

**Produkte**  
*Products*

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                               |                                                                                                                                                                 |                                                                                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| <b>Prüfbericht - Nr.:</b> 19660146 003                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                               | <b>Seite 1 von 13</b>                                                                                                                                           |                                                                                |
| <i>Test Report No.:</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                               | <i>Page 1 of 13</i>                                                                                                                                             |                                                                                |
| <b>Auftraggeber:</b><br><i>Client:</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                               | Redpine Signals Inc.<br>2107 N.First Street,<br>Suite 680<br>San Jose, CA 95131-2019<br>U.S.A                                                                   |                                                                                |
| <b>Gegenstand der Prüfung:</b><br><i>Test item:</i>                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                               | 802.11 abgn WiFi/BT/Zigbee MODULE                                                                                                                               |                                                                                |
| <b>Bezeichnung:</b><br><i>Identification:</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                  | RS9113DB                                                                                                                      | <b>Serien-Nr.:</b><br><i>Serial No.</i>                                                                                                                         | Engineering Sample                                                             |
| <b>Wareneingangs-Nr.:</b><br><i>Receipt No.:</i>                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1803166512                                                                                                                    | <b>Eingangsdatum:</b><br><i>Date of receipt:</i>                                                                                                                | 19.09.2016                                                                     |
| <b>Prüfort:</b><br><i>Testing location:</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                               | Refer Page 4 of 13 for test facilities                                                                                                                          |                                                                                |
| <b>Prüfgrundlage:</b><br><i>Test specification:</i>                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                               | FCC Part 15, Subpart E<br>ANSI C63.10-2013                                                                                                                      |                                                                                |
| <b>Prüfergebnis:</b><br><i>Test Result:</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                               | Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n).<br><i>The tests item passed the test specification(s).</i>                                       |                                                                                |
| <b>Prüflaboratorium:</b><br><i>Testing Laboratory:</i>                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                               | TÜV Rheinland (India) Pvt. Ltd.<br>82/A, 3rd Main, West Wing, Electronic City Phase 1<br>Hosur Road, Bangalore – 560 100. India<br>FCC Registration No.: 176555 |                                                                                |
| <b>geprüft / tested by:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                               | <b>kontrolliert / reviewed by:</b>                                                                                                                              |                                                                                |
| 29.09.2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Girish Kumar G<br>Engineer                                                                                                    | 30.09.2016                                                                                                                                                      | Saibaba Siddapur<br>Assistant Manager                                          |
| <b>Datum</b><br><i>Date</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Name/Stellung</b><br><i>Name/Position</i>                                                                                  | <b>Unterschrift</b><br><i>Signature</i>                                                                                                                         | <b>Unterschrift</b><br><i>Signature</i>                                        |
| <b>Sonstiges / Other Aspects:</b> FCC ID: XF6-RS9113DB, Class II Permissive Change                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                               |                                                                                                                                                                 |                                                                                |
| <b>Abkürzungen:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | P(ass) = entspricht Prüfgrundlage<br>F(ail) = entspricht nicht Prüfgrundlage<br>N/A = nicht anwendbar<br>N/T = nicht getestet | <b>Abbreviations:</b>                                                                                                                                           | P(ass) = passed<br>F(ail) = failed<br>N/A = not applicable<br>N/T = not tested |
| <p><b>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</b></p> <p><i>This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.</i></p> |                                                                                                                               |                                                                                                                                                                 |                                                                                |

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## Test Result Summary

| Clause               | Test Item                                                     | Result |
|----------------------|---------------------------------------------------------------|--------|
| FCC Part 15.407 (b)  | Unwanted Emissions                                            | Pass   |
| 15.209/15.205/15.407 | Radiated Spurious Emissions and Restricted bands of operation | Pass   |

The Module is originally certified for FCC with FCC ID: **XF6-RS9113DