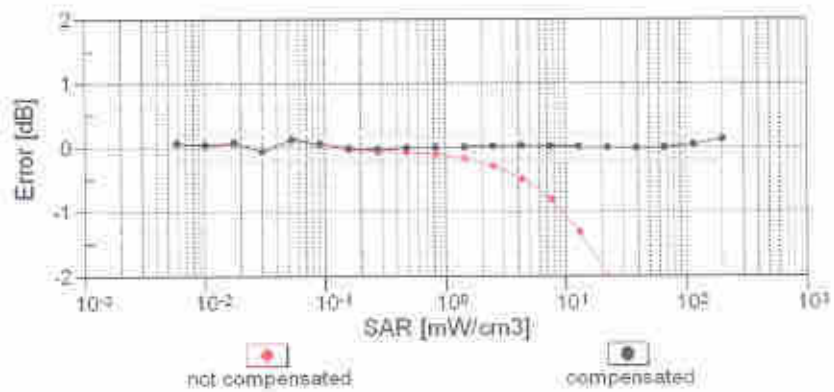
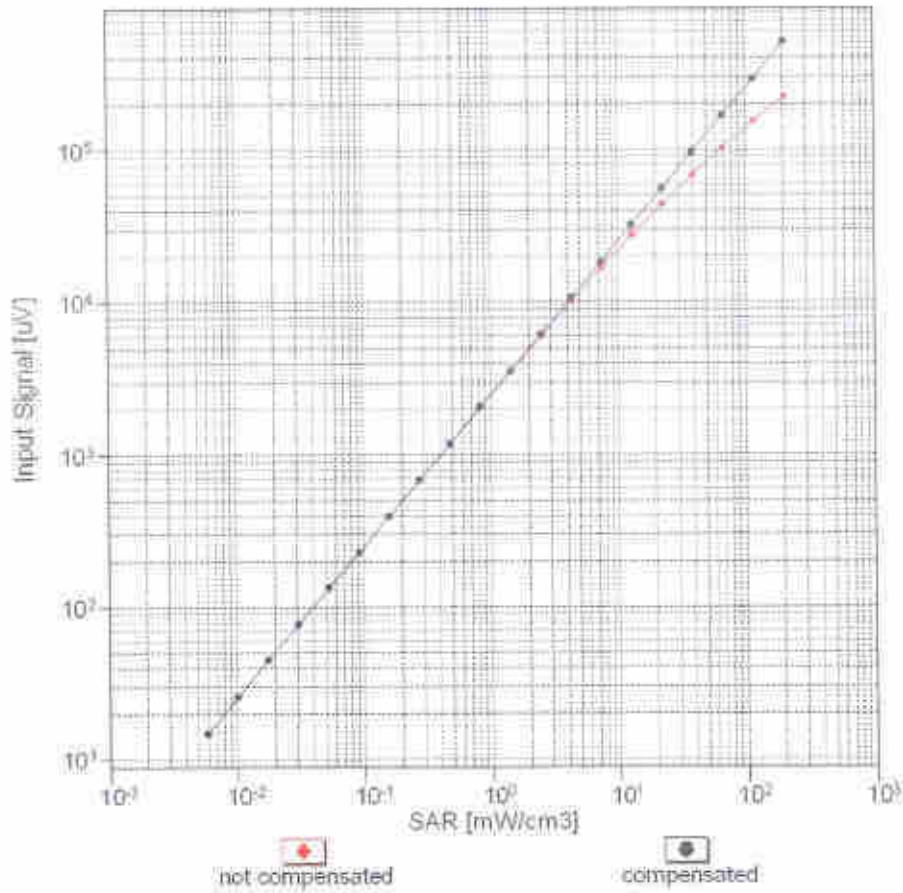


f=1800 MHz,R22



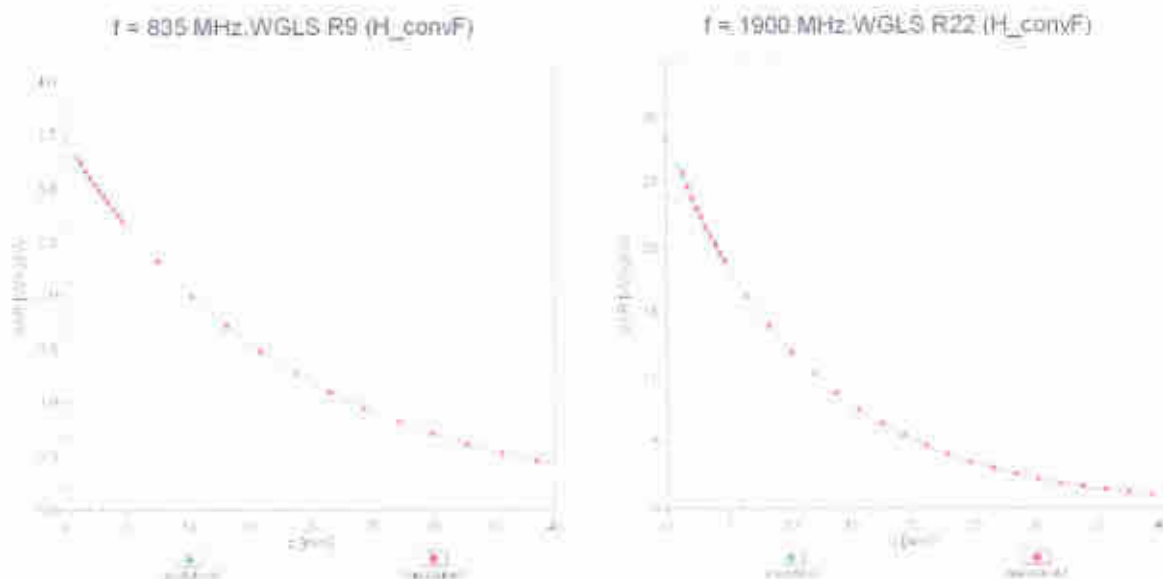
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ (k=2)

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

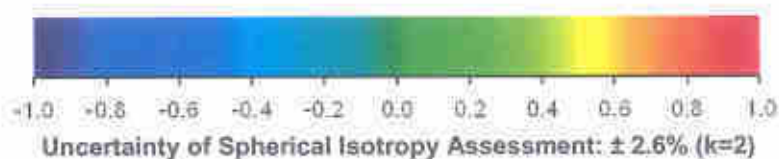
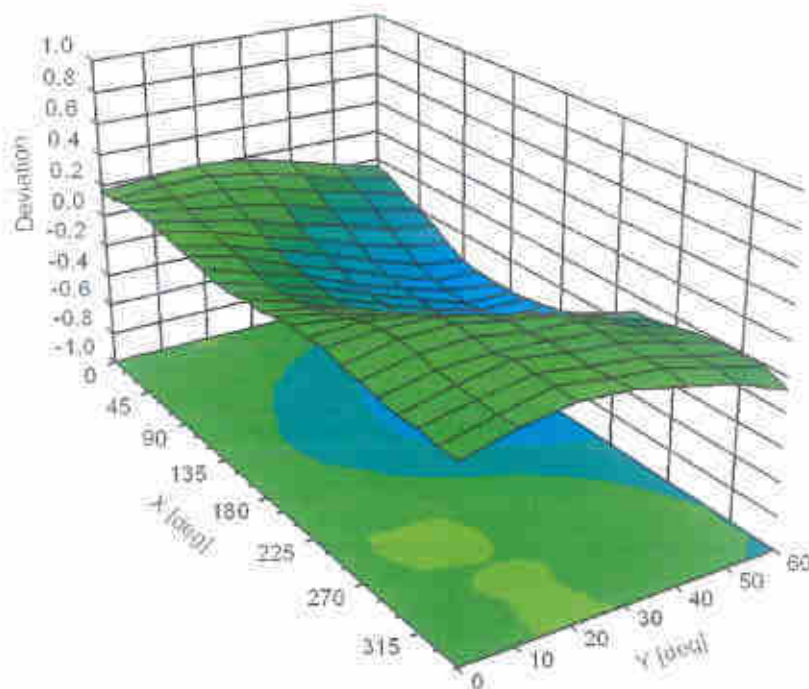


Uncertainty of Linearity Assessment: $\pm 0.6\%$ (k=2)

Conversion Factor Assessment



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





Appendix E. Conducted RF Output Power Table

The detailed power tables are shown as follows.



WWAN Bottom Antenna--Receiver on

| GSM850 | Burst Average Power (dBm) | | | Tune-up Limit (dBm) | Frame-Average Power (dBm) | | | Tune-up Limit (dBm) |
|-----------------------|---------------------------|-------|-------|---------------------|---------------------------|-------|-------|---------------------|
| | 128 | 169 | 251 | | 128 | 169 | 251 | |
| TX Channel | 128 | 169 | 251 | Limit | 128 | 169 | 251 | Limit |
| Frequency (MHz) | 124.2 | 165.4 | 243.3 | (dBm) | 124.2 | 165.4 | 243.3 | (dBm) |
| GSM 1 Tx slot | 32.51 | 32.86 | 32.87 | 34.00 | 23.51 | 23.86 | 23.87 | 25.00 |
| GPRS 1 Tx slot | 32.49 | 32.79 | 32.86 | 34.00 | 23.49 | 23.79 | 23.86 | 25.00 |
| GPRS 2 Tx slots | 30.90 | 30.93 | 30.91 | 32.00 | 24.90 | 24.93 | 24.91 | 26.00 |
| GPRS 3 Tx slots | 28.44 | 28.66 | 28.85 | 30.00 | 24.18 | 24.40 | 24.59 | 25.74 |
| GPRS 4 Tx slots | 27.94 | 28.10 | 28.08 | 29.00 | 24.94 | 25.10 | 25.08 | 26.00 |
| EDGE(GMSK 1 Tx slot) | 32.41 | 32.74 | 32.82 | 34.00 | 23.41 | 23.74 | 23.82 | 25.00 |
| EDGE(GMSK 2 Tx slots) | 30.88 | 30.90 | 30.86 | 32.00 | 24.88 | 24.90 | 24.88 | 26.00 |
| EDGE(GMSK 3 Tx slots) | 28.39 | 28.61 | 28.82 | 30.00 | 24.13 | 24.35 | 24.56 | 25.74 |
| EDGE(GMSK 4 Tx slots) | 27.91 | 28.08 | 28.01 | 29.00 | 24.91 | 25.08 | 25.01 | 26.00 |
| EDGE(BPSK 1 Tx slot) | 25.53 | 25.67 | 25.61 | 27.00 | 16.53 | 16.67 | 16.61 | 18.00 |
| EDGE(BPSK 2 Tx slots) | 24.42 | 24.19 | 24.34 | 25.50 | 16.42 | 16.19 | 16.34 | 19.50 |
| EDGE(BPSK 3 Tx slots) | 23.41 | 22.92 | 23.20 | 24.50 | 19.15 | 18.66 | 18.94 | 20.24 |
| EDGE(BPSK 4 Tx slots) | 22.64 | 22.31 | 22.47 | 23.50 | 19.64 | 19.31 | 19.47 | 20.50 |

| GSM1900 | Burst Average Power (dBm) | | | Tune-up Limit (dBm) | Frame-Average Power (dBm) | | | Tune-up Limit (dBm) |
|-----------------------|---------------------------|-------|--------|---------------------|---------------------------|-------|--------|---------------------|
| | 512 | 661 | 810 | | 512 | 661 | 810 | |
| TX Channel | 512 | 661 | 810 | Limit | 512 | 661 | 810 | Limit |
| Frequency (MHz) | 1850.2 | 1880 | 1909.8 | (dBm) | 1850.2 | 1880 | 1909.8 | (dBm) |
| GSM 1 Tx slot | 29.62 | 29.46 | 28.96 | 30.50 | 20.62 | 20.46 | 19.96 | 21.50 |
| GPRS 1 Tx slot | 29.61 | 29.45 | 28.94 | 30.50 | 20.61 | 20.45 | 19.94 | 21.50 |
| GPRS 2 Tx slots | 27.01 | 26.95 | 26.36 | 28.00 | 21.01 | 20.95 | 20.36 | 22.00 |
| GPRS 3 Tx slots | 26.17 | 26.08 | 25.51 | 27.00 | 21.91 | 21.82 | 21.25 | 22.74 |
| GPRS 4 Tx slots | 24.97 | 24.92 | 24.33 | 26.00 | 21.97 | 21.92 | 21.33 | 23.00 |
| EDGE(GMSK 1 Tx slot) | 29.56 | 29.41 | 28.92 | 30.50 | 20.56 | 20.41 | 19.92 | 21.50 |
| EDGE(GMSK 2 Tx slots) | 27.00 | 26.92 | 26.31 | 28.00 | 21.00 | 20.92 | 20.31 | 22.00 |
| EDGE(GMSK 3 Tx slots) | 26.12 | 26.03 | 25.45 | 27.00 | 21.86 | 21.77 | 21.19 | 22.74 |
| EDGE(GMSK 4 Tx slots) | 24.92 | 24.89 | 24.31 | 26.00 | 21.92 | 21.89 | 21.31 | 23.00 |
| EDGE(BPSK 1 Tx slot) | 24.66 | 24.41 | 24.10 | 25.50 | 15.66 | 15.41 | 15.10 | 16.50 |
| EDGE(BPSK 2 Tx slots) | 24.09 | 23.67 | 23.46 | 25.00 | 16.09 | 17.67 | 17.49 | 19.00 |
| EDGE(BPSK 3 Tx slots) | 22.67 | 22.52 | 22.12 | 23.50 | 18.41 | 18.26 | 17.86 | 19.24 |
| EDGE(BPSK 4 Tx slots) | 21.02 | 20.62 | 20.35 | 22.00 | 18.02 | 17.62 | 17.35 | 19.00 |

| Band | Tx Channel | WCDMA II | | | Tune-up Limit (dBm) | WCDMA IV | | | Tune-up Limit (dBm) | WCDMA V | | | Tune-up Limit (dBm) |
|-------------|-------------------------|----------|-------|-------|---------------------|----------|-------|-------|---------------------|---------|-------|-------|---------------------|
| | | 9262 | 9400 | 9538 | | 1312 | 1413 | 1513 | | 4132 | 4182 | 4233 | |
| | Rx Channel | 9662 | 9800 | 9938 | | 1537 | 1638 | 1738 | | 4357 | 4407 | 4458 | |
| | Frequency (MHz) | 1522 | 1599 | 1676 | | 1724 | 1723 | 1725 | | 325 | 330 | 335 | |
| 3GPP Rel 99 | AMR 12.2Kbps | 24.46 | 24.44 | 24.54 | 25.50 | 24.32 | 24.33 | 24.13 | 25.30 | 23.65 | 23.74 | 23.81 | 25.00 |
| 3GPP Rel 99 | RMC 12.2Kbps | 24.47 | 24.45 | 24.58 | 25.50 | 24.34 | 24.35 | 24.17 | 25.30 | 23.66 | 23.75 | 23.82 | 25.00 |
| 3GPP Rel 6 | HSDPA Subtest-1 | 23.12 | 23.03 | 23.14 | 24.50 | 22.95 | 22.96 | 22.85 | 24.30 | 22.34 | 22.45 | 22.58 | 24.00 |
| 3GPP Rel 6 | HSDPA Subtest-2 | 23.14 | 23.08 | 23.18 | 24.50 | 22.92 | 22.95 | 22.84 | 24.30 | 22.34 | 22.46 | 22.58 | 24.00 |
| 3GPP Rel 6 | HSDPA Subtest-3 | 22.66 | 22.54 | 22.66 | 24.00 | 22.28 | 22.33 | 22.27 | 23.80 | 21.87 | 21.96 | 22.09 | 23.50 |
| 3GPP Rel 6 | HSDPA Subtest-4 | 22.66 | 22.50 | 22.66 | 24.00 | 22.31 | 22.32 | 22.25 | 23.80 | 21.84 | 21.96 | 22.08 | 23.50 |
| 3GPP Rel 8 | DC-HSDPA Subtest-1 | 23.08 | 23.01 | 23.03 | 24.50 | 22.89 | 22.92 | 22.81 | 24.30 | 22.29 | 22.34 | 22.45 | 24.00 |
| 3GPP Rel 8 | DC-HSDPA Subtest-2 | 23.07 | 23.02 | 23.04 | 24.50 | 22.87 | 22.91 | 22.82 | 24.30 | 22.28 | 22.33 | 22.43 | 24.00 |
| 3GPP Rel 8 | DC-HSDPA Subtest-3 | 22.42 | 22.41 | 22.52 | 24.00 | 22.16 | 22.21 | 22.08 | 23.80 | 21.79 | 21.88 | 21.99 | 23.50 |
| 3GPP Rel 8 | DC-HSDPA Subtest-4 | 22.41 | 22.39 | 22.51 | 24.00 | 22.17 | 22.20 | 22.07 | 23.80 | 21.80 | 21.89 | 21.99 | 23.50 |
| 3GPP Rel 6 | HSUPA Subtest-1 | 20.49 | 20.49 | 20.57 | 22.00 | 20.32 | 20.36 | 20.22 | 21.80 | 21.86 | 21.91 | 22.07 | 24.00 |
| 3GPP Rel 6 | HSUPA Subtest-2 | 18.58 | 18.51 | 18.59 | 20.00 | 18.42 | 18.47 | 18.36 | 19.80 | 19.85 | 19.98 | 20.17 | 22.00 |
| 3GPP Rel 6 | HSUPA Subtest-3 | 19.62 | 19.52 | 19.55 | 21.00 | 19.51 | 19.58 | 19.42 | 20.80 | 20.88 | 20.99 | 21.15 | 23.00 |
| 3GPP Rel 6 | HSUPA Subtest-4 | 18.77 | 18.52 | 18.52 | 20.00 | 18.66 | 18.76 | 18.47 | 19.80 | 19.83 | 20.03 | 20.17 | 22.00 |
| 3GPP Rel 6 | HSUPA Subtest-5 | 20.50 | 20.50 | 20.60 | 22.00 | 20.60 | 20.70 | 20.50 | 21.90 | 21.90 | 22.00 | 22.10 | 24.00 |
| 3GPP Rel 7 | HSPA+ (16QAM) Subtest-1 | 18.38 | 18.42 | 18.51 | 19.50 | 18.25 | 18.33 | 18.24 | 19.30 | 19.72 | 19.83 | 19.94 | 21.50 |



| Band 26 for FCC (only on channel required) | | | | | | | | | |
|---|------------|---------|-----------|--------------------|-----------------------|---------------------|---------------------------|-------------|--|
| BW [MHz] | Modulation | RB Size | RB Offset | Power | | | Tune-up limit (dBm) | MPR (dB) | |
| | | | | Low Ch. / Freq. | Middle Ch. / Freq. | High Ch. / Freq. | | | |
| Channel | | | | 26745 | 26865 | 26990 | | | |
| Frequency (MHz) | | | | 821.5 | 831.5 | 841.5 | | | |
| 15 | QPSK | 1 | 0 | 23.78 | 23.81 | 23.82 | 24.8 | 0 | |
| 15 | QPSK | 1 | 37 | 23.47 | 23.40 | 23.48 | | | |
| 15 | QPSK | 1 | 74 | 23.70 | 23.49 | 23.32 | | | |
| 15 | QPSK | 36 | 0 | 22.62 | 22.68 | 22.49 | 23.8 | 1 | |
| 15 | QPSK | 36 | 20 | 22.52 | 22.90 | 22.53 | | | |
| 15 | QPSK | 36 | 39 | 22.53 | 22.70 | 22.57 | | | |
| 15 | QPSK | 75 | 0 | 22.51 | 22.82 | 22.79 | 23.8 | 1 | |
| 15 | 16QAM | 1 | 0 | 22.76 | 22.72 | 22.63 | | | |
| 15 | 16QAM | 1 | 37 | 22.89 | 22.76 | 22.70 | | | |
| 15 | 16QAM | 1 | 74 | 22.84 | 22.77 | 22.54 | 22.8 | 2 | |
| 15 | 16QAM | 36 | 0 | 21.56 | 21.69 | 21.53 | | | |
| 15 | 16QAM | 36 | 20 | 21.45 | 21.37 | 21.56 | | | |
| 15 | 16QAM | 36 | 39 | 21.48 | 21.70 | 21.67 | 22.8 | 2 | |
| 15 | 16QAM | 75 | 0 | 21.48 | 21.77 | 21.56 | | | |
| 15 | 64QAM | 1 | 0 | 21.52 | 21.84 | 21.88 | | | |
| 15 | 64QAM | 1 | 37 | 21.96 | 22.02 | 21.85 | 22.8 | 2 | |
| 15 | 64QAM | 1 | 74 | 21.82 | 21.83 | 21.79 | | | |
| 15 | 64QAM | 36 | 0 | 20.54 | 20.77 | 20.63 | | | |
| 15 | 64QAM | 36 | 20 | 20.44 | 20.70 | 20.62 | 21.8 | 3 | |
| 15 | 64QAM | 36 | 39 | 20.54 | 20.80 | 20.66 | | | |
| 15 | 64QAM | 75 | 0 | 20.48 | 20.78 | 20.58 | | | |
| Channel | | | | 26740 | 26865 | 26990 | | | |
| Frequency (MHz) | | | | 819 | 831.5 | 844 | | | |
| 10 | QPSK | 1 | 0 | 23.61 | 23.69 | 23.40 | 24.8 | 0 | |
| 10 | QPSK | 1 | 25 | 23.45 | 23.46 | 23.61 | | | |
| 10 | QPSK | 1 | 49 | 23.49 | 23.52 | 23.51 | | | |
| 10 | QPSK | 25 | 0 | 22.60 | 23.32 | 23.22 | 23.8 | 1 | |
| 10 | QPSK | 25 | 12 | 22.48 | 22.89 | 23.27 | | | |
| 10 | QPSK | 25 | 25 | 22.55 | 22.78 | 23.26 | | | |
| 10 | QPSK | 50 | 0 | 22.64 | 23.23 | 23.21 | 23.8 | 1 | |
| 10 | 16QAM | 1 | 0 | 22.78 | 23.45 | 23.33 | | | |
| 10 | 16QAM | 1 | 25 | 22.66 | 23.19 | 23.34 | | | |
| 10 | 16QAM | 1 | 49 | 22.91 | 23.47 | 23.34 | 22.8 | 2 | |
| 10 | 16QAM | 25 | 0 | 21.63 | 21.80 | 22.40 | | | |
| 10 | 16QAM | 25 | 12 | 21.56 | 21.82 | 22.13 | | | |
| 10 | 16QAM | 25 | 25 | 21.66 | 21.84 | 22.24 | 22.8 | 2 | |
| 10 | 16QAM | 50 | 0 | 21.63 | 21.95 | 22.32 | | | |
| 10 | 64QAM | 1 | 0 | 21.55 | 22.24 | 22.27 | | | |
| 10 | 64QAM | 1 | 25 | 21.64 | 22.05 | 22.19 | 22.8 | 2 | |
| 10 | 64QAM | 1 | 49 | 21.90 | 21.95 | 22.50 | | | |
| 10 | 64QAM | 25 | 0 | 20.61 | 20.73 | 21.10 | | | |
| 10 | 64QAM | 25 | 12 | 20.54 | 20.84 | 21.18 | 21.8 | 3 | |
| 10 | 64QAM | 25 | 25 | 20.64 | 20.86 | 21.28 | | | |
| 10 | 64QAM | 50 | 0 | 20.56 | 20.90 | 21.24 | | | |
| Channel | | | | 26715 | 26865 | 27015 | | | |
| Frequency (MHz) | | | | 816.5 | 831.5 | 846.5 | | | |
| 5 | QPSK | 1 | 0 | 23.47 | 23.56 | 23.60 | 24.8 | 0 | |
| 5 | QPSK | 1 | 12 | 23.49 | 23.66 | 23.54 | | | |
| 5 | QPSK | 1 | 24 | 23.54 | 23.72 | 23.55 | | | |
| 5 | QPSK | 12 | 0 | 22.55 | 22.78 | 23.22 | 23.8 | 1 | |
| 5 | QPSK | 12 | 7 | 22.56 | 22.77 | 23.27 | | | |
| 5 | QPSK | 12 | 13 | 22.57 | 22.80 | 23.23 | | | |
| 5 | QPSK | 25 | 0 | 22.56 | 22.90 | 23.16 | 23.8 | 1 | |
| 5 | 16QAM | 1 | 0 | 23.11 | 23.08 | 23.39 | | | |
| 5 | 16QAM | 1 | 12 | 23.02 | 23.11 | 23.42 | | | |
| 5 | 16QAM | 1 | 24 | 23.23 | 22.90 | 23.33 | 22.8 | 2 | |
| 5 | 16QAM | 12 | 0 | 21.68 | 21.85 | 22.30 | | | |
| 5 | 16QAM | 12 | 7 | 21.75 | 21.79 | 22.18 | | | |
| 5 | 16QAM | 12 | 13 | 21.76 | 21.88 | 22.20 | 22.8 | 2 | |
| 5 | 16QAM | 25 | 0 | 21.61 | 21.76 | 22.25 | | | |
| 5 | 64QAM | 1 | 0 | 21.93 | 22.29 | 22.03 | | | |
| 5 | 64QAM | 1 | 12 | 21.83 | 22.11 | 22.06 | 22.8 | 2 | |
| 5 | 64QAM | 1 | 24 | 21.40 | 22.02 | 22.09 | | | |
| 5 | 64QAM | 12 | 0 | 20.65 | 20.78 | 21.30 | | | |
| 5 | 64QAM | 12 | 7 | 20.73 | 20.79 | 21.19 | 21.8 | 3 | |
| 5 | 64QAM | 12 | 13 | 20.75 | 20.88 | 21.27 | | | |
| 5 | 64QAM | 25 | 0 | 20.66 | 20.69 | 21.23 | | | |
| Channel | | | | 26705 | 26865 | 27025 | | | |
| Frequency (MHz) | | | | 815.5 | 831.5 | 847.5 | | | |
| 3 | QPSK | 1 | 0 | 23.44 | 23.55 | 23.68 | 24.8 | 0 | |
| 3 | QPSK | 1 | 8 | 23.50 | 23.55 | 23.73 | | | |
| 3 | QPSK | 1 | 14 | 23.51 | 23.47 | 23.58 | | | |
| 3 | QPSK | 8 | 0 | 22.70 | 22.76 | 23.16 | 23.8 | 1 | |
| 3 | QPSK | 8 | 4 | 22.60 | 22.69 | 23.21 | | | |
| 3 | QPSK | 8 | 7 | 22.49 | 22.76 | 23.30 | | | |
| 3 | QPSK | 15 | 0 | 22.56 | 22.77 | 23.18 | 23.8 | 1 | |
| 3 | 16QAM | 1 | 0 | 23.20 | 23.47 | 23.26 | | | |
| 3 | 16QAM | 1 | 8 | 22.87 | 23.09 | 23.11 | | | |
| 3 | 16QAM | 1 | 14 | 22.99 | 23.13 | 23.31 | 22.8 | 2 | |
| 3 | 16QAM | 8 | 0 | 21.76 | 21.78 | 22.27 | | | |
| 3 | 16QAM | 8 | 4 | 21.71 | 21.82 | 22.31 | | | |
| 3 | 16QAM | 8 | 7 | 21.61 | 21.79 | 22.27 | 22.8 | 2 | |
| 3 | 16QAM | 15 | 0 | 21.72 | 21.68 | 22.37 | | | |
| 3 | 64QAM | 1 | 0 | 21.72 | 22.08 | 22.35 | | | |
| 3 | 64QAM | 1 | 8 | 21.97 | 22.09 | 22.23 | 22.8 | 2 | |
| 3 | 64QAM | 1 | 14 | 21.60 | 21.97 | 22.37 | | | |
| 3 | 64QAM | 8 | 0 | 20.70 | 20.73 | 21.26 | | | |
| 3 | 64QAM | 8 | 4 | 20.70 | 20.76 | 21.30 | 21.8 | 3 | |
| 3 | 64QAM | 8 | 7 | 20.77 | 20.73 | 21.16 | | | |
| 3 | 64QAM | 15 | 0 | 20.61 | 20.85 | 21.24 | | | |
| Channel | | | | 26697 | 26865 | 27033 | | | |
| Frequency (MHz) | | | | 814.7 | 831.5 | 848.3 | | | |
| 1.4 | QPSK | 1 | 0 | 23.35 | 23.38 | 23.64 | 24.8 | 0 | |
| 1.4 | QPSK | 1 | 3 | 23.66 | 23.69 | 23.68 | | | |
| 1.4 | QPSK | 1 | 5 | 23.62 | 23.62 | 23.52 | | | |
| 1.4 | QPSK | 3 | 0 | 23.40 | 23.73 | 23.61 | 23.8 | 1 | |
| 1.4 | QPSK | 3 | 1 | 23.56 | 23.57 | 23.53 | | | |
| 1.4 | QPSK | 3 | 3 | 23.69 | 23.62 | 23.50 | | | |
| 1.4 | QPSK | 6 | 0 | 22.47 | 22.59 | 23.10 | 23.8 | 1 | |
| 1.4 | 16QAM | 1 | 0 | 23.02 | 23.09 | 23.30 | | | |
| 1.4 | 16QAM | 1 | 3 | 22.80 | 23.03 | 23.25 | | | |
| 1.4 | 16QAM | 1 | 5 | 22.73 | 23.15 | 23.30 | 23.8 | 1 | |
| 1.4 | 16QAM | 3 | 0 | 22.53 | 22.68 | 23.14 | | | |
| 1.4 | 16QAM | 3 | 1 | 22.70 | 22.94 | 23.13 | | | |
| 1.4 | 16QAM | 3 | 3 | 22.45 | 22.70 | 23.10 | 22.8 | 2 | |
| 1.4 | 16QAM | 6 | 0 | 21.73 | 21.78 | 22.10 | | | |
| 1.4 | 64QAM | 1 | 0 | 21.74 | 21.83 | 22.22 | | | |
| 1.4 | 64QAM | 1 | 3 | 21.46 | 21.58 | 22.12 | 22.8 | 2 | |
| 1.4 | 64QAM | 1 | 5 | 21.58 | 21.99 | 22.33 | | | |
| 1.4 | 64QAM | 3 | 0 | 21.44 | 21.47 | 22.10 | | | |
| 1.4 | 64QAM | 3 | 1 | 21.76 | 21.77 | 22.19 | 21.8 | 3 | |
| 1.4 | 64QAM | 3 | 3 | 21.82 | 21.78 | 22.15 | | | |
| 1.4 | 64QAM | 6 | 0 | 20.60 | 20.61 | 21.08 | | | |



WWAN Top Antenna--Receiver on

| GSM850 | Burst Average Power (dBm) | | | Tune-up Limit (dBm) | Frame-Average Power (dBm) | | | Tune-up Limit (dBm) |
|-----------------------|---------------------------|-------|-------|---------------------|---------------------------|-------|-------|---------------------|
| | 128 | 169 | 251 | | 128 | 169 | 251 | |
| TX Channel | 128 | 169 | 251 | Limit | 128 | 169 | 251 | Limit |
| Frequency (MHz) | 824.2 | 833.4 | 843.3 | (dBm) | 824.2 | 833.4 | 843.3 | (dBm) |
| GSM 1 Tx slot | 30.32 | 30.51 | 30.47 | 31.50 | 21.32 | 21.51 | 21.47 | 22.50 |
| GPRS 1 Tx slot | 30.23 | 30.46 | 30.45 | 31.50 | 21.23 | 21.46 | 21.45 | 22.50 |
| GPRS 2 Tx slots | 28.34 | 28.45 | 28.30 | 29.50 | 22.34 | 22.45 | 22.30 | 23.50 |
| GPRS 3 Tx slots | 25.77 | 26.10 | 26.09 | 27.50 | 21.51 | 21.84 | 21.83 | 23.24 |
| GPRS 4 Tx slots | 25.13 | 25.53 | 25.52 | 26.50 | 22.13 | 22.53 | 22.52 | 23.50 |
| EDGE(GMSK 1 Tx slot) | 30.21 | 30.22 | 30.44 | 31.50 | 21.21 | 21.22 | 21.44 | 22.50 |
| EDGE(GMSK 2 Tx slots) | 28.32 | 28.42 | 28.05 | 29.50 | 22.32 | 22.42 | 22.05 | 23.50 |
| EDGE(GMSK 3 Tx slots) | 25.72 | 25.81 | 26.02 | 27.50 | 21.46 | 21.55 | 21.76 | 23.24 |
| EDGE(GMSK 4 Tx slots) | 25.09 | 25.28 | 25.47 | 26.50 | 22.09 | 22.28 | 22.47 | 23.50 |
| EDGE(BPSK 1 Tx slot) | 23.43 | 23.55 | 23.44 | 24.50 | 14.43 | 14.55 | 14.44 | 15.50 |
| EDGE(BPSK 2 Tx slots) | 21.32 | 21.36 | 21.28 | 23.00 | 15.32 | 15.36 | 15.28 | 17.00 |
| EDGE(BPSK 3 Tx slots) | 20.12 | 20.17 | 20.14 | 22.00 | 15.86 | 15.91 | 15.88 | 17.74 |
| EDGE(BPSK 4 Tx slots) | 19.43 | 19.42 | 19.37 | 21.00 | 16.43 | 16.42 | 16.37 | 18.00 |

| GSM1900 | Burst Average Power (dBm) | | | Tune-up Limit (dBm) | Frame-Average Power (dBm) | | | Tune-up Limit (dBm) |
|-----------------------|---------------------------|-------|--------|---------------------|---------------------------|-------|--------|---------------------|
| | 512 | 661 | 810 | | 512 | 661 | 810 | |
| TX Channel | 512 | 661 | 810 | Limit | 512 | 661 | 810 | Limit |
| Frequency (MHz) | 1850.2 | 1880 | 1909.8 | (dBm) | 1850.2 | 1880 | 1909.8 | (dBm) |
| GSM 1 Tx slot | 22.03 | 22.19 | 22.06 | 22.50 | 13.03 | 13.19 | 13.06 | 13.50 |
| GPRS 1 Tx slot | 22.02 | 22.18 | 22.02 | 22.50 | 13.02 | 13.18 | 13.02 | 13.50 |
| GPRS 2 Tx slots | 18.25 | 18.55 | 18.57 | 20.00 | 12.25 | 12.55 | 12.57 | 14.00 |
| GPRS 3 Tx slots | 17.77 | 17.93 | 17.78 | 19.00 | 13.51 | 13.67 | 13.52 | 14.74 |
| GPRS 4 Tx slots | 16.72 | 16.68 | 16.62 | 18.00 | 13.72 | 13.68 | 13.62 | 15.00 |
| EDGE(GMSK 1 Tx slot) | 22.01 | 22.12 | 22.00 | 22.50 | 13.01 | 13.12 | 13.00 | 13.50 |
| EDGE(GMSK 2 Tx slots) | 18.21 | 18.52 | 18.54 | 20.00 | 12.21 | 12.52 | 12.54 | 14.00 |
| EDGE(GMSK 3 Tx slots) | 17.72 | 17.87 | 17.74 | 19.00 | 13.46 | 13.61 | 13.48 | 14.74 |
| EDGE(GMSK 4 Tx slots) | 16.48 | 16.58 | 16.55 | 18.00 | 13.48 | 13.58 | 13.55 | 15.00 |
| EDGE(BPSK 1 Tx slot) | 18.02 | 18.19 | 18.10 | 19.50 | 9.02 | 9.19 | 9.10 | 10.50 |
| EDGE(BPSK 2 Tx slots) | 15.56 | 15.91 | 15.90 | 17.00 | 9.56 | 9.91 | 9.90 | 11.00 |
| EDGE(BPSK 3 Tx slots) | 14.24 | 14.31 | 14.10 | 15.50 | 9.98 | 10.05 | 9.84 | 11.24 |
| EDGE(BPSK 4 Tx slots) | 12.56 | 12.72 | 12.73 | 14.00 | 9.56 | 9.72 | 9.73 | 11.00 |

| Band | Tx Channel | WCDMA II | | | Tune-up Limit (dBm) | WCDMA IV | | | Tune-up Limit (dBm) | WCDMA V | | | Tune-up Limit (dBm) |
|-------------|-------------------------|----------|-------|-------|---------------------|----------|-------|-------|---------------------|---------|-------|-------|---------------------|
| | | 9262 | 9400 | 9538 | | 1312 | 1413 | 1513 | | 4132 | 4182 | 4233 | |
| | Rx Channel | 9662 | 9800 | 9938 | Limit | 1537 | 1638 | 1738 | Limit | 4357 | 4407 | 4458 | Limit |
| | Frequency (MHz) | 1824 | 1838 | 1873 | (dBm) | 1724 | 1723 | 1755 | (dBm) | 3254 | 3304 | 3335 | (dBm) |
| 3GPP Rel 99 | AMR 12.2Kbps | 15.63 | 15.66 | 15.65 | 16.50 | 15.57 | 15.58 | 15.59 | 16.30 | 21.70 | 21.86 | 21.98 | 22.50 |
| 3GPP Rel 99 | RM C 12.2Kbps | 15.64 | 15.67 | 15.72 | 16.50 | 15.58 | 15.59 | 15.59 | 16.30 | 21.71 | 21.87 | 22.00 | 22.50 |
| 3GPP Rel 6 | HSDPA Subtest-1 | 14.08 | 14.14 | 14.05 | 15.50 | 14.03 | 14.01 | 13.74 | 15.30 | 20.29 | 20.42 | 20.59 | 21.50 |
| 3GPP Rel 6 | HSDPA Subtest-2 | 14.05 | 14.19 | 14.03 | 15.50 | 14.01 | 14.03 | 13.74 | 15.30 | 20.30 | 20.41 | 20.57 | 21.50 |
| 3GPP Rel 6 | HSDPA Subtest-3 | 13.57 | 13.63 | 13.52 | 15.00 | 13.55 | 13.53 | 13.27 | 14.80 | 19.84 | 19.92 | 20.08 | 21.00 |
| 3GPP Rel 6 | HSDPA Subtest-4 | 13.55 | 13.68 | 13.52 | 15.00 | 13.52 | 13.54 | 13.20 | 14.80 | 19.84 | 19.92 | 20.08 | 21.00 |
| 3GPP Rel 8 | DC-HSDPA Subtest-1 | 14.15 | 14.08 | 14.10 | 15.50 | 14.10 | 14.14 | 14.03 | 15.30 | 20.21 | 20.26 | 20.37 | 21.50 |
| 3GPP Rel 8 | DC-HSDPA Subtest-2 | 14.14 | 14.09 | 14.11 | 15.50 | 14.09 | 14.13 | 14.04 | 15.30 | 20.20 | 20.25 | 20.35 | 21.50 |
| 3GPP Rel 8 | DC-HSDPA Subtest-3 | 13.49 | 13.48 | 13.59 | 15.00 | 13.38 | 13.43 | 13.30 | 14.80 | 19.71 | 19.80 | 19.91 | 21.00 |
| 3GPP Rel 8 | DC-HSDPA Subtest-4 | 13.48 | 13.46 | 13.58 | 15.00 | 13.39 | 13.42 | 13.29 | 14.80 | 19.72 | 19.81 | 19.89 | 21.00 |
| 3GPP Rel 6 | HSUPA Subtest-1 | 11.56 | 11.56 | 11.64 | 13.00 | 11.54 | 11.58 | 11.44 | 12.80 | 20.29 | 20.34 | 20.59 | 21.50 |
| 3GPP Rel 6 | HSUPA Subtest-2 | 9.65 | 9.58 | 9.66 | 11.00 | 9.64 | 9.69 | 9.58 | 10.80 | 18.27 | 18.35 | 18.47 | 19.50 |
| 3GPP Rel 6 | HSUPA Subtest-3 | 10.69 | 10.59 | 10.62 | 12.00 | 10.73 | 10.80 | 10.64 | 11.80 | 19.12 | 19.31 | 19.02 | 20.50 |
| 3GPP Rel 6 | HSUPA Subtest-4 | 9.84 | 9.56 | 9.59 | 11.00 | 9.86 | 9.98 | 9.69 | 10.80 | 18.25 | 18.34 | 18.20 | 19.50 |
| 3GPP Rel 6 | HSUPA Subtest-5 | 11.50 | 11.60 | 11.70 | 13.00 | 11.50 | 11.80 | 11.70 | 12.80 | 20.30 | 20.20 | 20.60 | 21.50 |
| 3GPP Rel 7 | HSPA+ (16QAM) Subtest-1 | 9.45 | 9.49 | 9.58 | 10.50 | 9.47 | 9.55 | 9.46 | 10.30 | 17.36 | 17.47 | 17.58 | 19.00 |



| Band 26 for FCC (only on channel required) | | | | | | | | | |
|---|------------|---------|-----------|---------------|------------------|----------------|---------------------|----------|--|
| BW (MHz) | Modulation | RB Size | RB Offset | Power | | | Tune-up limit (dbm) | MPR (dB) | |
| | | | | Low Ch / Freq | Middle Ch / Freq | High Ch / Freq | | | |
| Channel | | | | 26765 | 26895 | 26965 | | | |
| Frequency (MHz) | | | | 831.5 | 831.5 | 841.5 | | | |
| 15 | QPSK | 1 | 0 | 20.52 | 20.59 | 20.68 | 21.3 | 0 | |
| 15 | QPSK | 1 | 37 | 20.43 | 20.61 | 20.56 | | | |
| 15 | QPSK | 1 | 74 | 20.24 | 20.49 | 20.57 | | | |
| 15 | QPSK | 36 | 0 | 20.55 | 20.60 | 20.51 | | | |
| 15 | 16QAM | 36 | 20 | 20.56 | 20.67 | 20.55 | 21.3 | 0 | |
| 15 | 16QAM | 36 | 39 | 20.40 | 20.51 | 20.57 | | | |
| 15 | 16QAM | 75 | 0 | 20.40 | 20.55 | 20.50 | | | |
| 15 | 16QAM | 1 | 0 | 20.31 | 20.62 | 20.28 | | | |
| 15 | 16QAM | 1 | 37 | 20.57 | 20.43 | 20.32 | 21.3 | 0 | |
| 15 | 16QAM | 1 | 74 | 20.32 | 20.24 | 20.43 | | | |
| 15 | 16QAM | 36 | 0 | 20.46 | 20.27 | 20.60 | | | |
| 15 | 16QAM | 36 | 20 | 20.49 | 20.43 | 20.53 | | | |
| 15 | 16QAM | 36 | 39 | 20.66 | 20.62 | 20.43 | 21.3 | 0 | |
| 15 | 16QAM | 75 | 0 | 20.52 | 20.61 | 20.53 | | | |
| 15 | 64QAM | 1 | 0 | 20.29 | 20.60 | 20.59 | | | |
| 15 | 64QAM | 1 | 37 | 20.50 | 20.29 | 20.47 | | | |
| 15 | 64QAM | 1 | 74 | 20.32 | 20.24 | 20.60 | 21.3 | 0 | |
| 15 | 64QAM | 36 | 0 | 19.96 | 20.35 | 20.14 | | | |
| 15 | 64QAM | 36 | 20 | 19.96 | 20.36 | 20.20 | | | |
| 15 | 64QAM | 36 | 39 | 20.25 | 20.16 | 20.24 | | | |
| 15 | 64QAM | 75 | 0 | 20.04 | 20.24 | 20.11 | | | |
| Channel | | | | 26740 | 26885 | 26990 | | | |
| Frequency (MHz) | | | | 819 | 831.5 | 844 | | | |
| 10 | QPSK | 1 | 0 | 20.59 | 20.62 | 20.56 | 21.3 | 0 | |
| 10 | QPSK | 1 | 25 | 20.36 | 20.57 | 20.40 | | | |
| 10 | QPSK | 1 | 49 | 20.42 | 20.29 | 20.28 | | | |
| 10 | QPSK | 25 | 0 | 20.57 | 20.60 | 20.25 | | | |
| 10 | QPSK | 25 | 12 | 20.63 | 20.42 | 20.24 | 21.3 | 0 | |
| 10 | QPSK | 25 | 25 | 20.52 | 20.65 | 20.25 | | | |
| 10 | QPSK | 50 | 0 | 20.65 | 20.57 | 20.52 | | | |
| 10 | 16QAM | 1 | 0 | 20.39 | 20.32 | 20.32 | | | |
| 10 | 16QAM | 1 | 25 | 20.52 | 20.58 | 20.32 | 21.3 | 0 | |
| 10 | 16QAM | 1 | 49 | 20.65 | 20.32 | 20.24 | | | |
| 10 | 16QAM | 25 | 0 | 20.56 | 20.60 | 20.29 | | | |
| 10 | 16QAM | 25 | 12 | 20.58 | 20.52 | 20.23 | | | |
| 10 | 16QAM | 25 | 25 | 20.52 | 20.63 | 20.64 | 21.3 | 0 | |
| 10 | 16QAM | 50 | 0 | 20.42 | 20.62 | 20.24 | | | |
| 10 | 64QAM | 1 | 0 | 20.24 | 20.31 | 20.40 | | | |
| 10 | 64QAM | 1 | 25 | 20.63 | 20.22 | 20.30 | | | |
| 10 | 64QAM | 1 | 49 | 20.26 | 20.41 | 20.40 | 21.3 | 0 | |
| 10 | 64QAM | 25 | 0 | 19.95 | 20.27 | 20.42 | | | |
| 10 | 64QAM | 25 | 12 | 20.13 | 20.27 | 20.42 | | | |
| 10 | 64QAM | 25 | 25 | 20.25 | 20.33 | 20.42 | | | |
| 10 | 64QAM | 50 | 0 | 20.15 | 20.31 | 20.37 | | | |
| Channel | | | | 26715 | 26885 | 27015 | | | |
| Frequency (MHz) | | | | 816.5 | 831.5 | 846.5 | | | |
| 5 | QPSK | 1 | 0 | 20.56 | 20.52 | 20.61 | 21.3 | 0 | |
| 5 | QPSK | 1 | 12 | 20.59 | 20.46 | 20.52 | | | |
| 5 | QPSK | 1 | 24 | 20.58 | 20.59 | 20.42 | | | |
| 5 | QPSK | 12 | 0 | 20.52 | 20.58 | 20.42 | | | |
| 5 | QPSK | 12 | 7 | 20.56 | 20.42 | 20.62 | 21.3 | 0 | |
| 5 | QPSK | 12 | 13 | 20.42 | 20.56 | 20.52 | | | |
| 5 | QPSK | 25 | 0 | 20.62 | 20.53 | 20.25 | | | |
| 5 | 16QAM | 1 | 0 | 20.42 | 20.27 | 20.57 | | | |
| 5 | 16QAM | 1 | 12 | 20.57 | 20.31 | 20.35 | 21.3 | 0 | |
| 5 | 16QAM | 1 | 24 | 20.63 | 20.52 | 20.38 | | | |
| 5 | 16QAM | 12 | 0 | 20.54 | 20.52 | 20.22 | | | |
| 5 | 16QAM | 12 | 7 | 20.52 | 20.64 | 20.52 | | | |
| 5 | 16QAM | 12 | 13 | 20.63 | 20.60 | 20.64 | 21.3 | 0 | |
| 5 | 16QAM | 25 | 0 | 20.61 | 20.42 | 20.27 | | | |
| 5 | 64QAM | 1 | 0 | 20.25 | 20.52 | 20.24 | | | |
| 5 | 64QAM | 1 | 12 | 20.53 | 20.26 | 20.25 | | | |
| 5 | 64QAM | 1 | 24 | 20.42 | 20.29 | 20.29 | 21.3 | 0 | |
| 5 | 64QAM | 12 | 0 | 20.24 | 20.17 | 20.42 | | | |
| 5 | 64QAM | 12 | 7 | 20.22 | 20.23 | 20.36 | | | |
| 5 | 64QAM | 12 | 13 | 20.24 | 20.35 | 20.43 | | | |
| 5 | 64QAM | 25 | 0 | 20.09 | 20.17 | 20.36 | | | |
| Channel | | | | 26705 | 26885 | 27025 | | | |
| Frequency (MHz) | | | | 815.5 | 831.5 | 847.5 | | | |
| 3 | QPSK | 1 | 0 | 20.59 | 20.56 | 20.44 | 21.3 | 0 | |
| 3 | QPSK | 1 | 8 | 20.55 | 20.57 | 20.56 | | | |
| 3 | QPSK | 1 | 14 | 20.51 | 20.24 | 20.44 | | | |
| 3 | QPSK | 8 | 0 | 20.63 | 20.54 | 20.65 | | | |
| 3 | QPSK | 8 | 4 | 20.44 | 20.64 | 20.44 | 21.3 | 0 | |
| 3 | QPSK | 8 | 7 | 20.59 | 20.60 | 20.44 | | | |
| 3 | QPSK | 15 | 0 | 20.66 | 20.44 | 20.67 | | | |
| 3 | 16QAM | 1 | 0 | 20.61 | 20.56 | 20.26 | | | |
| 3 | 16QAM | 1 | 8 | 20.65 | 20.39 | 20.41 | 21.3 | 0 | |
| 3 | 16QAM | 1 | 14 | 20.27 | 20.30 | 20.42 | | | |
| 3 | 16QAM | 8 | 0 | 20.44 | 20.54 | 20.62 | | | |
| 3 | 16QAM | 8 | 4 | 20.57 | 20.44 | 20.28 | | | |
| 3 | 16QAM | 8 | 7 | 20.56 | 20.55 | 20.24 | 21.3 | 0 | |
| 3 | 16QAM | 15 | 0 | 20.60 | 20.55 | 20.54 | | | |
| 3 | 64QAM | 1 | 0 | 20.65 | 20.66 | 20.29 | | | |
| 3 | 64QAM | 1 | 8 | 20.63 | 20.63 | 20.44 | | | |
| 3 | 64QAM | 1 | 14 | 20.65 | 20.32 | 20.44 | 21.3 | 0 | |
| 3 | 64QAM | 8 | 0 | 20.14 | 20.15 | 20.35 | | | |
| 3 | 64QAM | 8 | 4 | 20.11 | 20.24 | 20.48 | | | |
| 3 | 64QAM | 8 | 7 | 20.11 | 20.16 | 20.35 | | | |
| 3 | 64QAM | 15 | 0 | 20.13 | 20.20 | 20.31 | | | |
| Channel | | | | 26697 | 26885 | 27033 | | | |
| Frequency (MHz) | | | | 814.7 | 831.5 | 848.3 | | | |
| 1.4 | QPSK | 1 | 0 | 20.61 | 20.47 | 20.64 | 21.3 | 0 | |
| 1.4 | QPSK | 1 | 3 | 20.67 | 20.55 | 20.47 | | | |
| 1.4 | QPSK | 1 | 5 | 20.66 | 20.59 | 20.65 | | | |
| 1.4 | QPSK | 3 | 0 | 20.66 | 20.60 | 20.65 | | | |
| 1.4 | QPSK | 3 | 1 | 20.67 | 20.44 | 20.64 | 21.3 | 0 | |
| 1.4 | QPSK | 3 | 3 | 20.67 | 20.67 | 20.44 | | | |
| 1.4 | QPSK | 6 | 0 | 20.64 | 20.58 | 20.62 | | | |
| 1.4 | 16QAM | 1 | 0 | 20.44 | 20.30 | 20.43 | | | |
| 1.4 | 16QAM | 1 | 3 | 20.64 | 20.60 | 20.59 | 21.3 | 0 | |
| 1.4 | 16QAM | 1 | 5 | 20.32 | 20.61 | 20.37 | | | |
| 1.4 | 16QAM | 3 | 0 | 20.57 | 20.57 | 20.44 | | | |
| 1.4 | 16QAM | 3 | 1 | 20.54 | 20.57 | 20.27 | | | |
| 1.4 | 16QAM | 3 | 3 | 20.54 | 20.54 | 20.28 | 21.3 | 0 | |
| 1.4 | 16QAM | 6 | 0 | 20.67 | 20.65 | 20.32 | | | |
| 1.4 | 64QAM | 1 | 0 | 20.54 | 20.33 | 20.66 | | | |
| 1.4 | 64QAM | 1 | 3 | 20.50 | 20.54 | 20.54 | | | |
| 1.4 | 64QAM | 1 | 5 | 20.67 | 20.66 | 20.64 | 21.3 | 0 | |
| 1.4 | 64QAM | 3 | 0 | 20.44 | 20.56 | 20.33 | | | |
| 1.4 | 64QAM | 3 | 1 | 20.61 | 20.44 | 20.25 | | | |
| 1.4 | 64QAM | 3 | 3 | 20.60 | 20.54 | 20.27 | | | |
| 1.4 | 64QAM | 6 | 0 | 20.10 | 20.13 | 20.29 | 21.3 | 0 | |



WWAN Top Antenna-Receiver off

| GSM850 | Burst Average Power (dBm) | | | Tune-up Limit (dBm) | Frame-Average Power (dBm) | | | Tune-up Limit (dBm) |
|-----------------------|---------------------------|-------|-------|---------------------|---------------------------|-------|-------|---------------------|
| | 128 | 169 | 251 | | 128 | 169 | 251 | |
| TX Channel | 128 | 169 | 251 | Limit | 128 | 169 | 251 | Limit |
| Frequency (MHz) | 124.2 | 163.4 | 143.3 | (dBm) | 124.2 | 163.4 | 143.3 | (dBm) |
| GSM 1 Tx slot | 32.51 | 32.86 | 32.87 | 34.00 | 23.51 | 23.86 | 23.87 | 25.00 |
| GPRS 1 Tx slot | 32.49 | 32.79 | 32.86 | 34.00 | 23.49 | 23.79 | 23.86 | 25.00 |
| GPRS 2 Tx slots | 30.90 | 30.93 | 30.91 | 32.00 | 24.90 | 24.93 | 24.91 | 26.00 |
| GPRS 3 Tx slots | 28.44 | 28.86 | 28.85 | 30.00 | 24.18 | 24.60 | 24.59 | 25.74 |
| GPRS 4 Tx slots | 27.94 | 28.10 | 28.08 | 29.00 | 24.94 | 25.10 | 25.08 | 26.00 |
| EDGE(GMSK 1 Tx slot) | 32.41 | 32.74 | 32.82 | 34.00 | 23.41 | 23.74 | 23.82 | 25.00 |
| EDGE(GMSK 2 Tx slots) | 30.88 | 30.90 | 30.86 | 32.00 | 24.88 | 24.90 | 24.88 | 26.00 |
| EDGE(GMSK 3 Tx slots) | 28.39 | 28.81 | 28.82 | 30.00 | 24.13 | 24.35 | 24.56 | 25.74 |
| EDGE(GMSK 4 Tx slots) | 27.91 | 28.08 | 28.01 | 29.00 | 24.91 | 25.08 | 25.01 | 26.00 |
| EDGE(8PSK 1 Tx slot) | 25.53 | 25.67 | 25.61 | 27.00 | 16.53 | 16.67 | 16.61 | 18.00 |
| EDGE(8PSK 2 Tx slots) | 24.42 | 24.19 | 24.34 | 25.50 | 16.42 | 16.19 | 16.34 | 19.50 |
| EDGE(8PSK 3 Tx slots) | 23.41 | 22.92 | 23.20 | 24.50 | 19.15 | 18.66 | 18.94 | 20.24 |
| EDGE(8PSK 4 Tx slots) | 22.64 | 22.31 | 22.47 | 23.50 | 19.64 | 19.31 | 19.47 | 20.50 |

| GSM1900 | Burst Average Power (dBm) | | | Tune-up Limit (dBm) | Frame-Average Power (dBm) | | | Tune-up Limit (dBm) |
|-----------------------|---------------------------|-------|--------|---------------------|---------------------------|-------|--------|---------------------|
| | 512 | 661 | 810 | | 512 | 661 | 810 | |
| TX Channel | 512 | 661 | 810 | Limit | 512 | 661 | 810 | Limit |
| Frequency (MHz) | 1850.2 | 1880 | 1909.8 | (dBm) | 1850.2 | 1880 | 1909.8 | (dBm) |
| GSM 1 Tx slot | 24.70 | 24.83 | 24.49 | 25.50 | 15.70 | 15.83 | 15.49 | 16.50 |
| GPRS 1 Tx slot | 24.67 | 24.82 | 24.42 | 25.50 | 15.67 | 15.82 | 15.42 | 16.50 |
| GPRS 2 Tx slots | 21.49 | 21.67 | 21.57 | 23.00 | 15.49 | 15.67 | 15.57 | 17.00 |
| GPRS 3 Tx slots | 20.90 | 20.93 | 20.78 | 22.00 | 16.84 | 16.87 | 16.82 | 17.74 |
| GPRS 4 Tx slots | 19.67 | 19.86 | 19.77 | 21.00 | 16.87 | 16.86 | 16.77 | 18.00 |
| EDGE(GMSK 1 Tx slot) | 24.61 | 24.77 | 24.28 | 25.50 | 15.61 | 15.77 | 15.28 | 16.50 |
| EDGE(GMSK 2 Tx slots) | 21.42 | 21.65 | 21.55 | 23.00 | 15.42 | 15.65 | 15.55 | 17.00 |
| EDGE(GMSK 3 Tx slots) | 20.88 | 20.89 | 20.71 | 22.00 | 16.62 | 16.63 | 16.45 | 17.74 |
| EDGE(GMSK 4 Tx slots) | 19.73 | 19.86 | 19.74 | 21.00 | 16.73 | 16.86 | 16.74 | 18.00 |
| EDGE(8PSK 1 Tx slot) | 20.07 | 20.08 | 19.95 | 20.50 | 11.07 | 11.08 | 10.95 | 11.50 |
| EDGE(8PSK 2 Tx slots) | 18.28 | 18.32 | 18.20 | 20.00 | 12.28 | 12.32 | 12.20 | 14.00 |
| EDGE(8PSK 3 Tx slots) | 16.88 | 17.02 | 16.98 | 18.50 | 12.82 | 12.76 | 12.72 | 14.24 |
| EDGE(8PSK 4 Tx slots) | 15.01 | 15.31 | 15.18 | 17.00 | 12.01 | 12.31 | 12.18 | 14.00 |

| Band | Tx Channel | WCDMA II | | | Tune-up Limit (dBm) | WCDMA IV | | | Tune-up Limit (dBm) | WCDMA V | | | Tune-up Limit (dBm) |
|-------------|-------------------------|----------|-------|--------|---------------------|----------|-------|-------|---------------------|---------|-------|-------|---------------------|
| | | 9262 | 9400 | 9538 | | 1312 | 1413 | 1513 | | 4132 | 4182 | 4233 | |
| | Rx Channel | 9662 | 9800 | 9938 | | 1537 | 1638 | 1738 | | 4357 | 4407 | 4458 | |
| | Frequency (MHz) | 1552.4 | 1598 | 1647.6 | | 1712.4 | 1723 | 1725 | | 325.4 | 330.4 | 335.5 | |
| 3GPP Rel 99 | AMR 12.2Kbps | 18.42 | 18.45 | 18.57 | 19.50 | 19.37 | 19.39 | 19.22 | 20.30 | 23.65 | 23.74 | 23.81 | 25.00 |
| 3GPP Rel 99 | RM-C 12.2Kbps | 18.43 | 18.47 | 18.58 | 19.50 | 19.39 | 19.41 | 19.23 | 20.30 | 23.66 | 23.75 | 23.82 | 25.00 |
| 3GPP Rel 6 | HSDPA Subtest-1 | 17.08 | 17.04 | 17.07 | 18.50 | 18.00 | 18.02 | 17.94 | 19.30 | 22.34 | 22.45 | 22.58 | 24.00 |
| 3GPP Rel 6 | HSDPA Subtest-2 | 17.10 | 17.10 | 17.08 | 18.50 | 17.97 | 18.01 | 17.93 | 19.30 | 22.34 | 22.46 | 22.58 | 24.00 |
| 3GPP Rel 6 | HSDPA Subtest-3 | 16.67 | 16.55 | 16.62 | 18.00 | 17.33 | 17.39 | 17.36 | 18.80 | 21.87 | 21.96 | 22.09 | 23.50 |
| 3GPP Rel 6 | HSDPA Subtest-4 | 16.67 | 16.52 | 16.62 | 18.00 | 17.36 | 17.37 | 17.34 | 18.80 | 21.84 | 21.96 | 22.08 | 23.50 |
| 3GPP Rel 6 | DC-HSDPA Subtest-1 | 17.10 | 16.91 | 16.96 | 18.50 | 17.93 | 17.97 | 17.86 | 19.30 | 22.29 | 22.34 | 22.45 | 24.00 |
| 3GPP Rel 6 | DC-HSDPA Subtest-2 | 17.03 | 16.95 | 17.06 | 18.50 | 17.92 | 17.96 | 17.91 | 19.30 | 22.28 | 22.33 | 22.43 | 24.00 |
| 3GPP Rel 6 | DC-HSDPA Subtest-3 | 16.38 | 16.31 | 16.53 | 18.00 | 17.25 | 17.26 | 17.17 | 18.80 | 21.79 | 21.88 | 21.99 | 23.50 |
| 3GPP Rel 6 | DC-HSDPA Subtest-4 | 16.42 | 16.41 | 16.53 | 18.00 | 17.26 | 17.25 | 17.16 | 18.80 | 21.80 | 21.89 | 21.99 | 23.50 |
| 3GPP Rel 6 | HSUPA Subtest-1 | 14.45 | 14.50 | 14.50 | 16.00 | 15.41 | 15.41 | 15.31 | 16.80 | 21.86 | 21.91 | 22.07 | 24.00 |
| 3GPP Rel 6 | HSUPA Subtest-2 | 12.54 | 12.53 | 12.49 | 14.00 | 13.51 | 13.52 | 13.45 | 14.80 | 19.85 | 19.88 | 20.17 | 22.00 |
| 3GPP Rel 6 | HSUPA Subtest-3 | 13.64 | 13.53 | 13.48 | 15.00 | 14.60 | 14.64 | 14.51 | 15.80 | 20.88 | 20.99 | 21.15 | 23.00 |
| 3GPP Rel 6 | HSUPA Subtest-4 | 12.78 | 12.54 | 12.42 | 14.00 | 13.71 | 13.82 | 13.56 | 14.80 | 19.83 | 20.03 | 20.17 | 22.00 |
| 3GPP Rel 6 | HSUPA Subtest-5 | 14.46 | 14.51 | 14.53 | 16.00 | 15.65 | 15.76 | 15.59 | 16.80 | 21.90 | 22.00 | 22.10 | 24.00 |
| 3GPP Rel 7 | HSPA+ (16QAM) Subtest-1 | 12.34 | 12.44 | 12.41 | 13.50 | 13.30 | 13.39 | 13.33 | 14.30 | 19.72 | 19.83 | 19.94 | 21.50 |



| Band 2 (1900MHz Band) | | | | | | | | | | | | |
|-----------------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|----------|---------------------|----------|------|---|
| Part 24E | | | | | | | | | | | | |
| BW (MHz) | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) | | | | |
| Channel | | | | 1870 | 1890 | 1910 | Tune-up limit (dBm) | MPR (dB) | | | | |
| Frequency (MHz) | | | | 1870 | 1890 | 1910 | | | | | | |
| 20 | QPSK | 1 | 0 | 18.90 | 19.17 | 18.95 | 19.6 | 0 | | | | |
| 20 | QPSK | 1 | 49 | 19.05 | 19.19 | 19.02 | | | | | | |
| 20 | QPSK | 1 | 99 | 19.01 | 19.06 | 19.05 | | | | | | |
| 20 | QPSK | 50 | 0 | 19.02 | 19.10 | 18.70 | | | | | | |
| 20 | QPSK | 50 | 24 | 19.05 | 19.00 | 18.70 | | | 19.6 | 0 | | |
| 20 | QPSK | 50 | 50 | 18.94 | 18.89 | 18.88 | | | | | | |
| 20 | QPSK | 100 | 0 | 19.02 | 19.03 | 19.01 | | | | | | |
| 20 | 16QAM | 1 | 0 | 18.97 | 18.92 | 18.99 | 19.6 | 0 | | | | |
| 20 | 16QAM | 1 | 49 | 18.71 | 18.75 | 18.94 | | | | | | |
| 20 | 16QAM | 1 | 99 | 18.76 | 18.78 | 18.75 | | | | | | |
| 20 | 16QAM | 50 | 0 | 19.01 | 19.06 | 18.71 | | | | | | |
| 20 | 16QAM | 50 | 24 | 19.05 | 19.03 | 18.71 | | | 19.6 | 0 | | |
| 20 | 16QAM | 50 | 50 | 18.93 | 18.90 | 18.94 | | | | | | |
| 20 | 16QAM | 100 | 0 | 19.01 | 19.06 | 18.90 | | | | | | |
| 20 | 64QAM | 1 | 0 | 18.71 | 18.84 | 18.91 | 19.6 | 0 | | | | |
| 20 | 64QAM | 1 | 49 | 18.97 | 19.04 | 18.78 | | | | | | |
| 20 | 64QAM | 1 | 99 | 19.04 | 18.98 | 19.06 | | | | | | |
| 20 | 64QAM | 50 | 0 | 19.02 | 19.06 | 19.17 | | | | | | |
| 20 | 64QAM | 50 | 24 | 19.03 | 18.98 | 18.90 | | | 19.6 | 0 | | |
| 20 | 64QAM | 50 | 50 | 18.95 | 18.90 | 18.95 | | | | | | |
| 20 | 64QAM | 100 | 0 | 19.01 | 19.04 | 18.72 | | | | | | |
| Channel | | | | 1867.5 | 1890.0 | 1912.5 | Tune-up limit (dBm) | MPR (dB) | | | | |
| Frequency (MHz) | | | | 1867.5 | 1890.0 | 1912.5 | | | | | | |
| 15 | QPSK | 1 | 0 | 19.01 | 19.05 | 19.02 | 19.6 | 0 | | | | |
| 15 | QPSK | 1 | 37 | 18.89 | 19.15 | 19.14 | | | | | | |
| 15 | QPSK | 1 | 74 | 19.08 | 18.90 | 19.01 | | | | | | |
| 15 | QPSK | 36 | 0 | 19.01 | 19.03 | 19.10 | | | 19.6 | 0 | | |
| 15 | QPSK | 36 | 20 | 18.87 | 18.89 | 19.06 | | | | | | |
| 15 | QPSK | 36 | 39 | 18.96 | 18.95 | 19.08 | | | | | | |
| 15 | QPSK | 75 | 0 | 19.02 | 18.95 | 19.14 | | | | | | |
| 15 | 16QAM | 1 | 0 | 18.92 | 18.91 | 18.92 | 19.6 | 0 | | | | |
| 15 | 16QAM | 1 | 37 | 18.78 | 18.75 | 18.99 | | | | | | |
| 15 | 16QAM | 1 | 74 | 18.90 | 18.90 | 18.94 | | | | | | |
| 15 | 16QAM | 36 | 0 | 19.08 | 18.90 | 19.13 | | | 19.6 | 0 | | |
| 15 | 16QAM | 36 | 20 | 18.98 | 19.00 | 19.15 | | | | | | |
| 15 | 16QAM | 36 | 39 | 18.94 | 18.97 | 19.11 | | | | | | |
| 15 | 16QAM | 75 | 0 | 19.05 | 18.96 | 19.08 | | | | | | |
| 15 | 64QAM | 1 | 0 | 18.90 | 18.98 | 18.99 | 19.6 | 0 | | | | |
| 15 | 64QAM | 1 | 37 | 18.88 | 18.84 | 18.75 | | | | | | |
| 15 | 64QAM | 1 | 74 | 18.75 | 18.74 | 18.90 | | | | | | |
| 15 | 64QAM | 36 | 0 | 19.01 | 19.05 | 19.13 | | | 19.6 | 0 | | |
| 15 | 64QAM | 36 | 20 | 18.97 | 19.01 | 19.09 | | | | | | |
| 15 | 64QAM | 36 | 39 | 18.92 | 18.96 | 19.14 | | | | | | |
| 15 | 64QAM | 75 | 0 | 19.03 | 18.93 | 19.07 | | | | | | |
| Channel | | | | 1865.0 | 1890.0 | 1910.0 | Tune-up limit (dBm) | MPR (dB) | | | | |
| Frequency (MHz) | | | | 1865.0 | 1890.0 | 1910.0 | | | | | | |
| 10 | QPSK | 1 | 0 | 19.05 | 19.03 | 18.99 | 19.6 | 0 | | | | |
| 10 | QPSK | 1 | 25 | 19.00 | 18.88 | 19.14 | | | | | | |
| 10 | QPSK | 1 | 49 | 18.94 | 18.88 | 18.72 | | | | | | |
| 10 | QPSK | 25 | 0 | 19.00 | 19.01 | 18.71 | | | 19.6 | 0 | | |
| 10 | QPSK | 25 | 12 | 19.07 | 18.90 | 19.16 | | | | | | |
| 10 | QPSK | 25 | 26 | 18.93 | 18.93 | 18.90 | | | | | | |
| 10 | QPSK | 50 | 0 | 18.96 | 18.98 | 18.75 | 19.6 | 0 | | | | |
| 10 | 16QAM | 1 | 0 | 18.94 | 18.91 | 18.96 | | | | | | |
| 10 | 16QAM | 1 | 25 | 18.95 | 18.76 | 18.91 | | | | | | |
| 10 | 16QAM | 1 | 49 | 18.95 | 18.97 | 18.93 | | | 19.6 | 0 | | |
| 10 | 16QAM | 25 | 0 | 19.00 | 18.99 | 18.71 | | | | | | |
| 10 | 16QAM | 25 | 12 | 19.07 | 18.92 | 19.16 | | | | | | |
| 10 | 16QAM | 25 | 25 | 19.01 | 18.87 | 19.14 | 19.6 | 0 | | | | |
| 10 | 16QAM | 50 | 0 | 18.94 | 18.96 | 18.73 | | | | | | |
| 10 | 64QAM | 1 | 0 | 18.73 | 19.05 | 18.78 | | | | | | |
| 10 | 64QAM | 1 | 49 | 18.78 | 19.13 | 18.98 | | | 19.6 | 0 | | |
| 10 | 64QAM | 25 | 0 | 18.99 | 18.96 | 18.70 | | | | | | |
| 10 | 64QAM | 25 | 12 | 19.07 | 18.80 | 19.16 | | | | | | |
| 10 | 64QAM | 25 | 25 | 19.03 | 18.89 | 18.70 | | | | | | |
| 10 | 64QAM | 50 | 0 | 18.96 | 18.99 | 18.77 | | | | | | |
| Channel | | | | 1862.5 | 1890.0 | 1917.5 | Tune-up limit (dBm) | MPR (dB) | | | | |
| Frequency (MHz) | | | | 1862.5 | 1890.0 | 1917.5 | | | | | | |
| 5 | QPSK | 1 | 0 | 19.04 | 19.04 | 19.01 | 19.6 | 0 | | | | |
| 5 | QPSK | 1 | 12 | 18.86 | 18.76 | 18.81 | | | | | | |
| 5 | QPSK | 1 | 24 | 19.07 | 18.86 | 18.98 | | | | | | |
| 5 | QPSK | 12 | 0 | 19.02 | 19.02 | 19.09 | | | 19.6 | 0 | | |
| 5 | QPSK | 12 | 7 | 18.98 | 18.94 | 19.06 | | | | | | |
| 5 | QPSK | 12 | 13 | 19.04 | 18.95 | 19.07 | | | | | | |
| 5 | QPSK | 25 | 0 | 19.05 | 18.97 | 19.09 | 19.6 | 0 | | | | |
| 5 | 16QAM | 1 | 0 | 18.90 | 18.98 | 18.91 | | | | | | |
| 5 | 16QAM | 1 | 12 | 18.76 | 18.73 | 19.05 | | | | | | |
| 5 | 16QAM | 1 | 24 | 18.77 | 18.75 | 18.71 | | | 19.6 | 0 | | |
| 5 | 16QAM | 12 | 0 | 19.06 | 19.06 | 19.09 | | | | | | |
| 5 | 16QAM | 12 | 7 | 18.93 | 18.95 | 19.10 | | | | | | |
| 5 | 16QAM | 12 | 13 | 19.07 | 18.92 | 19.09 | 19.6 | 0 | | | | |
| 5 | 16QAM | 25 | 0 | 19.01 | 18.96 | 19.06 | | | | | | |
| 5 | 64QAM | 1 | 0 | 18.71 | 18.77 | 18.92 | | | | | | |
| 5 | 64QAM | 1 | 12 | 18.11 | 19.14 | 18.90 | | | 19.6 | 0 | | |
| 5 | 64QAM | 1 | 24 | 18.17 | 19.11 | 18.70 | | | | | | |
| 5 | 64QAM | 12 | 0 | 19.04 | 19.02 | 19.05 | | | | | | |
| 5 | 64QAM | 12 | 7 | 18.99 | 18.97 | 19.06 | 19.6 | 0 | | | | |
| 5 | 64QAM | 12 | 13 | 19.07 | 18.93 | 19.08 | | | | | | |
| 5 | 64QAM | 25 | 0 | 19.02 | 18.98 | 19.08 | | | | | | |
| Channel | | | | 1861.5 | 1890.0 | 1918.5 | | | Tune-up limit (dBm) | MPR (dB) | | |
| Frequency (MHz) | | | | 1861.5 | 1890.0 | 1918.5 | | | | | | |
| 3 | QPSK | 1 | 0 | 18.94 | 18.81 | 18.99 | | | 19.6 | 0 | | |
| 3 | QPSK | 1 | 14 | 18.82 | 18.88 | 18.95 | | | | | | |
| 3 | QPSK | 8 | 0 | 19.03 | 18.95 | 19.05 | 19.6 | 0 | | | | |
| 3 | QPSK | 8 | 4 | 18.95 | 18.92 | 19.08 | | | | | | |
| 3 | QPSK | 8 | 7 | 18.93 | 18.93 | 19.05 | | | | | | |
| 3 | QPSK | 15 | 0 | 18.93 | 18.89 | 19.02 | | | | | 19.6 | 0 |
| 3 | 16QAM | 1 | 0 | 19.15 | 18.72 | 18.78 | | | | | | |
| 3 | 16QAM | 1 | 8 | 18.74 | 18.72 | 18.78 | | | | | | |
| 3 | 16QAM | 1 | 14 | 19.10 | 19.09 | 18.74 | 19.6 | 0 | | | | |
| 3 | 16QAM | 8 | 0 | 19.03 | 19.04 | 19.14 | | | | | | |
| 3 | 16QAM | 8 | 4 | 19.01 | 18.98 | 19.15 | | | | | | |
| 3 | 16QAM | 8 | 7 | 18.94 | 19.01 | 19.05 | | | 19.6 | 0 | | |
| 3 | 16QAM | 15 | 0 | 18.96 | 18.95 | 19.04 | | | | | | |
| 3 | 64QAM | 1 | 0 | 19.14 | 19.04 | 18.72 | | | | | | |
| 3 | 64QAM | 1 | 8 | 19.01 | 19.15 | 18.73 | 19.6 | 0 | | | | |
| 3 | 64QAM | 1 | 14 | 18.96 | 19.05 | 18.72 | | | | | | |
| 3 | 64QAM | 8 | 0 | 18.98 | 19.02 | 19.06 | | | | | | |
| 3 | 64QAM | 8 | 4 | 19.00 | 18.97 | 19.05 | | | 19.6 | 0 | | |
| 3 | 64QAM | 8 | 7 | 18.96 | 18.98 | 19.02 | | | | | | |
| 3 | 64QAM | 15 | 0 | 18.95 | 18.90 | 19.03 | | | | | | |
| Channel | | | | 1860.7 | 1890.0 | 1919.3 | Tune-up limit (dBm) | MPR (dB) | | | | |
| Frequency (MHz) | | | | 1860.7 | 1890.0 | 1919.3 | | | | | | |
| 1.4 | QPSK | 1 | 0 | 18.79 | 18.79 | 18.82 | 19.6 | 0 | | | | |
| 1.4 | QPSK | 1 | 3 | 18.83 | 18.73 | 18.84 | | | | | | |
| 1.4 | QPSK | 1 | 5 | 18.87 | 18.66 | 18.80 | | | 19.6 | 0 | | |
| 1.4 | QPSK | 3 | 0 | 18.89 | 18.78 | 18.86 | | | | | | |
| 1.4 | QPSK | 3 | 1 | 18.90 | 18.79 | 18.84 | | | | | | |
| 1.4 | QPSK | 3 | 3 | 18.87 | 18.79 | 18.82 | | | | | 19.6 | 0 |
| 1.4 | QPSK | 6 | 0 | 18.89 | 18.72 | 18.87 | | | | | | |
| 1.4 | 16QAM | 1 | 0 | 19.15 | 18.96 | 19.12 | | | | | | |
| 1.4 | 16QAM | 1 | 3 | 18.90 | 19.06 | 19.15 | 19.6 | 0 | | | | |
| 1.4 | 16QAM | 1 | 5 | 19.09 | 19.04 | 19.15 | | | | | | |
| 1.4 | 16QAM | 3 | 0 | 18.94 | 18.95 | 19.06 | | | | | | |
| 1.4 | 16QAM | 3 | 1 | 19.01 | 18.85 | 19.04 | | | 19.6 | 0 | | |
| 1.4 | 16QAM | 3 | 3 | 18.95 | 18.79 | 18.87 | | | | | | |
| 1.4 | 16QAM | 6 | 0 | 18.85 | 18.73 | 18.88 | | | | | | |
| 1.4 | 64QAM | 1 | 0 | 19.07 | 18.94 | 18.94 | 19.6 | 0 | | | | |
| 1.4 | 64QAM | 1 | 3 | 19.03 | 18.98 | 19.02 | | | | | | |
| 1.4 | 64QAM | 1 | 5 | 18.93 | 18.91 | 18.97 | | | | | | |
| 1.4 | 64QAM | 3 | 0 | 18.96 | 18.86 | 18.99 | | | 19.6 | 0 | | |
| 1.4 | 64QAM | 3 | 1 | 19.02 | 18.89 | 19.07 | | | | | | |
| 1.4 | 64QAM | 3 | 3 | 18.97 | 18.90 | 18.97 | | | | | | |
| 1.4 | 64QAM | 6 | 0 | 18.90 | 18.79 | 18.87 | 19.6 | 0 | | | | |

| Band 4 (AWS Band) | | | | | | | | | | |
|-------------------|--|--|--|--|--|--|--|--|--|--|
|-------------------|--|--|--|--|--|--|--|--|--|--|



| Band 7 (260MHz Band) Part 27 | | | | | | | | | | |
|---------------------------------|------------|---------|-----------|-----------------------------|--------------------------------|------------------------------|---------------------------|-------------|--|--|
| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) | | |
| Channel Frequency (MHz) | | | | 20850 | 21100 | 21350 | | | | |
| 20 | QPSK | 1 | 0 | 19.00 | 19.37 | 19.32 | | | | |
| 20 | QPSK | 1 | 49 | 19.15 | 19.24 | 19.31 | 19.5 | 0 | | |
| 20 | QPSK | 1 | 99 | 19.32 | 19.32 | 19.33 | | | | |
| 20 | QPSK | 50 | 0 | 19.15 | 19.28 | 19.16 | | | | |
| 20 | QPSK | 50 | 24 | 19.21 | 19.22 | 19.18 | 19.5 | 0 | | |
| 20 | QPSK | 50 | 50 | 19.15 | 19.24 | 19.18 | | | | |
| 20 | QPSK | 100 | 0 | 19.19 | 19.22 | 19.20 | | | | |
| 20 | 16QAM | 1 | 49 | 19.18 | 19.26 | 19.28 | 19.5 | 0 | | |
| 20 | 16QAM | 1 | 99 | 19.25 | 19.29 | 19.27 | | | | |
| 20 | 16QAM | 50 | 0 | 19.14 | 19.21 | 19.21 | | | | |
| 20 | 16QAM | 50 | 24 | 19.26 | 19.14 | 19.18 | 19.5 | 0 | | |
| 20 | 16QAM | 50 | 50 | 19.16 | 19.24 | 19.25 | | | | |
| 20 | 16QAM | 100 | 0 | 19.28 | 19.23 | 19.27 | | | | |
| 20 | 84QAM | 1 | 0 | 19.15 | 19.24 | 19.25 | 19.5 | 0 | | |
| 20 | 84QAM | 1 | 49 | 19.18 | 19.26 | 19.28 | | | | |
| 20 | 84QAM | 1 | 99 | 19.26 | 19.21 | 19.23 | | | | |
| 20 | 84QAM | 50 | 0 | 19.14 | 19.14 | 19.16 | | | | |
| 20 | 84QAM | 50 | 24 | 19.28 | 19.29 | 19.19 | 19.5 | 0 | | |
| 20 | 84QAM | 50 | 50 | 19.16 | 19.22 | 19.23 | | | | |
| 20 | 84QAM | 100 | 0 | 19.26 | 19.20 | 19.29 | | | | |
| Channel Frequency (MHz) | | | | 20825 | 21100 | 21375 | Tune-up limit (dBm) | MPR (dB) | | |
| Channel Frequency (MHz) | | | | 2507.5 | 2535 | 2562.5 | | | | |
| 15 | QPSK | 1 | 0 | 18.89 | 19.10 | 19.19 | 19.5 | 0 | | |
| 15 | QPSK | 1 | 37 | 19.06 | 19.12 | 19.13 | | | | |
| 15 | QPSK | 1 | 74 | 19.27 | 19.14 | 19.29 | | | | |
| 15 | QPSK | 36 | 0 | 19.20 | 19.15 | 19.23 | 19.5 | 0 | | |
| 15 | QPSK | 36 | 20 | 19.25 | 19.17 | 19.11 | | | | |
| 15 | QPSK | 36 | 39 | 19.18 | 19.15 | 19.22 | | | | |
| 15 | QPSK | 75 | 0 | 19.20 | 19.14 | 19.28 | 19.5 | 0 | | |
| 15 | 16QAM | 1 | 0 | 19.20 | 19.23 | 19.28 | | | | |
| 15 | 16QAM | 1 | 37 | 19.23 | 19.29 | 19.23 | 19.5 | 0 | | |
| 15 | 16QAM | 1 | 74 | 19.27 | 19.28 | 19.28 | | | | |
| 15 | 16QAM | 36 | 0 | 19.21 | 19.13 | 19.25 | 19.5 | 0 | | |
| 15 | 16QAM | 36 | 20 | 19.27 | 19.17 | 19.13 | | | | |
| 15 | 16QAM | 36 | 39 | 19.24 | 19.13 | 19.20 | | | | |
| 15 | 16QAM | 75 | 0 | 19.19 | 19.13 | 19.25 | 19.5 | 0 | | |
| 15 | 84QAM | 1 | 0 | 19.21 | 19.27 | 19.21 | | | | |
| 15 | 84QAM | 1 | 37 | 19.13 | 19.18 | 19.27 | 19.5 | 0 | | |
| 15 | 84QAM | 1 | 74 | 19.25 | 19.23 | 19.22 | | | | |
| 15 | 84QAM | 36 | 0 | 19.17 | 19.10 | 19.27 | | | | |
| 15 | 84QAM | 36 | 20 | 19.26 | 19.15 | 19.16 | 19.5 | 0 | | |
| 15 | 84QAM | 36 | 39 | 19.21 | 19.16 | 19.21 | | | | |
| 15 | 84QAM | 75 | 0 | 19.18 | 19.13 | 19.21 | | | | |
| Channel Frequency (MHz) | | | | 20800 | 21100 | 21400 | Tune-up limit (dBm) | MPR (dB) | | |
| Channel Frequency (MHz) | | | | 2505 | 2535 | 2565 | | | | |
| 10 | QPSK | 1 | 0 | 19.23 | 19.25 | 19.24 | 19.5 | 0 | | |
| 10 | QPSK | 1 | 25 | 19.00 | 19.22 | 19.28 | | | | |
| 10 | QPSK | 1 | 49 | 19.29 | 19.21 | 19.12 | | | | |
| 10 | QPSK | 25 | 0 | 19.13 | 19.12 | 19.29 | | | | |
| 10 | QPSK | 25 | 12 | 19.01 | 19.17 | 19.27 | 19.5 | 0 | | |
| 10 | QPSK | 25 | 25 | 19.18 | 19.15 | 19.14 | | | | |
| 10 | QPSK | 50 | 0 | 19.23 | 19.22 | 19.18 | | | | |
| 10 | 16QAM | 1 | 0 | 19.27 | 19.23 | 19.28 | 19.5 | 0 | | |
| 10 | 16QAM | 1 | 25 | 19.18 | 19.22 | 19.28 | | | | |
| 10 | 16QAM | 1 | 49 | 19.22 | 19.23 | 19.24 | | | | |
| 10 | 16QAM | 25 | 0 | 19.14 | 19.13 | 19.23 | 19.5 | 0 | | |
| 10 | 16QAM | 25 | 12 | 19.01 | 19.22 | 19.27 | | | | |
| 10 | 16QAM | 25 | 25 | 19.16 | 19.15 | 19.12 | 19.5 | 0 | | |
| 10 | 16QAM | 50 | 0 | 19.23 | 19.25 | 19.15 | | | | |
| 10 | 16QAM | 1 | 0 | 19.25 | 19.29 | 19.29 | 19.5 | 0 | | |
| 10 | 84QAM | 1 | 25 | 19.24 | 19.21 | 19.23 | 19.5 | 0 | | |
| 10 | 84QAM | 1 | 49 | 19.20 | 19.22 | 19.26 | | | | |
| 10 | 84QAM | 25 | 0 | 19.11 | 19.10 | 19.25 | | | | |
| 10 | 84QAM | 25 | 12 | 19.01 | 19.20 | 19.27 | 19.5 | 0 | | |
| 10 | 84QAM | 25 | 25 | 19.21 | 19.15 | 19.13 | | | | |
| 10 | 84QAM | 50 | 0 | 19.22 | 19.23 | 19.16 | | | | |
| Channel Frequency (MHz) | | | | 20775 | 21100 | 21425 | Tune-up limit (dBm) | MPR (dB) | | |
| Channel Frequency (MHz) | | | | 25025 | 2535 | 25675 | | | | |
| 5 | QPSK | 1 | 0 | 19.00 | 19.15 | 19.24 | 19.5 | 0 | | |
| 5 | QPSK | 1 | 12 | 19.08 | 19.21 | 19.26 | | | | |
| 5 | QPSK | 1 | 24 | 19.08 | 19.27 | 19.10 | | | | |
| 5 | QPSK | 12 | 0 | 19.11 | 19.26 | 19.15 | 19.5 | 0 | | |
| 5 | QPSK | 12 | 7 | 19.13 | 19.23 | 19.10 | | | | |
| 5 | QPSK | 12 | 13 | 19.02 | 19.29 | 19.12 | 19.5 | 0 | | |
| 5 | QPSK | 25 | 0 | 19.11 | 19.23 | 19.14 | | | | |
| 5 | 16QAM | 1 | 0 | 19.18 | 19.27 | 19.25 | 19.5 | 0 | | |
| 5 | 16QAM | 1 | 12 | 19.19 | 19.24 | 19.26 | | | | |
| 5 | 16QAM | 1 | 24 | 19.12 | 19.29 | 19.27 | | | | |
| 5 | 16QAM | 12 | 0 | 19.11 | 19.28 | 19.18 | 19.5 | 0 | | |
| 5 | 16QAM | 12 | 7 | 19.16 | 19.27 | 19.14 | | | | |
| 5 | 16QAM | 12 | 13 | 19.06 | 19.28 | 19.13 | 19.5 | 0 | | |
| 5 | 16QAM | 25 | 0 | 19.14 | 19.22 | 19.13 | | | | |
| 5 | 84QAM | 1 | 0 | 19.29 | 19.21 | 19.21 | 19.5 | 0 | | |
| 5 | 84QAM | 1 | 12 | 19.26 | 19.16 | 19.26 | | | | |
| 5 | 84QAM | 1 | 24 | 19.13 | 19.19 | 19.25 | | | | |
| 5 | 84QAM | 12 | 0 | 19.13 | 19.13 | 19.15 | 19.5 | 0 | | |
| 5 | 84QAM | 12 | 7 | 19.14 | 19.27 | 19.15 | | | | |
| 5 | 84QAM | 12 | 13 | 19.06 | 19.10 | 19.18 | | | | |
| 5 | 84QAM | 25 | 0 | 19.10 | 19.24 | 19.14 | | | | |

| Band 12 (700MHz Band) Part 27F(only on channel required) | | | | | | | | | | |
|---|------------|---------|-----------|-----------------------------|--------------------------------|------------------------------|---------------------------|-------------|--|--|
| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) | | |
| Channel Frequency (MHz) | | | | 23060 | 23095 | 23150 | | | | |
| 10 | QPSK | 1 | 0 | 23.31 | 23.31 | 23.32 | | | | |
| 10 | QPSK | 1 | 25 | 23.34 | 23.57 | 23.43 | 24.5 | 0 | | |
| 10 | QPSK | 1 | 49 | 23.38 | 23.68 | 23.56 | | | | |
| 10 | QPSK | 25 | 0 | 22.18 | 22.37 | 22.27 | | | | |
| 10 | QPSK | 25 | 12 | 22.26 | 22.26 | 22.30 | 23.5 | 1 | | |
| 10 | QPSK | 25 | 25 | 22.26 | 22.24 | 22.25 | | | | |
| 10 | QPSK | 50 | 0 | 22.29 | 22.35 | 22.32 | | | | |
| 10 | 16QAM | 1 | 0 | 22.25 | 22.65 | 22.21 | 23.5 | 1 | | |
| 10 | 16QAM | 1 | 25 | 22.29 | 22.64 | 22.60 | | | | |
| 10 | 16QAM | 1 | 49 | 22.60 | 22.85 | 22.60 | | | | |
| 10 | 16QAM | 25 | 0 | 21.29 | 21.30 | 21.31 | | | | |
| 10 | 16QAM | 25 | 12 | 21.22 | 21.27 | 21.39 | 22.5 | 2 | | |
| 10 | 16QAM | 25 | 25 | 21.24 | 21.28 | 21.34 | | | | |
| 10 | 16QAM | 50 | 0 | 21.32 | 21.27 | 21.44 | | | | |
| 10 | 84QAM | 1 | 0 | 21.61 | 21.46 | 21.58 | 22.5 | 2 | | |
| 10 | 84QAM | 1 | 25 | 22.00 | 21.50 | 21.39 | | | | |
| 10 | 84QAM | 1 | 49 | 21.54 | 21.78 | 21.82 | | | | |
| 10 | 84QAM | 25 | 0 | 20.29 | 20.25 | 20.25 | | | | |
| 10 | 84QAM | 25 | 12 | 20.31 | 20.29 | 20.32 | 21.5 | 3 | | |
| 10 | 84QAM | 25 | 25 | 20.29 | 20.26 | 20.29 | | | | |
| 10 | 84QAM | 50 | 0 | 20.29 | 20.26 | 20.29 | | | | |
| Channel Frequency (MHz) | | | | 23035 | 23095 | 23155 | Tune-up limit (dBm) | MPR (dB) | | |
| Channel Frequency (MHz) | | | | 700.5 | 707.5 | 713.5 | | | | |
| 5 | QPSK | 1 | 0 | 23.07 | 23.24 | 23.11 | 24.5 | 0 | | |
| 5 | QPSK | 1 | 12 | 23.15 | 23.15 | 23.13 | | | | |
| 5 | QPSK | 1 | 24 | 23.19 | 23.23 | 23.24 | | | | |
| 5 | QPSK | 12 | 0 | 22.20 | 22.22 | 22.21 | | | | |
| 5 | QPSK | 12 | 7 | 22.15 | 22.16 | 22.20 | 23.5 | 1 | | |
| 5 | QPSK | 12 | 13 | 22.17 | 22.18 | 22.32 | | | | |
| 5 | QPSK | 25 | 0 | 22.17 | 22.15 | 22.24 | | | | |
| 5 | 16QAM | 1 | 0 | 22.36 | 22.77 | 22.84 | 23.5 | 1 | | |
| 5 | 16QAM | 1 | 12 | 22.22 | 22.70 | 22.31 | | | | |
| 5 | 16QAM | 1 | 24 | 22.38 | 22.41 | 22.40 | | | | |
| 5 | 16QAM | 12 | 0 | 21.28 | 21.19 | 21.38 | 22.5 | 2 | | |
| 5 | 16QAM | 12 | 7 | 21.24 | 21.12 | 21.25 | | | | |
| 5 | 16QAM | 12 | 13 | 21.23 | 21.22 | 21.26 | | | | |
| 5 | 16QAM | 25 | 0 | 21.31 | 21.16 | 21.24 | 21.5 | 3 | | |
| 5 | 16QAM | 25 | 12 | 21.27 | 21.48 | 21.49 | | | | |
| 5 | 84QAM | 1 | 12 | 21.13 | 21.49 | 21.59 | 22.5 | 2 | | |
| 5 | 84QAM | 1 | 24 | 21.56 | 21.51 | 21.02 | | | | |
| 5 | 84QAM | 12 | 0 | 20.25 | 20.18 | 20.34 | | | | |
| 5 | 84QAM | 12 | 7 | 20.29 | 20.35 | 20.25 | 21.5 | 3 | | |
| 5 | 84QAM | 12 | 13 | 20.25 | 20.13 | 20.27 | | | | |
| 5 | 84QAM | 25 | 0 | 20.21 | 20.27 | 20.24 | | | | |
| Channel Frequency (MHz) | | | | 23025 | 23095 | 23165 | Tune-up limit (dBm) | MPR (dB) | | |
| Channel Frequency (MHz) | | | | 700.5 | 707.5 | 714.5 | | | | |
| 3 | QPSK | 1 | 0 | 23.09 | 23.17 | 23.09 | 24.5 | 0 | | |
| 3 | QPSK | 1 | 8 | 23.15 | 23.27 | 23.17 | | | | |
| 3 | QPSK | 1 | 14 | 23.11 | 23.20 | 23.22 | | | | |
| 3 | QPSK | 8 | 0 | 22.14 | 22.23 | 22.18 | | | | |
| 3 | QPSK | 8 | 4 | 22.16 | 22.30 | 22.28 | 23.5 | 1 | | |
| 3 | QPSK | 8 | 7 | 22.25 | 22.24 | 22.19 | | | | |
| 3 | QPSK | 15 | 0 | 22.16 | 22.15 | 22.23 | | | | |
| 3 | 16QAM | 1 | 0 | 22.29 | 22.33 | 22.75 | 23.5 | 1 | | |
| 3 | 16QAM | 1 | 8 | 22.37 | 22.68 | 22.82 | | | | |
| 3 | 16QAM | 1 | 14 | 22.57 | 22.68 | 22.61 | | | | |
| 3 | 16QAM | 8 | 0 | 21.24 | 21.25 | 21.16 | 22.5 | 2 | | |
| 3 | 16QAM | 8 | 4 | 21.28 | 21.35 | 21.27 | | | | |
| 3 | 16QAM | 8 | 7 | 21.24 | 21.35 | 21.33 | | | | |
| 3 | 16QAM | 15 | 0 | 21.17 | 21.13 | 21.42 | | | | |
| 3 | 84QAM | 1 | 0 | 21.20 | 21.16 | 21.35 | 22.5 | 2 | | |
| 3 | 84QAM | 1 | 8 | 21.51 | 21.29 | 21.50 | | | | |
| 3 | 84QAM | 1 | 14 | 21.35 | 21.43 | 21.04 | | | | |
| 3 | 84QAM | 8 | | | | | | | | |



| 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 | | | | 26785 | 26885 | 26985 | | | |
| Frequency (MHz) | | | | 821.5 | 831.5 | 841.5 | | | |
| 15 | QPSK | 1 | 0 | 23.76 | 23.61 | 23.62 | | | |
| 15 | QPSK | 1 | 37 | 23.47 | 23.40 | 23.48 | 24.8 | 0 | |
| 15 | QPSK | 1 | 74 | 23.70 | 23.49 | 23.32 | | | |
| 15 | QPSK | 36 | 0 | 22.62 | 22.68 | 22.49 | | | |
| 15 | QPSK | 36 | 20 | 22.52 | 22.90 | 22.53 | 23.8 | 1 | |
| 15 | QPSK | 36 | 39 | 22.53 | 22.70 | 22.57 | | | |
| 15 | QPSK | 75 | 0 | 22.51 | 22.82 | 22.79 | | | |
| 15 | 16QAM | 1 | 0 | 22.76 | 22.72 | 22.63 | | | |
| 15 | 16QAM | 1 | 37 | 22.89 | 22.76 | 22.70 | 23.8 | 1 | |
| 15 | 16QAM | 1 | 74 | 22.84 | 22.77 | 22.54 | | | |
| 15 | 16QAM | 36 | 0 | 21.56 | 21.69 | 21.53 | | | |
| 15 | 16QAM | 36 | 20 | 21.45 | 21.37 | 21.56 | 22.8 | 2 | |
| 15 | 16QAM | 36 | 39 | 21.48 | 21.70 | 21.67 | | | |
| 15 | 16QAM | 75 | 0 | 21.48 | 21.77 | 21.56 | | | |
| 15 | 64QAM | 1 | 0 | 21.52 | 21.84 | 21.98 | | | |
| 15 | 64QAM | 1 | 37 | 21.96 | 22.02 | 21.85 | 22.8 | 2 | |
| 15 | 64QAM | 1 | 74 | 21.82 | 21.83 | 21.79 | | | |
| 15 | 64QAM | 36 | 0 | 20.54 | 20.77 | 20.63 | | | |
| 15 | 64QAM | 36 | 20 | 20.44 | 20.70 | 20.62 | 21.8 | 3 | |
| 15 | 64QAM | 36 | 39 | 20.54 | 20.80 | 20.66 | | | |
| 15 | 64QAM | 75 | 0 | 20.48 | 20.78 | 20.58 | | | |
| Channel | | | | 26740 | 26885 | 26990 | | | |
| Frequency (MHz) | | | | 819 | 831.5 | 844 | | | |
| 10 | QPSK | 1 | 0 | 23.61 | 23.69 | 23.40 | | | |
| 10 | QPSK | 1 | 25 | 23.45 | 23.46 | 23.61 | 24.8 | 0 | |
| 10 | QPSK | 1 | 49 | 23.49 | 23.52 | 23.51 | | | |
| 10 | QPSK | 25 | 0 | 22.60 | 23.32 | 23.22 | | | |
| 10 | QPSK | 25 | 12 | 22.48 | 22.89 | 23.27 | 23.8 | 1 | |
| 10 | QPSK | 25 | 25 | 22.55 | 22.78 | 23.26 | | | |
| 10 | QPSK | 50 | 0 | 22.64 | 23.23 | 23.21 | | | |
| 10 | 16QAM | 1 | 0 | 22.78 | 23.45 | 23.33 | | | |
| 10 | 16QAM | 1 | 25 | 22.66 | 23.19 | 23.34 | 23.8 | 1 | |
| 10 | 16QAM | 1 | 49 | 22.91 | 23.47 | 23.54 | | | |
| 10 | 16QAM | 25 | 0 | 21.63 | 21.90 | 22.40 | | | |
| 10 | 16QAM | 25 | 12 | 21.56 | 21.82 | 22.13 | 22.8 | 2 | |
| 10 | 16QAM | 25 | 25 | 21.66 | 21.84 | 22.24 | | | |
| 10 | 16QAM | 50 | 0 | 21.63 | 21.95 | 22.32 | | | |
| 10 | 64QAM | 1 | 0 | 21.55 | 22.24 | 22.27 | | | |
| 10 | 64QAM | 1 | 25 | 21.64 | 22.05 | 22.19 | 22.8 | 2 | |
| 10 | 64QAM | 1 | 49 | 21.90 | 21.95 | 22.50 | | | |
| 10 | 64QAM | 25 | 0 | 20.61 | 20.73 | 21.10 | | | |
| 10 | 64QAM | 25 | 12 | 20.54 | 20.64 | 21.18 | 21.8 | 3 | |
| 10 | 64QAM | 25 | 25 | 20.64 | 20.66 | 21.28 | | | |
| 10 | 64QAM | 50 | 0 | 20.56 | 20.90 | 21.24 | | | |
| Channel | | | | 26715 | 26885 | 27015 | | | |
| Frequency (MHz) | | | | 816.5 | 831.5 | 846.5 | | | |
| 5 | QPSK | 1 | 0 | 23.47 | 23.56 | 23.60 | | | |
| 5 | QPSK | 1 | 12 | 23.49 | 23.66 | 23.54 | 24.8 | 0 | |
| 5 | QPSK | 1 | 24 | 23.54 | 23.72 | 23.55 | | | |
| 5 | QPSK | 12 | 0 | 22.55 | 22.78 | 23.22 | | | |
| 5 | QPSK | 12 | 7 | 22.56 | 22.77 | 23.27 | 23.8 | 1 | |
| 5 | QPSK | 12 | 13 | 22.57 | 22.80 | 23.23 | | | |
| 5 | QPSK | 25 | 0 | 22.56 | 22.80 | 23.16 | | | |
| 5 | 16QAM | 1 | 0 | 23.11 | 23.08 | 23.39 | | | |
| 5 | 16QAM | 1 | 12 | 23.02 | 23.11 | 23.42 | 23.8 | 1 | |
| 5 | 16QAM | 1 | 24 | 23.23 | 22.90 | 23.33 | | | |
| 5 | 16QAM | 12 | 0 | 21.68 | 21.85 | 22.30 | | | |
| 5 | 16QAM | 12 | 7 | 21.75 | 21.79 | 22.18 | 22.8 | 2 | |
| 5 | 16QAM | 12 | 13 | 21.76 | 21.88 | 22.20 | | | |
| 5 | 16QAM | 25 | 0 | 21.61 | 21.76 | 22.25 | | | |
| 5 | 64QAM | 1 | 0 | 21.93 | 22.29 | 22.63 | | | |
| 5 | 64QAM | 1 | 12 | 21.83 | 22.11 | 22.06 | 22.8 | 2 | |
| 5 | 64QAM | 1 | 24 | 21.40 | 22.02 | 22.09 | | | |
| 5 | 64QAM | 12 | 0 | 20.65 | 20.78 | 21.30 | | | |
| 5 | 64QAM | 12 | 7 | 20.73 | 20.79 | 21.19 | 21.8 | 3 | |
| 5 | 64QAM | 12 | 13 | 20.75 | 20.88 | 21.27 | | | |
| 5 | 64QAM | 25 | 0 | 20.66 | 20.69 | 21.23 | | | |
| Channel | | | | 26705 | 26885 | 27025 | | | |
| Frequency (MHz) | | | | 815.5 | 831.5 | 847.5 | | | |
| 3 | QPSK | 1 | 0 | 23.44 | 23.55 | 23.68 | | | |
| 3 | QPSK | 1 | 8 | 23.50 | 23.55 | 23.73 | 24.8 | 0 | |
| 3 | QPSK | 1 | 14 | 23.51 | 23.47 | 23.58 | | | |
| 3 | QPSK | 8 | 0 | 22.70 | 22.76 | 23.16 | | | |
| 3 | QPSK | 8 | 4 | 22.60 | 22.69 | 23.21 | 23.8 | 1 | |
| 3 | QPSK | 8 | 7 | 22.49 | 22.76 | 23.30 | | | |
| 3 | QPSK | 15 | 0 | 22.56 | 22.77 | 23.18 | | | |
| 3 | 16QAM | 1 | 0 | 23.20 | 23.47 | 23.26 | | | |
| 3 | 16QAM | 1 | 9 | 22.67 | 23.09 | 23.31 | 23.8 | 1 | |
| 3 | 16QAM | 1 | 14 | 22.99 | 23.13 | 23.31 | | | |
| 3 | 16QAM | 8 | 0 | 21.76 | 21.78 | 22.27 | | | |
| 3 | 16QAM | 8 | 4 | 21.71 | 21.82 | 22.31 | 22.8 | 2 | |
| 3 | 16QAM | 8 | 7 | 21.61 | 21.79 | 22.27 | | | |
| 3 | 16QAM | 15 | 0 | 21.72 | 21.68 | 22.37 | | | |
| 3 | 64QAM | 1 | 0 | 21.72 | 22.08 | 22.35 | | | |
| 3 | 64QAM | 1 | 8 | 21.97 | 22.09 | 22.23 | 22.8 | 2 | |
| 3 | 64QAM | 1 | 14 | 21.60 | 21.87 | 22.37 | | | |
| 3 | 64QAM | 8 | 0 | 20.70 | 20.73 | 21.26 | | | |
| 3 | 64QAM | 8 | 4 | 20.70 | 20.76 | 21.30 | 21.8 | 3 | |
| 3 | 64QAM | 8 | 7 | 20.77 | 20.73 | 21.16 | | | |
| 3 | 64QAM | 15 | 0 | 20.61 | 20.85 | 21.24 | | | |
| Channel | | | | 26697 | 26885 | 27033 | | | |
| Frequency (MHz) | | | | 814.7 | 831.5 | 848.3 | | | |
| 1.4 | QPSK | 1 | 0 | 23.35 | 23.38 | 23.64 | | | |
| 1.4 | QPSK | 1 | 3 | 23.66 | 23.69 | 23.68 | 24.8 | 0 | |
| 1.4 | QPSK | 1 | 5 | 23.62 | 23.62 | 23.52 | | | |
| 1.4 | QPSK | 3 | 0 | 23.49 | 23.73 | 23.51 | | | |
| 1.4 | QPSK | 3 | 1 | 23.56 | 23.57 | 23.63 | | | |
| 1.4 | QPSK | 3 | 3 | 23.69 | 23.62 | 23.50 | | | |
| 1.4 | QPSK | 6 | 0 | 22.47 | 22.59 | 23.10 | 23.8 | 1 | |
| 1.4 | 16QAM | 1 | 0 | 23.02 | 23.09 | 23.30 | | | |
| 1.4 | 16QAM | 1 | 3 | 22.80 | 23.03 | 23.25 | | | |
| 1.4 | 16QAM | 1 | 5 | 22.73 | 23.15 | 23.30 | 23.8 | 1 | |
| 1.4 | 16QAM | 3 | 0 | 22.53 | 22.68 | 23.14 | | | |
| 1.4 | 16QAM | 3 | 1 | 22.70 | 22.54 | 23.13 | | | |
| 1.4 | 16QAM | 3 | 3 | 22.45 | 22.70 | 23.10 | | | |
| 1.4 | 16QAM | 6 | 0 | 21.73 | 21.78 | 22.10 | 22.8 | 2 | |
| 1.4 | 64QAM | 1 | 0 | 21.74 | 21.83 | 22.22 | | | |
| 1.4 | 64QAM | 1 | 3 | 21.46 | 21.58 | 22.12 | | | |
| 1.4 | 64QAM | 1 | 5 | 21.58 | 21.99 | 22.33 | 22.8 | 2 | |
| 1.4 | 64QAM | 3 | 0 | 21.44 | 21.47 | 22.10 | | | |
| 1.4 | 64QAM | 3 | 1 | 21.76 | 21.77 | 22.19 | | | |
| 1.4 | 64QAM | 3 | 3 | 21.82 | 21.78 | 22.15 | | | |
| 1.4 | 64QAM | 6 | 0 | 20.60 | 20.61 | 21.08 | 21.8 | 3 | |



| Band 38(only on channel required) | | | | | | | | | | | |
|-----------------------------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|----------|--|--|--|
| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) | | | |
| Channel Frequency (MHz) | | | | 37850 | 38000 | 38150 | | | | | |
| 20 | QPSK | 1 | 0 | 18.72 | 18.57 | 18.32 | 19 | 0 | | | |
| 20 | QPSK | 1 | 49 | 18.57 | 18.45 | 18.33 | | | | | |
| 20 | QPSK | 1 | 99 | 18.79 | 18.54 | 18.31 | | | | | |
| 20 | QPSK | 50 | 0 | 18.41 | 18.36 | 18.33 | 19 | 0 | | | |
| 20 | QPSK | 50 | 24 | 18.54 | 18.32 | 18.57 | | | | | |
| 20 | QPSK | 50 | 50 | 18.33 | 18.51 | 18.59 | | | | | |
| 20 | QPSK | 100 | 0 | 18.32 | 18.49 | 18.30 | 19 | 0 | | | |
| 20 | 16QAM | 1 | 0 | 18.74 | 18.40 | 18.31 | | | | | |
| 20 | 16QAM | 1 | 49 | 18.39 | 18.34 | 18.38 | | | | | |
| 20 | 16QAM | 1 | 99 | 18.31 | 18.52 | 18.75 | 19 | 0 | | | |
| 20 | 16QAM | 50 | 0 | 18.39 | 18.42 | 18.31 | | | | | |
| 20 | 16QAM | 50 | 24 | 18.54 | 18.37 | 18.38 | | | | | |
| 20 | 16QAM | 50 | 50 | 18.32 | 18.51 | 18.39 | 19 | 0 | | | |
| 20 | 16QAM | 100 | 0 | 18.42 | 18.34 | 18.78 | | | | | |
| 20 | 16QAM | 1 | 0 | 18.47 | 18.50 | 18.35 | | | | | |
| 20 | 64QAM | 1 | 49 | 18.38 | 18.31 | 18.42 | 19 | 0 | | | |
| 20 | 64QAM | 1 | 99 | 18.39 | 18.02 | 18.39 | | | | | |
| 20 | 64QAM | 50 | 0 | 18.28 | 18.36 | 18.36 | | | | | |
| 20 | 64QAM | 50 | 24 | 18.48 | 18.31 | 18.49 | 19 | 0 | | | |
| 20 | 64QAM | 50 | 50 | 18.74 | 18.45 | 18.73 | | | | | |
| 20 | 64QAM | 100 | 0 | 18.76 | 18.58 | 18.41 | | | | | |
| Channel Frequency (MHz) | | | | 37825 | 38000 | 38175 | | | | | |
| 15 | QPSK | 1 | 0 | 18.78 | 18.72 | 18.48 | 19 | 0 | | | |
| 15 | QPSK | 1 | 37 | 18.36 | 18.14 | 18.32 | | | | | |
| 15 | QPSK | 1 | 74 | 18.30 | 18.35 | 18.42 | | | | | |
| 15 | QPSK | 36 | 0 | 18.53 | 18.31 | 18.56 | 19 | 0 | | | |
| 15 | QPSK | 36 | 20 | 18.72 | 18.28 | 18.31 | | | | | |
| 15 | QPSK | 36 | 39 | 18.38 | 18.47 | 18.42 | | | | | |
| 15 | QPSK | 75 | 0 | 18.74 | 18.40 | 18.33 | 19 | 0 | | | |
| 15 | 16QAM | 1 | 0 | 18.36 | 18.33 | 18.34 | | | | | |
| 15 | 16QAM | 1 | 37 | 18.45 | 18.57 | 18.38 | | | | | |
| 15 | 16QAM | 1 | 74 | 18.47 | 18.46 | 18.44 | 19 | 0 | | | |
| 15 | 16QAM | 36 | 0 | 18.41 | 18.23 | 18.58 | | | | | |
| 15 | 16QAM | 36 | 20 | 18.38 | 18.38 | 18.38 | | | | | |
| 15 | 16QAM | 36 | 39 | 18.72 | 18.57 | 18.77 | 19 | 0 | | | |
| 15 | 16QAM | 75 | 0 | 18.74 | 18.42 | 18.33 | | | | | |
| 15 | 64QAM | 1 | 0 | 18.48 | 18.50 | 18.40 | | | | | |
| 15 | 64QAM | 1 | 37 | 18.56 | 18.34 | 18.41 | 19 | 0 | | | |
| 15 | 64QAM | 1 | 74 | 18.44 | 18.43 | 18.37 | | | | | |
| 15 | 64QAM | 36 | 0 | 18.70 | 18.34 | 18.31 | | | | | |
| 15 | 64QAM | 36 | 20 | 18.39 | 18.40 | 18.55 | 19 | 0 | | | |
| 15 | 64QAM | 36 | 39 | 18.43 | 18.50 | 18.40 | | | | | |
| 15 | 64QAM | 75 | 0 | 18.72 | 18.50 | 18.39 | | | | | |
| Channel Frequency (MHz) | | | | 37800 | 38000 | 38200 | | | | | |
| 10 | QPSK | 1 | 0 | 18.46 | 18.36 | 18.42 | 19 | 0 | | | |
| 10 | QPSK | 1 | 25 | 18.35 | 18.30 | 18.46 | | | | | |
| 10 | QPSK | 1 | 49 | 18.36 | 18.31 | 18.39 | | | | | |
| 10 | QPSK | 25 | 0 | 18.37 | 18.58 | 18.35 | 19 | 0 | | | |
| 10 | QPSK | 25 | 12 | 18.37 | 18.46 | 18.39 | | | | | |
| 10 | QPSK | 25 | 25 | 18.34 | 18.45 | 18.48 | | | | | |
| 10 | QPSK | 50 | 0 | 18.43 | 18.34 | 18.37 | 19 | 0 | | | |
| 10 | 16QAM | 1 | 0 | 18.34 | 18.45 | 18.39 | | | | | |
| 10 | 16QAM | 1 | 25 | 18.41 | 18.41 | 18.39 | | | | | |
| 10 | 16QAM | 1 | 49 | 18.35 | 18.45 | 18.32 | 19 | 0 | | | |
| 10 | 16QAM | 25 | 0 | 18.39 | 18.56 | 18.35 | | | | | |
| 10 | 16QAM | 25 | 12 | 18.38 | 18.50 | 18.36 | | | | | |
| 10 | 16QAM | 25 | 25 | 18.35 | 18.50 | 18.37 | 19 | 0 | | | |
| 10 | 16QAM | 50 | 0 | 18.46 | 18.36 | 18.36 | | | | | |
| 10 | 64QAM | 1 | 0 | 18.36 | 18.30 | 18.32 | | | | | |
| 10 | 64QAM | 1 | 25 | 18.49 | 18.37 | 18.53 | 19 | 0 | | | |
| 10 | 64QAM | 1 | 49 | 18.31 | 18.20 | 18.46 | | | | | |
| 10 | 64QAM | 25 | 0 | 18.33 | 18.30 | 18.39 | | | | | |
| 10 | 64QAM | 25 | 12 | 18.42 | 18.43 | 18.31 | 19 | 0 | | | |
| 10 | 64QAM | 25 | 25 | 18.39 | 18.54 | 18.42 | | | | | |
| 10 | 64QAM | 50 | 0 | 18.40 | 18.52 | 18.38 | | | | | |
| Channel Frequency (MHz) | | | | 37775 | 38000 | 38225 | | | | | |
| 5 | QPSK | 1 | 0 | 18.46 | 18.59 | 18.39 | 19 | 0 | | | |
| 5 | QPSK | 1 | 12 | 18.42 | 18.55 | 18.38 | | | | | |
| 5 | QPSK | 1 | 24 | 18.46 | 18.41 | 18.37 | | | | | |
| 5 | QPSK | 12 | 0 | 18.35 | 18.53 | 18.43 | 19 | 0 | | | |
| 5 | QPSK | 12 | 7 | 18.57 | 18.45 | 18.44 | | | | | |
| 5 | QPSK | 12 | 13 | 18.35 | 18.46 | 18.43 | | | | | |
| 5 | QPSK | 25 | 0 | 18.38 | 18.49 | 18.47 | 19 | 0 | | | |
| 5 | 16QAM | 1 | 0 | 18.45 | 18.36 | 18.41 | | | | | |
| 5 | 16QAM | 1 | 12 | 18.30 | 18.47 | 18.31 | | | | | |
| 5 | 16QAM | 1 | 24 | 18.47 | 18.31 | 18.45 | 19 | 0 | | | |
| 5 | 16QAM | 12 | 0 | 18.31 | 18.53 | 18.47 | | | | | |
| 5 | 16QAM | 12 | 7 | 18.40 | 18.44 | 18.37 | | | | | |
| 5 | 16QAM | 12 | 13 | 18.30 | 18.43 | 18.37 | 19 | 0 | | | |
| 5 | 16QAM | 25 | 0 | 18.31 | 18.54 | 18.47 | | | | | |
| 5 | 64QAM | 1 | 0 | 18.42 | 18.37 | 18.38 | | | | | |
| 5 | 64QAM | 1 | 12 | 18.33 | 18.43 | 18.35 | 19 | 0 | | | |
| 5 | 64QAM | 1 | 24 | 18.34 | 18.36 | 18.59 | | | | | |
| 5 | 64QAM | 12 | 0 | 18.38 | 18.51 | 18.44 | | | | | |
| 5 | 64QAM | 12 | 7 | 18.47 | 18.52 | 18.46 | 19 | 0 | | | |
| 5 | 64QAM | 12 | 13 | 18.47 | 18.42 | 18.44 | | | | | |
| 5 | 64QAM | 25 | 0 | 18.35 | 18.47 | 18.40 | | | | | |

| Band 41 (2.6G Band) | | | | | | | | | | | | |
|-------------------------|------------|---------|-----------|-----------------------|------------------------------|--------------------------|-------------------------------|------------------------|---------------------|----------|--|--|
| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Low Middle Ch. / Freq. | Power Middle Ch. / Freq. | Power High Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) | | |
| Channel Frequency (MHz) | | | | 39750 | 40185 | 40620 | 41055 | 41490 | | | | |
| 20 | QPSK | 1 | 0 | 18.29 | 18.26 | 18.41 | 18.38 | 18.44 | 19 | 0 | | |
| 20 | QPSK | 1 | 49 | 18.23 | 18.35 | 18.40 | 18.32 | 18.30 | | | | |
| 20 | QPSK | 1 | 99 | 18.43 | 18.35 | 18.31 | 18.38 | 18.32 | | | | |
| 20 | QPSK | 50 | 0 | 18.24 | 18.20 | 18.22 | 18.23 | 18.43 | 19 | 0 | | |
| 20 | QPSK | 50 | 24 | 18.23 | 18.22 | 18.26 | 18.25 | 18.27 | | | | |
| 20 | QPSK | 50 | 50 | 18.33 | 18.33 | 18.35 | 18.35 | 18.39 | | | | |
| 20 | QPSK | 100 | 0 | 18.25 | 18.30 | 18.26 | 18.37 | 18.38 | 19 | 0 | | |
| 20 | 16QAM | 1 | 0 | 18.34 | 18.21 | 18.25 | 18.22 | 18.38 | | | | |
| 20 | 16QAM | 1 | 49 | 18.31 | 18.28 | 18.25 | 18.20 | 18.39 | | | | |
| 20 | 16QAM | 1 | 99 | 18.34 | 18.27 | 18.30 | 18.25 | 18.30 | 19 | 0 | | |
| 20 | 16QAM | 50 | 0 | 18.26 | 18.20 | 18.22 | 18.22 | 18.26 | | | | |
| 20 | 16QAM | 50 | 24 | 18.31 | 18.23 | 18.27 | 18.26 | 18.33 | | | | |
| 20 | 16QAM | 50 | 50 | 18.22 | 18.26 | 18.27 | 18.35 | 18.37 | 19 | 0 | | |
| 20 | 16QAM | 100 | 0 | 18.36 | 18.34 | 18.27 | 18.26 | 18.35 | | | | |
| 20 | 64QAM | 1 | 0 | 18.38 | 18.29 | 18.15 | 18.28 | 18.26 | | | | |
| 20 | 64QAM | 1 | 49 | 18.14 | 18.39 | 18.31 | 18.37 | 18.38 | 19 | 0 | | |
| 20 | 64QAM | 1 | 99 | 18.27 | 18.27 | 18.20 | 18.27 | 18.31 | | | | |
| 20 | 64QAM | 50 | 0 | 18.30 | 18.33 | 18.35 | 18.35 | 18.21 | | | | |
| 20 | 64QAM | 50 | 24 | 18.24 | 18.26 | 18.21 | 18.27 | 18.27 | 19 | 0 | | |
| 20 | 64QAM | 50 | 50 | 18.35 | 18.20 | 18.39 | 18.38 | 18.32 | | | | |
| 20 | 64QAM | 100 | 0 | 18.20 | 18.37 | 18.29 | 18.29 | 18.39 | | | | |
| Channel Frequency (MHz) | | | | 39725 | 40173 | 40620 | 41088 | 41515 | | | | |
| 15 | QPSK | 1 | 0 | 17.86 | 18.01 | 17.94 | 18.07 | 18.22 | 19 | 0 | | |
| 15 | QPSK | 1 | 37 | 18.17 | 17.89 | 18.27 | 18.25 | 18.20 | | | | |
| 15 | QPSK | 1 | 74 | 17.78 | 17.71 | 17.73 | 17.73 | 17.82 | | | | |
| 15 | QPSK | 36 | 0 | 18.36 | 18.22 | 18.35 | 18.21 | 18.39 | 19 | 0 | | |
| 15 | QPSK | 36 | 20 | 18.25 | 18.24 | 18.32 | 18.32 | 18.27 | | | | |
| 15 | QPSK | 36 | 39 | 17.89 | 18.18 | 18.03 | 18.09 | 18.16 | | | | |
| 15 | QPSK | 75 | 0 | 18.18 | 18.30 | 18.24 | 18.24 | 18.21 | 19 | 0 | | |
| 15 | 16QAM | 1 | 0 | 18.20 | 18.22 | 18.24 | 18.31 | 18.33 | | | | |
| 15 | 16QAM | 1 | 37 | 18.22 | 18.32 | 18.35 | 18.30 | 18.25 | | | | |
| 15 | 16QAM | 1 | 74 | 17.70 | 18.16 | 17.96 | 17.97 | 17.76 | 19 | 0 | | |
| 15 | 16QAM | 36 | 0 | 18.32 | 18.21 | 18.39 | 18.27 | 18.30 | | | | |
| 15 | 16QAM | 36 | 20 | 18.20 | 18.25 | 18.29 | 18.38 | 18.28 | | | | |
| 15 | 16QAM | 36 | 39 | 17.82 | 18.17 | 17.93 | 17.95 | 18.15 | 19 | 0 | | |
| 15 | 16QAM | 75 | 0 | 18.12 | 18.31 | 18.25 | 18.22 | 18.35 | | | | |
| 15 | 64QAM | 1 | 0 | 17.96 | 18.19 | 18.15 | 17.76 | 18.17 | | | | |
| 15 | 64QAM | 1 | 37 | 18.26 | 18.03 | 18.23 | 18.23 | 18.27 | 19 | 0 | | |
| 15 | 64QAM | 1 | 74 | 17.31 | 17.98 | 17.51 | 17.70 | 17.82 | | | | |
| 15 | 64QAM | 36 | 0 | 18.35 | 18.34 | 18.33 | 18.38 | 18.20 | | | | |
| 15 | 64QAM | 36 | 20 | 18.23 | 18.34 | 18.31 | 18.38 | 18.21 | 19 | 0 | | |
| 15 | 64QAM | 36 | 39 | 18.07 | 18.31 | 17.95 | 18.06 | 18.26 | | | | |
| 15 | 64QAM | 75 | 0 | 18.09 | 18.30 | 18.13 | 18.22 | 18.24 | | | | |
| Channel Frequency (MHz) | | | | 39700 | 40160 | 40620 | 41080 | 41540 | | | | |
| 10 | QPSK | 1 | 0 | 17.43 | 17.54 | 17.48 | 17.68 | 17.76 | 19 | 0 | | |
| 10 | QPSK | 1 | 25 | 17.28 | 17.44 | 17.35 | 17.50 | 17.45 | | | | |
| 10 | QPSK | 1 | 49 | 17.24 | 17.42 | 17.45 | 17.62 | 17.50 | | | | |
| 10 | QPSK | 25 | 0 | 17.12 | 17.47 | 17.41 | 17.64 | 17.72 | 19 | 0 | | |
| 10 | QPSK | 25 | 12 | 17.14 | 17.47 | 17.27 | 17.59 | 17.53 | | | | |
| 10 | QPSK | 25 | 25 | 17.22 | 17.33 | 17.25 | 17.51 | 17.57 | | | | |
| 10 | QPSK | 50 | 0 | 17.04 | 17.45 | 17.45 | 17.56 | 17.60 | 19 | 0 | | |
| 10 | 16QAM | 1 | 0 | 17.61 | 17.70 | 17.77 | 18.08 | 17.97 | | | | |
| 10 | 16QAM | 1 | 25 | 17.64 | 17.51 | 17.47 | 18.03 | 17.82 | | | | |
| 10 | 16QAM | 1 | 49 | 17.60 | 17.32 | 17.72 | 17.86 | 17.86 | 19 | 0 | | |
| 10 | 16QAM | 25 | 0 | 17.32 | 17.42 | 17.43 | 17.66 | 17.61 | | | | |
| 10 | 16QAM | 25 | 12 | 17.39 | 17.33 | | | | | | | |



WWAN Bottom Antenna--Receiver off

| GSM850 | Burst Average Power (dBm) | | | Tune-up Limit (dBm) | Frame-Average Power (dBm) | | | Tune-up Limit (dBm) |
|-----------------------|---------------------------|-------|-------|---------------------|---------------------------|-------|-------|---------------------|
| | 128 | 169 | 251 | | 128 | 169 | 251 | |
| TX Channel | 128 | 169 | 251 | Limit | 128 | 169 | 251 | Limit |
| Frequency (MHz) | 124.2 | 163.4 | 243.3 | (dBm) | 124.2 | 163.4 | 243.3 | (dBm) |
| GSM 1 Tx slot | 32.51 | 32.86 | 32.87 | 34.00 | 23.51 | 23.86 | 23.87 | 25.00 |
| GPRS 1 Tx slot | 32.49 | 32.79 | 32.86 | 34.00 | 23.49 | 23.79 | 23.86 | 25.00 |
| GPRS 2 Tx slots | 30.90 | 30.93 | 30.91 | 32.00 | 24.90 | 24.93 | 24.91 | 26.00 |
| GPRS 3 Tx slots | 28.44 | 28.66 | 28.85 | 30.00 | 24.18 | 24.40 | 24.59 | 25.74 |
| GPRS 4 Tx slots | 27.94 | 28.10 | 28.08 | 29.00 | 24.94 | 25.10 | 25.08 | 26.00 |
| EDGE(GMSK 1 Tx slot) | 32.41 | 32.74 | 32.82 | 34.00 | 23.41 | 23.74 | 23.82 | 25.00 |
| EDGE(GMSK 2 Tx slots) | 30.88 | 30.90 | 30.86 | 32.00 | 24.88 | 24.90 | 24.88 | 26.00 |
| EDGE(GMSK 3 Tx slots) | 28.39 | 28.61 | 28.82 | 30.00 | 24.13 | 24.35 | 24.56 | 25.74 |
| EDGE(GMSK 4 Tx slots) | 27.91 | 28.08 | 28.01 | 29.00 | 24.91 | 25.08 | 25.01 | 26.00 |
| EDGE(8PSK 1 Tx slot) | 25.53 | 25.67 | 25.61 | 27.00 | 16.53 | 16.67 | 16.61 | 18.00 |
| EDGE(8PSK 2 Tx slots) | 24.42 | 24.19 | 24.34 | 25.50 | 16.42 | 16.19 | 16.34 | 19.50 |
| EDGE(8PSK 3 Tx slots) | 23.41 | 22.92 | 23.20 | 24.50 | 19.15 | 18.66 | 18.94 | 20.24 |
| EDGE(8PSK 4 Tx slots) | 22.64 | 22.31 | 22.47 | 23.50 | 19.64 | 19.31 | 19.47 | 20.50 |

| GSM1900 | Burst Average Power (dBm) | | | Tune-up Limit (dBm) | Frame-Average Power (dBm) | | | Tune-up Limit (dBm) |
|-----------------------|---------------------------|-------|--------|---------------------|---------------------------|-------|--------|---------------------|
| | 512 | 661 | 810 | | 512 | 661 | 810 | |
| TX Channel | 512 | 661 | 810 | Limit | 512 | 661 | 810 | Limit |
| Frequency (MHz) | 1850.2 | 1880 | 1909.8 | (dBm) | 1850.2 | 1880 | 1909.8 | (dBm) |
| GSM 1 Tx slot | 24.48 | 24.89 | 24.63 | 26.00 | 15.48 | 15.89 | 15.63 | 17.00 |
| GPRS 1 Tx slot | 24.45 | 24.82 | 24.58 | 26.00 | 15.45 | 15.82 | 15.58 | 17.00 |
| GPRS 2 Tx slots | 21.30 | 21.51 | 21.80 | 23.00 | 15.30 | 15.51 | 15.80 | 17.00 |
| GPRS 3 Tx slots | 20.69 | 20.85 | 21.00 | 22.00 | 16.43 | 16.59 | 16.74 | 17.74 |
| GPRS 4 Tx slots | 19.67 | 19.78 | 19.85 | 21.00 | 16.87 | 16.78 | 16.85 | 19.00 |
| EDGE(GMSK 1 Tx slot) | 24.42 | 24.82 | 24.56 | 26.00 | 15.42 | 15.82 | 15.56 | 17.00 |
| EDGE(GMSK 2 Tx slots) | 21.28 | 21.45 | 21.71 | 23.00 | 15.28 | 15.45 | 15.71 | 17.00 |
| EDGE(GMSK 3 Tx slots) | 20.65 | 20.82 | 20.95 | 22.00 | 16.39 | 16.56 | 16.69 | 17.74 |
| EDGE(GMSK 4 Tx slots) | 19.53 | 19.73 | 19.82 | 21.00 | 16.53 | 16.73 | 16.82 | 18.00 |
| EDGE(8PSK 1 Tx slot) | 21.63 | 21.64 | 21.51 | 23.00 | 12.63 | 12.64 | 12.51 | 14.00 |
| EDGE(8PSK 2 Tx slots) | 18.84 | 18.66 | 18.76 | 20.00 | 12.84 | 12.86 | 12.76 | 14.00 |
| EDGE(8PSK 3 Tx slots) | 17.44 | 17.58 | 17.54 | 19.00 | 13.18 | 13.32 | 13.28 | 14.74 |
| EDGE(8PSK 4 Tx slots) | 15.57 | 15.87 | 15.74 | 17.00 | 12.57 | 12.87 | 12.74 | 14.00 |

| Band | Tx Channel | WCDMA II | | | Tune-up Limit (dBm) | WCDMA IV | | | Tune-up Limit (dBm) | WCDMA V | | | Tune-up Limit (dBm) |
|-------------|-------------------------|----------|-------|--------|---------------------|----------|--------|--------|---------------------|---------|--------|--------|---------------------|
| | | 9262 | 9400 | 9538 | | 1312 | 1413 | 1513 | | 4132 | 4182 | 4233 | |
| | Rx Channel | 9662 | 9800 | 9938 | Limit | 1312 | 1413 | 1513 | Limit | 4132 | 4182 | 4233 | Limit |
| | Frequency (MHz) | 1322.4 | 1336 | 1350.6 | (dBm) | 1312.4 | 1326.3 | 1340.5 | (dBm) | 4132.4 | 4146.4 | 4160.5 | (dBm) |
| 3GPP Rel 99 | AMR 12.2Kbps | 20.17 | 20.21 | 20.31 | 21.50 | 20.25 | 20.36 | 19.98 | 21.30 | 23.65 | 23.74 | 23.81 | 25.00 |
| 3GPP Rel 99 | RMC 12.2Kbps | 20.18 | 20.23 | 20.32 | 21.50 | 20.24 | 20.38 | 20.00 | 21.30 | 23.66 | 23.75 | 23.82 | 25.00 |
| 3GPP Rel 6 | HSDPA Subtest-1 | 19.15 | 19.24 | 19.24 | 20.50 | 19.24 | 19.24 | 19.03 | 20.30 | 22.34 | 22.45 | 22.58 | 24.00 |
| 3GPP Rel 6 | HSDPA Subtest-2 | 19.17 | 19.23 | 19.23 | 20.50 | 19.26 | 19.21 | 18.98 | 20.30 | 22.34 | 22.46 | 22.58 | 24.00 |
| 3GPP Rel 6 | HSDPA Subtest-3 | 18.66 | 18.70 | 18.70 | 20.00 | 18.78 | 18.75 | 18.50 | 19.80 | 21.87 | 21.96 | 22.09 | 23.50 |
| 3GPP Rel 6 | HSDPA Subtest-4 | 18.65 | 18.71 | 18.72 | 20.00 | 18.77 | 18.74 | 18.50 | 19.80 | 21.84 | 21.96 | 22.08 | 23.50 |
| 3GPP Rel 6 | DC-HSDPA Subtest-1 | 19.11 | 19.22 | 19.13 | 20.50 | 19.17 | 19.20 | 18.99 | 20.30 | 22.29 | 22.34 | 22.45 | 24.00 |
| 3GPP Rel 6 | DC-HSDPA Subtest-2 | 19.10 | 19.17 | 19.09 | 20.50 | 19.21 | 19.17 | 18.96 | 20.30 | 22.28 | 22.33 | 22.43 | 24.00 |
| 3GPP Rel 6 | DC-HSDPA Subtest-3 | 18.42 | 18.57 | 18.56 | 20.00 | 18.66 | 18.63 | 18.31 | 19.80 | 21.79 | 21.88 | 21.99 | 23.50 |
| 3GPP Rel 6 | DC-HSDPA Subtest-4 | 18.40 | 18.60 | 18.57 | 20.00 | 18.63 | 18.62 | 18.32 | 19.80 | 21.80 | 21.89 | 21.99 | 23.50 |
| 3GPP Rel 6 | HSUPA Subtest-1 | 16.52 | 16.70 | 16.77 | 18.00 | 16.35 | 16.57 | 16.32 | 17.80 | 21.86 | 21.91 | 22.07 | 24.00 |
| 3GPP Rel 6 | HSUPA Subtest-2 | 14.61 | 14.66 | 14.64 | 16.00 | 14.45 | 14.62 | 14.41 | 15.80 | 19.85 | 19.98 | 20.17 | 22.00 |
| 3GPP Rel 6 | HSUPA Subtest-3 | 15.62 | 15.68 | 15.59 | 17.00 | 15.51 | 15.74 | 15.46 | 16.80 | 20.88 | 20.99 | 21.15 | 23.00 |
| 3GPP Rel 6 | HSUPA Subtest-4 | 14.76 | 14.73 | 14.58 | 16.00 | 15.16 | 15.16 | 14.70 | 15.80 | 19.63 | 20.03 | 20.17 | 22.00 |
| 3GPP Rel 6 | HSUPA Subtest-5 | 16.40 | 16.60 | 16.80 | 18.00 | 16.90 | 17.00 | 16.70 | 17.80 | 21.90 | 22.00 | 22.10 | 24.00 |
| 3GPP Rel 7 | HSPA+ (16QAM) Subtest-1 | 14.39 | 14.58 | 14.41 | 15.50 | 14.28 | 14.54 | 14.34 | 15.30 | 19.72 | 19.83 | 19.94 | 21.50 |



| Band 2 (1900MHz Band) | | | | | | | Band 5 (Cellular Band) | | | | | | | | | | |
|-----------------------|------------|---------|-----------|-----------------------------|------------------------|----------------------|-------------------------------------|----------|----------|------------|---------|-----------|-----------------------------|------------------------|----------------------|---------------------|----------|
| Part 24E | | | | | | | Part 22H (only on channel required) | | | | | | | | | | |
| BW (MHz) | Modulation | RB Size | RB Offset | Power Low Ch./Freq. / Freq. | Power Middle Ch./Freq. | Power High Ch./Freq. | Tune-up limit (dBm) | MPR (dB) | BW (MHz) | Modulation | RB Size | RB Offset | Power Low Ch./Freq. / Freq. | Power Middle Ch./Freq. | Power High Ch./Freq. | Tune-up limit (dBm) | MPR (dB) |
| Channel | | | | | | | Channel | | | | | | | | | | |
| Frequency (MHz) | | | | | | | Frequency (MHz) | | | | | | | | | | |
| 1870 1890 1910 | | | | | | | 2050 2075 2100 | | | | | | | | | | |
| 20 | QPSK | 1 | 0 | 19.68 | 19.69 | 19.70 | 20.6 | 0 | 10 | QPSK | 1 | 0 | 19.62 | 19.61 | 19.75 | 20.6 | 0 |
| 20 | QPSK | 1 | 49 | 19.58 | 19.54 | 19.50 | 20.6 | 0 | 10 | QPSK | 1 | 49 | 19.36 | 19.44 | 19.59 | 20.6 | 0 |
| 20 | QPSK | 1 | 99 | 19.55 | 19.76 | 19.54 | 20.6 | 0 | 10 | QPSK | 1 | 99 | 19.70 | 19.85 | 19.73 | 20.6 | 0 |
| 20 | QPSK | 50 | 0 | 19.54 | 19.74 | 19.61 | 20.6 | 0 | 20 | QPSK | 50 | 0 | 19.68 | 19.78 | 19.44 | 20.6 | 0 |
| 20 | QPSK | 50 | 24 | 19.58 | 19.52 | 19.50 | 20.6 | 0 | 20 | QPSK | 50 | 24 | 19.62 | 19.69 | 19.69 | 20.6 | 0 |
| 20 | QPSK | 50 | 50 | 19.50 | 19.43 | 19.52 | 20.6 | 0 | 20 | QPSK | 50 | 50 | 19.64 | 19.70 | 19.76 | 20.6 | 0 |
| 20 | QPSK | 100 | 0 | 19.55 | 19.73 | 19.72 | 20.6 | 0 | 20 | QPSK | 100 | 0 | 19.50 | 19.70 | 19.55 | 20.6 | 0 |
| 20 | 16QAM | 1 | 0 | 19.53 | 19.52 | 19.60 | 20.6 | 0 | 20 | 16QAM | 1 | 0 | 19.55 | 19.65 | 19.66 | 20.6 | 0 |
| 20 | 16QAM | 1 | 49 | 19.42 | 19.78 | 19.76 | 20.6 | 0 | 20 | 16QAM | 1 | 49 | 19.45 | 19.48 | 19.57 | 20.6 | 0 |
| 20 | 16QAM | 1 | 99 | 19.48 | 19.47 | 19.46 | 20.6 | 0 | 20 | 16QAM | 1 | 99 | 19.59 | 19.62 | 19.69 | 20.6 | 0 |
| 20 | 16QAM | 50 | 0 | 19.54 | 19.59 | 19.53 | 20.6 | 0 | 20 | 16QAM | 50 | 0 | 19.66 | 19.74 | 19.44 | 20.6 | 0 |
| 20 | 16QAM | 50 | 24 | 19.58 | 19.54 | 19.53 | 20.6 | 0 | 20 | 16QAM | 50 | 24 | 19.62 | 19.67 | 19.50 | 20.6 | 0 |
| 20 | 16QAM | 50 | 50 | 19.48 | 19.43 | 19.51 | 20.6 | 0 | 20 | 16QAM | 50 | 50 | 19.62 | 19.52 | 19.59 | 20.6 | 0 |
| 20 | 16QAM | 100 | 0 | 19.50 | 19.32 | 19.53 | 20.6 | 0 | 20 | 16QAM | 100 | 0 | 19.50 | 19.54 | 19.55 | 20.6 | 0 |
| 20 | 64QAM | 1 | 0 | 19.47 | 19.41 | 19.58 | 20.6 | 0 | 20 | 64QAM | 1 | 0 | 19.47 | 19.51 | 19.54 | 20.6 | 0 |
| 20 | 64QAM | 1 | 49 | 19.52 | 19.57 | 19.54 | 20.6 | 0 | 20 | 64QAM | 1 | 49 | 19.66 | 19.65 | 19.42 | 20.6 | 0 |
| 20 | 64QAM | 1 | 99 | 19.54 | 19.60 | 19.57 | 20.6 | 0 | 20 | 64QAM | 1 | 99 | 19.43 | 19.58 | 19.60 | 20.6 | 0 |
| 20 | 64QAM | 50 | 0 | 19.54 | 19.59 | 19.54 | 20.6 | 0 | 20 | 64QAM | 50 | 0 | 19.51 | 19.55 | 19.43 | 20.6 | 0 |
| 20 | 64QAM | 50 | 24 | 19.59 | 19.52 | 19.53 | 20.6 | 0 | 20 | 64QAM | 50 | 24 | 19.60 | 19.66 | 19.52 | 20.6 | 0 |
| 20 | 64QAM | 50 | 50 | 19.49 | 19.42 | 19.50 | 20.6 | 0 | 20 | 64QAM | 50 | 50 | 19.65 | 19.51 | 19.56 | 20.6 | 0 |
| 20 | 64QAM | 100 | 0 | 19.55 | 19.35 | 19.54 | 20.6 | 0 | 20 | 64QAM | 100 | 0 | 19.50 | 19.53 | 19.52 | 20.6 | 0 |
| Channel | | | | | | | Channel | | | | | | | | | | |
| Frequency (MHz) | | | | | | | Frequency (MHz) | | | | | | | | | | |
| 1875 1880 1907.5 | | | | | | | 2002.5 2017.5 2037.5 | | | | | | | | | | |
| 15 | QPSK | 1 | 0 | 19.79 | 19.47 | 19.47 | 20.6 | 0 | 15 | QPSK | 1 | 0 | 19.43 | 19.52 | 19.55 | 20.6 | 0 |
| 15 | QPSK | 1 | 37 | 19.43 | 19.49 | 19.37 | 20.6 | 0 | 15 | QPSK | 1 | 37 | 19.42 | 19.45 | 19.43 | 20.6 | 0 |
| 15 | QPSK | 1 | 74 | 19.71 | 19.74 | 19.76 | 20.6 | 0 | 15 | QPSK | 1 | 74 | 19.46 | 19.57 | 19.46 | 20.6 | 0 |
| 15 | QPSK | 36 | 0 | 19.47 | 19.51 | 19.62 | 20.6 | 0 | 15 | QPSK | 36 | 0 | 19.68 | 19.67 | 19.56 | 20.6 | 0 |
| 15 | QPSK | 36 | 20 | 19.48 | 19.41 | 19.83 | 20.6 | 0 | 15 | QPSK | 36 | 20 | 19.50 | 19.52 | 19.55 | 20.6 | 0 |
| 15 | QPSK | 36 | 39 | 19.46 | 19.49 | 19.64 | 20.6 | 0 | 15 | QPSK | 36 | 39 | 19.55 | 19.66 | 19.51 | 20.6 | 0 |
| 15 | QPSK | 75 | 0 | 19.57 | 19.47 | 19.62 | 20.6 | 0 | 15 | QPSK | 75 | 0 | 19.61 | 19.65 | 19.59 | 20.6 | 0 |
| 15 | 16QAM | 1 | 0 | 19.56 | 19.61 | 19.84 | 20.6 | 0 | 15 | 16QAM | 1 | 0 | 19.67 | 19.64 | 19.68 | 20.6 | 0 |
| 15 | 16QAM | 1 | 37 | 19.46 | 19.42 | 19.77 | 20.6 | 0 | 15 | 16QAM | 1 | 37 | 19.59 | 19.44 | 19.52 | 20.6 | 0 |
| 15 | 16QAM | 1 | 74 | 19.50 | 19.50 | 19.57 | 20.6 | 0 | 15 | 16QAM | 1 | 74 | 19.61 | 19.61 | 19.66 | 20.6 | 0 |
| 15 | 16QAM | 36 | 0 | 19.50 | 19.56 | 19.68 | 20.6 | 0 | 15 | 16QAM | 36 | 0 | 19.67 | 19.51 | 19.57 | 20.6 | 0 |
| 15 | 16QAM | 36 | 20 | 19.48 | 19.40 | 19.83 | 20.6 | 0 | 15 | 16QAM | 36 | 20 | 19.54 | 19.53 | 19.54 | 20.6 | 0 |
| 15 | 16QAM | 36 | 39 | 19.47 | 19.47 | 19.62 | 20.6 | 0 | 15 | 16QAM | 36 | 39 | 19.56 | 19.67 | 19.59 | 20.6 | 0 |
| 15 | 16QAM | 75 | 0 | 19.47 | 19.47 | 19.62 | 20.6 | 0 | 15 | 16QAM | 75 | 0 | 19.67 | 19.60 | 19.57 | 20.6 | 0 |
| 15 | 64QAM | 1 | 0 | 19.41 | 19.49 | 19.53 | 20.6 | 0 | 15 | 64QAM | 1 | 0 | 19.56 | 19.69 | 19.61 | 20.6 | 0 |
| 15 | 64QAM | 1 | 37 | 19.45 | 19.32 | 19.66 | 20.6 | 0 | 15 | 64QAM | 1 | 37 | 19.68 | 19.63 | 19.56 | 20.6 | 0 |
| 15 | 64QAM | 1 | 74 | 19.44 | 19.43 | 19.42 | 20.6 | 0 | 15 | 64QAM | 1 | 74 | 19.61 | 19.66 | 19.55 | 20.6 | 0 |
| 15 | 64QAM | 36 | 0 | 19.49 | 19.56 | 19.65 | 20.6 | 0 | 15 | 64QAM | 36 | 0 | 19.69 | 19.66 | 19.59 | 20.6 | 0 |
| 15 | 64QAM | 36 | 20 | 19.48 | 19.42 | 19.66 | 20.6 | 0 | 15 | 64QAM | 36 | 20 | 19.54 | 19.55 | 19.58 | 20.6 | 0 |
| 15 | 64QAM | 36 | 39 | 19.46 | 19.48 | 19.67 | 20.6 | 0 | 15 | 64QAM | 36 | 39 | 19.56 | 19.51 | 19.62 | 20.6 | 0 |
| 15 | 64QAM | 75 | 0 | 19.45 | 19.45 | 19.62 | 20.6 | 0 | 15 | 64QAM | 75 | 0 | 19.67 | 19.64 | 19.57 | 20.6 | 0 |
| Channel | | | | | | | Channel | | | | | | | | | | |
| Frequency (MHz) | | | | | | | Frequency (MHz) | | | | | | | | | | |
| 1882.5 1890 1915 | | | | | | | 2009 2017.5 2039 | | | | | | | | | | |
| 10 | QPSK | 1 | 0 | 19.52 | 19.58 | 19.50 | 20.6 | 0 | 10 | QPSK | 1 | 0 | 19.76 | 19.45 | 19.41 | 20.6 | 0 |
| 10 | QPSK | 1 | 25 | 19.45 | 19.32 | 19.58 | 20.6 | 0 | 10 | QPSK | 1 | 25 | 19.41 | 19.53 | 19.53 | 20.6 | 0 |
| 10 | QPSK | 1 | 49 | 19.45 | 19.59 | 19.66 | 20.6 | 0 | 10 | QPSK | 1 | 49 | 19.76 | 19.52 | 19.53 | 20.6 | 0 |
| 10 | QPSK | 25 | 0 | 19.53 | 19.54 | 19.67 | 20.6 | 0 | 10 | QPSK | 25 | 0 | 19.49 | 19.61 | 19.70 | 20.6 | 0 |
| 10 | QPSK | 25 | 12 | 19.59 | 19.43 | 19.61 | 20.6 | 0 | 10 | QPSK | 25 | 12 | 19.57 | 19.68 | 19.76 | 20.6 | 0 |
| 10 | QPSK | 25 | 25 | 19.57 | 19.43 | 19.74 | 20.6 | 0 | 10 | QPSK | 25 | 25 | 19.62 | 19.63 | 19.75 | 20.6 | 0 |
| 10 | QPSK | 50 | 0 | 19.53 | 19.51 | 19.41 | 20.6 | 0 | 10 | QPSK | 50 | 0 | 19.54 | 19.63 | 19.77 | 20.6 | 0 |
| 10 | 16QAM | 1 | 0 | 19.47 | 19.48 | 19.51 | 20.6 | 0 | 10 | 16QAM | 1 | 0 | 19.56 | 19.66 | 19.60 | 20.6 | 0 |
| 10 | 16QAM | 1 | 25 | 19.48 | 19.40 | 19.58 | 20.6 | 0 | 10 | 16QAM | 1 | 25 | 19.47 | 19.52 | 19.59 | 20.6 | 0 |
| 10 | 16QAM | 1 | 49 | 19.57 | 19.48 | 19.56 | 20.6 | 0 | 10 | 16QAM | 1 | 49 | 19.60 | 19.61 | 19.61 | 20.6 | 0 |
| 10 | 16QAM | 25 | 0 | 19.52 | 19.53 | 19.52 | 20.6 | 0 | 10 | 16QAM | 25 | 0 | 19.49 | 19.65 | 19.51 | 20.6 | 0 |
| 10 | 16QAM | 25 | 12 | 19.51 | 19.42 | 19.53 | 20.6 | 0 | 10 | 16QAM | 25 | 12 | 19.56 | 19.68 | 19.55 | 20.6 | 0 |
| 10 | 16QAM | 25 | 25 | 19.56 | 19.38 | 19.62 | 20.6 | 0 | 10 | 16QAM | 25 | 25 | 19.61 | 19.60 | 19.52 | 20.6 | 0 |
| 10 | 16QAM | 50 | 0 | 19.48 | 19.53 | 19.40 | 20.6 | 0 | 10 | 16QAM | 50 | 0 | 19.56 | 19.65 | 19.54 | 20.6 | 0 |
| 10 | 64QAM | 1 | 0 | 19.44 | 19.48 | 19.46 | 20.6 | 0 | 10 | 64QAM | 1 | 0 | 19.55 | 19.57 | 19.59 | 20.6 | 0 |
| 10 | 64QAM | 1 | 25 | 19.56 | 19.55 | 19.41 | 20.6 | 0 | 10 | 64QAM | 1 | 25 | 19.50 | 19.50 | 19.59 | 20.6 | 0 |
| 10 | 64QAM | 1 | 49 | 19.44 | 19.59 | 19.49 | 20.6 | 0 | 10 | 64QAM | 1 | 49 | 19.56 | 19.53 | 19.62 | 20.6 | 0 |
| 10 | 64QAM | 25 | 0 | 19.51 | 19.51 | 19.53 | 20.6 | 0 | 10 | 64QAM | 25 | 0 | 19.49 | 19.63 | 19.68 | 20.6 | 0 |
| 10 | 64QAM | 25 | 12 | 19.51 | 19.41 | 19.52 | 20.6 | 0 | 10 | 64QAM | 25 | 12 | 19.55 | 19.65 | 19.55 | 20.6 | 0 |
| 10 | 64QAM | 25 | 25 | 19.59 | 19.43 | 19.54 | 20.6 | 0 | 10 | 64QAM | 25 | 25 | 19.61 | 19.63 | 19.53 | 20.6 | 0 |
| 10 | 64QAM | 50 | 0 | 19.49 | 19.52 | 19.40 | 20.6 | 0 | 10 | 64QAM | 50 | 0 | 19.56 | 19.54 | 19.57 | 20.6 | 0 |
| Channel | | | | | | | Channel | | | | | | | | | | |
| Frequency (MHz) | | | | | | | Frequency (MHz) | | | | | | | | | | |
| 1892.5 1890 1915 | | | | | | | 2009 2017.5 2039 | | | | | | | | | | |
| 5 | QPSK | 1 | 0 | 19.51 | 19.59 | 19.58 | 20.6 | 0 | 5 | QPSK | 1 | 0 | 19.60 | 19.62 | 19.69 | 20.6 | 0 |
| 5 | QPSK | 1 | 12 | 19.32 | 19.33 | 19.49 | 20.6 | 0 | 5 | QPSK | 1 | 12 | 19.33 | 19.49 | 19.50 | 20.6 | 0 |
| 5 | QPSK | 1 | 24 | 19.47 | 19.39 | 19.58 | 20.6 | 0 | 5 | QPSK | 1 | 24 | 19.41 | 19.53 | 19.61 | 20.6 | 0 |
| 5 | QPSK | 12 | 0 | 19.56 | 19.56 | 19.64 | 20.6 | 0 | 5 | QPSK | 12 | 0 | 19.45 | 19.64 | 19.73 | 20.6 | 0 |
| 5 | QPSK | 12 | 7 | 19.48 | 19.47 | 19.67 | 20.6 | 0 | 5 | QPSK | 12 | 7 | 19.46 | 19.59 | 19.64 | 20.6 | 0 |
| 5 | QPSK | 12 | 13 | 19.52 | 19.46 | 19.69 | 20.6 | 0 | 5 | QPSK | 12 | 13 | 19.42 | 19.63 | 19.64 | 20.6 | 0 |
| 5 | QPSK | 25 | 0 | 19.56 | 19.51 | 19.84 | 20.6 | 0 | 5 | QPSK | 25 | 0 | 19.50 | 19.57 | 19.69 | 20.6 | 0 |
| 5 | 16QAM | 1 | 0 | 19.49 | 19.54 | 19.45 | 20.6 | 0 | 5 | 16QAM | 1 | 0 | 19.50 | 19.51 | 19.66 | 20.6 | 0 |
| 5 | 16QAM | 1 | 12 | 19.53 | 19.59 | 19.43 | 20.6 | 0 | 5 | 16QAM | 1 | 12 | 19.56 | 19.51 | 19.52 | 20.6 | 0 |
| 5 | 16QAM | 1 | 24 | 19.58 | 19.69 | 19.48 | 20.6 | 0 | 5 | 16QAM | 1 | 24 | 19.55 | 19.47 | 19.55 | 20.6 | 0 |
| 5 | 16QAM | 12 | 0 | 19.57 | 19.59 | 19.66 | 20.6 | 0 | 5 | 16QAM | 12 | 0 | 19.52 | 19.65 | 19.55 | 20.6 | 0 |
| 5 | 1 | | | | | | | | | | | | | | | | |



| Band 7 (2600MHz Band) Part 27 | | | | | | | | | |
|----------------------------------|------------|---------|-----------|---------------------|------------------------|----------------------|---------------------|----------|--|
| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch./Freq. | Power Middle Ch./Freq. | Power High Ch./Freq. | Tune-up limit (dBm) | MPR (dB) | |
| Channel | | | | | | | | | |
| Frequency (MHz) | | | | 2050 | 2100 | 2150 | | | |
| 20 | QPSK | 1 | 0 | 19.69 | 19.77 | 19.71 | | | |
| 20 | QPSK | 1 | 49 | 19.55 | 19.66 | 19.69 | 20.5 | 0 | |
| 20 | QPSK | 1 | 99 | 19.72 | 19.74 | 19.60 | | | |
| 20 | QPSK | 50 | 0 | 19.59 | 19.64 | 19.58 | | | |
| 20 | QPSK | 50 | 24 | 19.44 | 19.42 | 19.41 | 20.5 | 0 | |
| 20 | QPSK | 50 | 50 | 19.43 | 19.43 | 19.46 | | | |
| 20 | QPSK | 100 | 0 | 19.40 | 19.43 | 19.45 | | | |
| 20 | 16QAM | 1 | 0 | 19.66 | 19.69 | 19.42 | | | |
| 20 | 16QAM | 1 | 49 | 19.57 | 19.53 | 19.67 | 20.5 | 0 | |
| 20 | 16QAM | 1 | 99 | 19.66 | 19.44 | 19.58 | | | |
| 20 | 16QAM | 50 | 0 | 19.59 | 19.41 | 19.40 | | | |
| 20 | 16QAM | 50 | 24 | 19.41 | 19.44 | 19.45 | 20.5 | 0 | |
| 20 | 16QAM | 50 | 50 | 19.42 | 19.44 | 19.46 | | | |
| 20 | 16QAM | 100 | 0 | 19.40 | 19.43 | 19.45 | | | |
| 20 | 8QAM | 1 | 0 | 19.44 | 19.67 | 19.57 | | | |
| 20 | 8QAM | 1 | 49 | 19.46 | 19.41 | 19.57 | 20.5 | 0 | |
| 20 | 8QAM | 1 | 99 | 19.58 | 19.47 | 19.47 | | | |
| 20 | 8QAM | 50 | 0 | 19.58 | 19.42 | 19.69 | | | |
| 20 | 8QAM | 50 | 24 | 19.40 | 19.43 | 19.45 | 20.5 | 0 | |
| 20 | 8QAM | 50 | 50 | 19.41 | 19.44 | 19.46 | | | |
| 20 | 8QAM | 100 | 0 | 19.41 | 19.44 | 19.46 | | | |
| Channel | | | | 2050 | 2100 | 2150 | | | |
| Frequency (MHz) | | | | 2075.5 | 2075 | 2075.5 | | | |
| 15 | QPSK | 1 | 0 | 19.34 | 19.42 | 19.40 | | | |
| 15 | QPSK | 1 | 37 | 19.50 | 19.61 | 19.41 | 20.5 | 0 | |
| 15 | QPSK | 1 | 74 | 19.41 | 19.43 | 19.54 | | | |
| 15 | QPSK | 36 | 0 | 19.81 | 19.44 | 19.43 | | | |
| 15 | QPSK | 36 | 20 | 19.66 | 19.47 | 19.45 | 20.5 | 0 | |
| 15 | QPSK | 36 | 39 | 19.64 | 19.45 | 19.47 | | | |
| 15 | 16QAM | 75 | 0 | 19.53 | 19.46 | 19.40 | | | |
| 15 | 16QAM | 1 | 0 | 19.45 | 19.69 | 19.63 | | | |
| 15 | 16QAM | 1 | 37 | 19.48 | 19.59 | 19.65 | 20.5 | 0 | |
| 15 | 16QAM | 1 | 74 | 19.61 | 19.64 | 19.44 | | | |
| 15 | 16QAM | 36 | 0 | 19.82 | 19.46 | 19.43 | | | |
| 15 | 16QAM | 36 | 20 | 19.67 | 19.45 | 19.69 | 20.5 | 0 | |
| 15 | 16QAM | 36 | 39 | 19.66 | 19.46 | 19.42 | | | |
| 15 | 16QAM | 75 | 0 | 19.53 | 19.47 | 19.53 | | | |
| 15 | 8QAM | 1 | 0 | 19.44 | 19.57 | 19.51 | | | |
| 15 | 8QAM | 1 | 37 | 19.69 | 19.44 | 19.51 | 20.5 | 0 | |
| 15 | 8QAM | 1 | 74 | 19.47 | 19.49 | 19.68 | | | |
| 15 | 8QAM | 36 | 0 | 19.84 | 19.45 | 19.45 | | | |
| 15 | 8QAM | 36 | 20 | 19.68 | 19.47 | 19.46 | 20.5 | 0 | |
| 15 | 8QAM | 36 | 39 | 19.66 | 19.47 | 19.46 | | | |
| 15 | 8QAM | 75 | 0 | 19.56 | 19.46 | 19.50 | | | |
| Channel | | | | 2075.5 | 2100 | 2140 | | | |
| Frequency (MHz) | | | | 2505 | 2535 | 2565 | | | |
| 10 | QPSK | 1 | 0 | 19.41 | 19.52 | 19.52 | | | |
| 10 | QPSK | 1 | 25 | 19.42 | 19.64 | 19.60 | 20.5 | 0 | |
| 10 | QPSK | 1 | 49 | 19.43 | 19.43 | 19.67 | | | |
| 10 | QPSK | 25 | 0 | 19.58 | 19.45 | 19.64 | | | |
| 10 | QPSK | 25 | 12 | 19.42 | 19.44 | 19.60 | 20.5 | 0 | |
| 10 | QPSK | 25 | 25 | 19.58 | 19.49 | 19.66 | | | |
| 10 | QPSK | 50 | 0 | 19.62 | 19.67 | 19.43 | | | |
| 10 | 16QAM | 1 | 0 | 19.42 | 19.49 | 19.44 | | | |
| 10 | 16QAM | 1 | 25 | 19.49 | 19.56 | 19.52 | 20.5 | 0 | |
| 10 | 16QAM | 1 | 49 | 19.67 | 19.44 | 19.55 | | | |
| 10 | 16QAM | 25 | 0 | 19.61 | 19.44 | 19.64 | | | |
| 10 | 16QAM | 25 | 12 | 19.43 | 19.64 | 19.60 | 20.5 | 0 | |
| 10 | 16QAM | 25 | 25 | 19.58 | 19.49 | 19.65 | | | |
| 10 | 16QAM | 50 | 0 | 19.62 | 19.65 | 19.42 | | | |
| 10 | 8QAM | 1 | 0 | 19.57 | 19.68 | 19.62 | | | |
| 10 | 8QAM | 1 | 25 | 19.66 | 19.47 | 19.40 | 20.5 | 0 | |
| 10 | 8QAM | 1 | 49 | 19.53 | 19.64 | 19.44 | | | |
| 10 | 8QAM | 25 | 0 | 19.59 | 19.42 | 19.63 | | | |
| 10 | 8QAM | 25 | 12 | 19.43 | 19.62 | 19.59 | 20.5 | 0 | |
| 10 | 8QAM | 25 | 25 | 19.62 | 19.49 | 19.40 | | | |
| 10 | 8QAM | 50 | 0 | 19.61 | 19.69 | 19.41 | | | |
| Channel | | | | 2077.5 | 2110 | 2142.5 | | | |
| Frequency (MHz) | | | | 2502.5 | 2535 | 2567.5 | | | |
| 5 | QPSK | 1 | 0 | 19.42 | 19.43 | 19.46 | | | |
| 5 | QPSK | 1 | 12 | 19.56 | 19.57 | 19.53 | 20.5 | 0 | |
| 5 | QPSK | 1 | 24 | 19.50 | 19.64 | 19.57 | | | |
| 5 | QPSK | 12 | 0 | 19.63 | 19.41 | 19.66 | | | |
| 5 | QPSK | 12 | 7 | 19.66 | 19.65 | 19.65 | 20.5 | 0 | |
| 5 | QPSK | 12 | 13 | 19.52 | 19.40 | 19.62 | | | |
| 5 | QPSK | 25 | 0 | 19.54 | 19.66 | 19.66 | | | |
| 5 | 16QAM | 1 | 0 | 19.46 | 19.63 | 19.59 | | | |
| 5 | 16QAM | 1 | 12 | 19.49 | 19.46 | 19.49 | 20.5 | 0 | |
| 5 | 16QAM | 1 | 24 | 19.48 | 19.52 | 19.50 | | | |
| 5 | 16QAM | 12 | 0 | 19.65 | 19.41 | 19.41 | | | |
| 5 | 16QAM | 12 | 7 | 19.57 | 19.65 | 19.64 | 20.5 | 0 | |
| 5 | 16QAM | 12 | 13 | 19.49 | 19.43 | 19.63 | | | |
| 5 | 16QAM | 25 | 0 | 19.56 | 19.66 | 19.40 | | | |
| 5 | 8QAM | 1 | 0 | 19.42 | 19.52 | 19.48 | | | |
| 5 | 8QAM | 1 | 12 | 19.69 | 19.44 | 19.47 | 20.5 | 0 | |
| 5 | 8QAM | 1 | 24 | 19.66 | 19.40 | 19.40 | | | |
| 5 | 8QAM | 12 | 0 | 19.66 | 19.40 | 19.41 | | | |
| 5 | 8QAM | 12 | 7 | 19.65 | 19.69 | 19.61 | 20.5 | 0 | |
| 5 | 8QAM | 12 | 13 | 19.49 | 19.44 | 19.69 | | | |
| 5 | 8QAM | 25 | 0 | 19.66 | 19.63 | 19.68 | | | |

| Band 12 (700MHz Low Band) Part 27F(only on channel required) | | | | | | | | | |
|---|------------|---------|-----------|---------------------|------------------------|----------------------|---------------------|----------|--|
| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch./Freq. | Power Middle Ch./Freq. | Power High Ch./Freq. | Tune-up limit (dBm) | MPR (dB) | |
| Channel | | | | | | | | | |
| Frequency (MHz) | | | | 2306 | 2305 | 2310 | | | |
| 10 | QPSK | 1 | 0 | 23.31 | 23.31 | 23.32 | | | |
| 10 | QPSK | 1 | 25 | 23.34 | 23.57 | 23.43 | 24.5 | 0 | |
| 10 | QPSK | 1 | 49 | 23.38 | 23.68 | 23.56 | | | |
| 10 | QPSK | 25 | 0 | 22.18 | 22.37 | 22.27 | | | |
| 10 | QPSK | 25 | 12 | 22.26 | 22.26 | 22.30 | 23.5 | 1 | |
| 10 | QPSK | 25 | 25 | 22.28 | 22.24 | 22.25 | | | |
| 10 | QPSK | 50 | 0 | 22.29 | 22.35 | 22.32 | | | |
| 10 | 16QAM | 1 | 0 | 22.79 | 22.65 | 22.31 | | | |
| 10 | 16QAM | 1 | 25 | 22.29 | 22.64 | 22.60 | 23.5 | 1 | |
| 10 | 16QAM | 1 | 49 | 22.60 | 22.85 | 22.60 | | | |
| 10 | 16QAM | 25 | 0 | 21.29 | 21.30 | 21.31 | | | |
| 10 | 16QAM | 25 | 12 | 21.22 | 21.27 | 21.39 | 22.5 | 2 | |
| 10 | 16QAM | 25 | 25 | 21.24 | 21.28 | 21.34 | | | |
| 10 | 16QAM | 50 | 0 | 21.32 | 21.27 | 21.44 | | | |
| 10 | 8QAM | 1 | 0 | 21.61 | 21.46 | 21.58 | | | |
| 10 | 8QAM | 1 | 25 | 22.00 | 21.50 | 21.39 | 22.5 | 2 | |
| 10 | 8QAM | 1 | 49 | 21.54 | 21.78 | 21.82 | | | |
| 10 | 8QAM | 25 | 0 | 20.29 | 20.25 | 20.25 | | | |
| 10 | 8QAM | 25 | 12 | 20.31 | 20.29 | 20.32 | 21.5 | 3 | |
| 10 | 8QAM | 25 | 25 | 20.29 | 20.26 | 20.29 | | | |
| 10 | 8QAM | 50 | 0 | 20.35 | 20.35 | 20.35 | | | |
| Channel | | | | 2302.5 | 2305 | 2316.5 | | | |
| Frequency (MHz) | | | | 701.5 | 707.5 | 713.5 | | | |
| 5 | QPSK | 1 | 0 | 23.07 | 23.24 | 23.11 | | | |
| 5 | QPSK | 1 | 12 | 23.15 | 23.15 | 23.13 | 24.5 | 0 | |
| 5 | QPSK | 1 | 24 | 23.19 | 23.23 | 23.24 | | | |
| 5 | QPSK | 12 | 0 | 22.20 | 22.22 | 22.21 | | | |
| 5 | QPSK | 12 | 7 | 22.15 | 22.16 | 22.20 | 23.5 | 1 | |
| 5 | QPSK | 12 | 13 | 22.17 | 22.18 | 22.32 | | | |
| 5 | 16QAM | 25 | 0 | 22.17 | 22.16 | 22.24 | | | |
| 5 | 16QAM | 1 | 0 | 22.36 | 22.77 | 22.84 | | | |
| 5 | 16QAM | 1 | 12 | 22.22 | 22.70 | 22.31 | 23.5 | 1 | |
| 5 | 16QAM | 1 | 24 | 22.38 | 22.41 | 22.40 | | | |
| 5 | 16QAM | 12 | 0 | 21.28 | 21.19 | 21.39 | | | |
| 5 | 16QAM | 12 | 7 | 21.24 | 21.12 | 21.25 | 22.5 | 2 | |
| 5 | 16QAM | 12 | 13 | 21.23 | 21.22 | 21.26 | | | |
| 5 | 16QAM | 25 | 0 | 21.31 | 21.16 | 21.24 | | | |
| 5 | 8QAM | 1 | 0 | 21.27 | 21.48 | 21.49 | | | |
| 5 | 8QAM | 1 | 12 | 21.13 | 21.49 | 21.59 | 22.5 | 2 | |
| 5 | 8QAM | 1 | 24 | 21.56 | 21.51 | 21.02 | | | |
| 5 | 8QAM | 12 | 0 | 20.25 | 20.18 | 20.34 | | | |
| 5 | 8QAM | 12 | 7 | 20.29 | 20.35 | 20.25 | 21.5 | 3 | |
| 5 | 8QAM | 12 | 13 | 20.25 | 20.13 | 20.27 | | | |
| 5 | 8QAM | 25 | 0 | 20.21 | 20.27 | 20.34 | | | |
| Channel | | | | 2302.5 | 2305 | 2316.5 | | | |

| Band 26 for FCC (only on channel required) | | | | | | | | | |
|---|-----------------|---------|-----------|--------------------|-----------------------|---------------------|---------------------------|-------------|--|
| BW (MHz) | Modulation | RB Size | RB Offset | Power | | | Tune-up limit (dBm) | MPR (dB) | |
| | | | | Low Ch. / Freq. | Middle Ch. / Freq. | High Ch. / Freq. | | | |
| | Channel | | | 26765 | 26865 | 26965 | | | |
| | Frequency (MHz) | | | 821.6 | 831.6 | 841.6 | | | |
| 15 | QPSK | 1 | 0 | 23.76 | 23.81 | 23.82 | 24.8 | 0 | |
| 15 | QPSK | 1 | 37 | 23.47 | 23.40 | 23.48 | | | |
| 15 | QPSK | 1 | 74 | 23.70 | 23.49 | 23.32 | | | |
| 15 | QPSK | 36 | 0 | 22.62 | 22.68 | 22.49 | 23.8 | 1 | |
| 15 | QPSK | 36 | 20 | 22.52 | 22.90 | 22.53 | | | |
| 15 | QPSK | 36 | 39 | 22.53 | 22.70 | 22.57 | | | |
| 15 | QPSK | 75 | 0 | 22.51 | 22.82 | 22.79 | | | |
| 15 | 16QAM | 1 | 0 | 22.76 | 22.72 | 22.63 | 23.8 | 1 | |
| 15 | 16QAM | 1 | 37 | 22.89 | 22.76 | 22.70 | | | |
| 15 | 16QAM | 1 | 74 | 22.84 | 22.77 | 22.54 | | | |
| 15 | 16QAM | 36 | 0 | 21.56 | 21.69 | 21.53 | 22.8 | 2 | |
| 15 | 16QAM | 36 | 20 | 21.45 | 21.37 | 21.56 | | | |
| 15 | 16QAM | 36 | 39 | 21.48 | 21.70 | 21.67 | | | |
| 15 | 16QAM | 75 | 0 | 21.48 | 21.77 | 21.58 | | | |
| 15 | 64QAM | 1 | 0 | 21.52 | 21.54 | 21.98 | 22.8 | 2 | |
| 15 | 64QAM | 1 | 37 | 21.96 | 22.02 | 21.85 | | | |
| 15 | 64QAM | 1 | 74 | 21.82 | 21.83 | 21.79 | | | |
| 15 | 64QAM | 36 | 0 | 20.54 | 20.77 | 20.63 | 21.8 | 3 | |
| 15 | 64QAM | 36 | 20 | 20.44 | 20.70 | 20.62 | | | |
| 15 | 64QAM | 36 | 39 | 20.54 | 20.80 | 20.66 | | | |
| 15 | 64QAM | 75 | 0 | 20.45 | 20.76 | 20.58 | | | |
| | Channel | | | 26740 | 26840 | 26940 | | | |
| | Frequency (MHz) | | | 819 | 831.5 | 844 | | | |
| 10 | QPSK | 1 | 0 | 23.61 | 23.69 | 23.40 | 24.8 | 0 | |
| 10 | QPSK | 1 | 25 | 23.45 | 23.46 | 23.61 | | | |
| 10 | QPSK | 1 | 49 | 23.49 | 23.52 | 23.51 | | | |
| 10 | QPSK | 25 | 0 | 22.60 | 23.32 | 23.22 | 23.8 | 1 | |
| 10 | QPSK | 25 | 12 | 22.48 | 22.89 | 23.27 | | | |
| 10 | QPSK | 25 | 25 | 22.55 | 22.78 | 23.26 | | | |
| 10 | QPSK | 50 | 0 | 22.84 | 23.95 | 23.21 | 23.8 | 1 | |
| 10 | 16QAM | 1 | 0 | 22.78 | 23.45 | 23.33 | | | |
| 10 | 16QAM | 1 | 25 | 22.66 | 23.19 | 23.34 | 23.8 | 1 | |
| 10 | 16QAM | 1 | 49 | 22.91 | 23.47 | 23.54 | | | |
| 10 | 16QAM | 25 | 0 | 21.63 | 21.80 | 22.40 | 22.8 | 2 | |
| 10 | 16QAM | 25 | 12 | 21.56 | 21.82 | 22.13 | | | |
| 10 | 16QAM | 25 | 25 | 21.66 | 21.84 | 22.24 | | | |
| 10 | 16QAM | 50 | 0 | 21.63 | 21.95 | 22.32 | 22.8 | 2 | |
| 10 | 64QAM | 1 | 0 | 21.55 | 22.24 | 22.27 | | | |
| 10 | 64QAM | 1 | 25 | 21.64 | 22.05 | 22.19 | 22.8 | 2 | |
| 10 | 64QAM | 1 | 49 | 21.90 | 21.95 | 22.50 | | | |
| 10 | 64QAM | 25 | 0 | 20.61 | 20.73 | 21.10 | 21.8 | 3 | |
| 10 | 64QAM | 25 | 12 | 20.54 | 20.84 | 21.18 | | | |
| 10 | 64QAM | 25 | 25 | 20.64 | 20.86 | 21.28 | | | |
| 10 | 64QAM | 50 | 0 | 20.55 | 20.80 | 21.24 | | | |
| | Channel | | | 26715 | 26815 | 27015 | | | |
| | Frequency (MHz) | | | 816.5 | 831.5 | 846.5 | | | |
| 5 | QPSK | 1 | 0 | 23.47 | 23.56 | 23.60 | 24.8 | 0 | |
| 5 | QPSK | 1 | 12 | 23.49 | 23.66 | 23.54 | | | |
| 5 | QPSK | 1 | 24 | 23.54 | 23.72 | 23.55 | | | |
| 5 | QPSK | 12 | 0 | 22.55 | 22.78 | 23.22 | 23.8 | 1 | |
| 5 | QPSK | 12 | 7 | 22.56 | 22.77 | 23.27 | | | |
| 5 | QPSK | 12 | 13 | 22.57 | 22.80 | 23.23 | | | |
| 5 | QPSK | 25 | 0 | 22.56 | 22.80 | 23.16 | 23.8 | 1 | |
| 5 | 16QAM | 1 | 0 | 23.11 | 23.08 | 23.39 | | | |
| 5 | 16QAM | 1 | 12 | 23.02 | 23.11 | 23.42 | 23.8 | 1 | |
| 5 | 16QAM | 1 | 24 | 23.23 | 22.90 | 23.33 | | | |
| 5 | 16QAM | 12 | 0 | 21.68 | 21.85 | 22.30 | 22.8 | 2 | |
| 5 | 16QAM | 12 | 7 | 21.75 | 21.79 | 22.18 | | | |
| 5 | 16QAM | 12 | 13 | 21.76 | 21.86 | 22.20 | | | |
| 5 | 16QAM | 25 | 0 | 21.61 | 21.76 | 22.25 | 22.8 | 2 | |
| 5 | 64QAM | 1 | 0 | 21.93 | 22.29 | 22.03 | | | |
| 5 | 64QAM | 1 | 12 | 21.83 | 22.11 | 22.06 | 22.8 | 2 | |
| 5 | 64QAM | 1 | 24 | 21.40 | 22.02 | 22.09 | | | |
| 5 | 64QAM | 12 | 0 | 20.65 | 20.78 | 21.30 | 21.8 | 3 | |
| 5 | 64QAM | 12 | 7 | 20.73 | 20.79 | 21.19 | | | |
| 5 | 64QAM | 12 | 13 | 20.75 | 20.88 | 21.27 | | | |
| 5 | 64QAM | 25 | 0 | 20.66 | 20.69 | 21.23 | | | |
| | Channel | | | 26705 | 26805 | 27005 | | | |
| | Frequency (MHz) | | | 815.5 | 831.5 | 847.5 | | | |
| 3 | QPSK | 1 | 0 | 23.44 | 23.55 | 23.68 | 24.8 | 0 | |
| 3 | QPSK | 1 | 8 | 23.50 | 23.55 | 23.73 | | | |
| 3 | QPSK | 1 | 14 | 23.51 | 23.47 | 23.58 | | | |
| 3 | QPSK | 8 | 0 | 22.70 | 22.76 | 23.16 | 23.8 | 1 | |
| 3 | QPSK | 8 | 4 | 22.60 | 22.69 | 23.21 | | | |
| 3 | QPSK | 8 | 7 | 22.40 | 22.76 | 23.30 | | | |
| 3 | QPSK | 15 | 0 | 22.56 | 22.77 | 23.18 | 23.8 | 1 | |
| 3 | 16QAM | 1 | 0 | 23.20 | 23.47 | 23.26 | | | |
| 3 | 16QAM | 1 | 8 | 22.87 | 23.09 | 23.31 | 23.8 | 1 | |
| 3 | 16QAM | 1 | 14 | 22.99 | 23.13 | 23.31 | | | |
| 3 | 16QAM | 8 | 0 | 21.76 | 21.78 | 22.27 | 22.8 | 2 | |
| 3 | 16QAM | 8 | 4 | 21.71 | 21.82 | 22.31 | | | |
| 3 | 16QAM | 8 | 7 | 21.61 | 21.79 | 22.27 | | | |
| 3 | 16QAM | 15 | 0 | 21.72 | 21.68 | 22.37 | 22.8 | 2 | |
| 3 | 64QAM | 1 | 0 | 21.72 | 22.08 | 22.35 | | | |
| 3 | 64QAM | 1 | 8 | 21.97 | 22.09 | 22.23 | 22.8 | 2 | |
| 3 | 64QAM | 1 | 14 | 21.60 | 21.87 | 22.37 | | | |
| 3 | 64QAM | 8 | 0 | 20.70 | 20.73 | 21.26 | 21.8 | 3 | |
| 3 | 64QAM | 8 | 4 | 20.70 | 20.76 | 21.30 | | | |
| 3 | 64QAM | 8 | 7 | 20.77 | 20.73 | 21.16 | | | |
| 3 | 64QAM | 15 | 0 | 20.61 | 20.85 | 21.24 | | | |
| | Channel | | | 26697 | 26895 | 27033 | | | |
| | Frequency (MHz) | | | 814.7 | 831.5 | 848.3 | | | |
| 1.4 | QPSK | 1 | 0 | 23.35 | 23.38 | 23.64 | 24.8 | 0 | |
| 1.4 | QPSK | 1 | 3 | 23.66 | 23.69 | 23.68 | | | |
| 1.4 | QPSK | 1 | 5 | 23.62 | 23.82 | 23.52 | | | |
| 1.4 | QPSK | 3 | 0 | 23.49 | 23.73 | 23.51 | 23.8 | 1 | |
| 1.4 | QPSK | 3 | 1 | 23.56 | 23.57 | 23.53 | | | |
| 1.4 | QPSK | 3 | 3 | 23.69 | 23.62 | 23.50 | | | |
| 1.4 | QPSK | 6 | 0 | 22.47 | 22.59 | 23.10 | 23.8 | 1 | |
| 1.4 | 16QAM | 1 | 0 | 23.02 | 23.09 | 23.30 | | | |
| 1.4 | 16QAM | 1 | 3 | 22.80 | 23.03 | 23.25 | 23.8 | 1 | |
| 1.4 | 16QAM | 1 | 5 | 22.73 | 23.15 | 23.30 | | | |
| 1.4 | 16QAM | 3 | 0 | 22.53 | 22.68 | 23.14 | | | |
| 1.4 | 16QAM | 3 | 1 | 22.70 | 22.54 | 23.13 | 22.8 | 2 | |
| 1.4 | 16QAM | 3 | 3 | 22.45 | 22.70 | 23.10 | | | |
| 1.4 | 16QAM | 6 | 0 | 21.73 | 21.78 | 22.10 | 22.8 | 2 | |
| 1.4 | 64QAM | 1 | 0 | 21.74 | 21.83 | 22.22 | | | |
| 1.4 | 64QAM | 1 | 3 | 21.46 | 21.58 | 22.12 | 22.8 | 2 | |
| 1.4 | 64QAM | 1 | 5 | 21.58 | 21.99 | 22.33 | | | |
| 1.4 | 64QAM | 3 | 0 | 21.44 | 21.47 | 22.10 | | | |
| 1.4 | 64QAM | 3 | 1 | 21.76 | 21.77 | 22.19 | | | |
| 1.4 | 64QAM | 3 | 3 | 21.82 | 21.76 | 22.15 | 21.8 | 3 | |
| 1.4 | 64QAM | 6 | 0 | 20.60 | 20.61 | 21.08 | | | |



Bottom Antenna UL CA

| CA_7C | | | | | | | | | | | |
|---------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|-----------------------|-----------------|----------------------|---------------------|
| Combination 20MHz+20MHz (100RB+100RB) | | | | | | | | | | | |
| PCC Channel | SCC Channel | Modulation | PCC | | SCC | | Total RB Size | Target MPR Level (dB) | Power Reduction | Measured Power (dBm) | Tune up Power (dBm) |
| | | | RB Size | RB offset | RB Size | RB offset | | | | | |
| 20850 | 21048 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver on | 23.81 | 24.5 |
| 21100 | 20902 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver on | 23.88 | 24.5 |
| 21350 | 21152 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver on | 23.51 | 24.5 |
| 20850 | 21048 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver off | 19.51 | 20.5 |
| 21100 | 20902 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver off | 19.62 | 20.5 |
| 21350 | 21152 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver off | 19.54 | 20.5 |

| CA_38C | | | | | | | | | | | |
|---------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|-----------------------|-----------------|----------------------|---------------------|
| Combination 20MHz+20MHz (100RB+100RB) | | | | | | | | | | | |
| PCC Channel | SCC Channel | Modulation | PCC | | SCC | | Total RB Size | Target MPR Level (dB) | Power Reduction | Measured Power (dBm) | Tune up Power (dBm) |
| | | | RB Size | RB offset | RB Size | RB offset | | | | | |
| 37850 | 38048 | QPSK | 1 | 99 | 0 | 0 | 1 | 0 | Receiver on | 23.53 | 24.5 |
| 37901 | 38099 | QPSK | 1 | 99 | 0 | 0 | 1 | 0 | Receiver on | 23.37 | 24.5 |
| 38150 | 37952 | QPSK | 1 | 99 | 0 | 0 | 1 | 0 | Receiver on | 23.43 | 24.5 |
| 37850 | 38048 | QPSK | 1 | 99 | 0 | 0 | 1 | 0 | Receiver off | 19.27 | 20.5 |
| 37901 | 38099 | QPSK | 1 | 99 | 0 | 0 | 1 | 0 | Receiver off | 19.05 | 20.5 |
| 38150 | 37952 | QPSK | 1 | 99 | 0 | 0 | 1 | 0 | Receiver off | 19.02 | 20.5 |



| CA_41C | | | | | | | | | | | |
|---------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|-----------------------|-----------------|----------------------|---------------------|
| Combination 20MHz+20MHz (100RB+100RB) | | | | | | | | | | | |
| PCC Channel | SCC Channel | Modulation | PCC | | SCC | | Total RB Size | Target MPR Level (dB) | Power Reduction | Measured Power (dBm) | Tune up Power (dBm) |
| | | | RB Size | RB offset | RB Size | RB offset | | | | | |
| 39750 | 39948 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver on | 22.88 | 24.5 |
| 40185 | 39987 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver on | 23.37 | 24.5 |
| 40620 | 40422 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver on | 23.46 | 24.5 |
| 41055 | 40857 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver on | 23.48 | 24.5 |
| 41490 | 41292 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver on | 23.61 | 24.5 |
| 39750 | 39948 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver off | 19.05 | 20.5 |
| 40185 | 39987 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver off | 19.11 | 20.5 |
| 40620 | 40422 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver off | 18.99 | 20.5 |
| 41055 | 40857 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver off | 19.02 | 20.5 |
| 41490 | 41292 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver off | 19.18 | 20.5 |



Top Antenna UL CA

| CA_7C | | | | | | | | | | | |
|---------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|-----------------------|-----------------|----------------------|---------------------|
| Combination 20MHz+20MHz (100RB+100RB) | | | | | | | | | | | |
| PCC Channel | SCC Channel | Modulation | PCC | | SCC | | Total RB Size | Target MPR Level (dB) | Power Reduction | Measured Power (dBm) | Tune up Power (dBm) |
| | | | RB Size | RB offset | RB Size | RB offset | | | | | |
| 20850 | 21048 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver on | 17.44 | 18.5 |
| 21100 | 20902 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver on | 17.78 | 18.5 |
| 21350 | 21152 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver on | 17.62 | 18.5 |
| 20850 | 21048 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver off | 19.03 | 19.5 |
| 21100 | 20902 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver off | 19.22 | 19.5 |
| 21350 | 21152 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver off | 19.21 | 19.5 |

| CA_38C | | | | | | | | | | | |
|---------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|-----------------------|-----------------|----------------------|---------------------|
| Combination 20MHz+20MHz (100RB+100RB) | | | | | | | | | | | |
| PCC Channel | SCC Channel | Modulation | PCC | | SCC | | Total RB Size | Target MPR Level (dB) | Power Reduction | Measured Power (dBm) | Tune up Power (dBm) |
| | | | RB Size | RB offset | RB Size | RB offset | | | | | |
| 37850 | 38048 | QPSK | 1 | 99 | 0 | 0 | 1 | 0 | Receiver on | 19.87 | 20.5 |
| 37901 | 38099 | QPSK | 1 | 99 | 0 | 0 | 1 | 0 | Receiver on | 19.56 | 20.5 |
| 38150 | 37952 | QPSK | 1 | 99 | 0 | 0 | 1 | 0 | Receiver on | 19.81 | 20.5 |
| 37850 | 38048 | QPSK | 1 | 99 | 0 | 0 | 1 | 0 | Receiver off | 18.32 | 19.0 |
| 37901 | 38099 | QPSK | 1 | 99 | 0 | 0 | 1 | 0 | Receiver off | 18.29 | 19.0 |
| 38150 | 37952 | QPSK | 1 | 99 | 0 | 0 | 1 | 0 | Receiver off | 18.31 | 19.0 |



| CA_41C | | | | | | | | | | | | |
|---------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|-----------------------|-----------------|----------------------|---------------------|--|
| Combination 20MHz+20MHz (100RB+100RB) | | | | | | | | | | | | |
| PCC Channel | SCC Channel | Modulation | PCC | | SCC | | Total RB Size | Target MPR Level (dB) | Power Reduction | Measured Power (dBm) | Tune up Power (dBm) | |
| | | | RB Size | RB offset | RB Size | RB offset | | | | | | |
| 39750 | 39948 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver on | 19.71 | 20.5 | |
| 40185 | 39987 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver on | 19.78 | 20.5 | |
| 40620 | 40422 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver on | 19.66 | 20.5 | |
| 41055 | 40857 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver on | 19.82 | 20.5 | |
| 41490 | 41292 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver on | 19.91 | 20.5 | |
| 39750 | 39948 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver off | 18.19 | 19.0 | |
| 40185 | 39987 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver off | 18.27 | 19.0 | |
| 40620 | 40422 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver off | 18.33 | 19.0 | |
| 41055 | 40857 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver off | 18.31 | 19.0 | |
| 41490 | 41292 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | Receiver off | 18.41 | 19.0 | |



2CA DL

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

Default Power

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

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

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

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

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

Power Level for Receiver on

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

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

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

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

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

Power Level for Receiver off

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

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

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

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

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



Power Level for Receiver on/off

BR/EDR

| Mode | Channel | Frequency (MHz) | Average power (dBm) | | | | | | | | | Tune-up Limit |
|-----------|---------|-----------------|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|---------------|
| | | | Packet Type | | | | | | | | | |
| | | | DH1 | DH3 | DH5 | 2DH1 | 2DH3 | 2DH5 | 3DH1 | 3DH3 | 3DH5 | |
| Bluetooth | CH 0 | 2402 | 12.70 | 12.60 | 12.50 | 11.50 | 11.40 | 11.30 | 11.50 | 11.40 | 11.30 | 13.50 |
| | CH 39 | 2441 | 13.00 | 12.90 | 12.90 | 11.70 | 11.60 | 11.60 | 11.70 | 11.60 | 11.60 | |
| | CH 78 | 2480 | 11.90 | 11.80 | 11.70 | 10.80 | 10.70 | 10.60 | 10.80 | 10.60 | 10.60 | |

LE v4.0&5.0

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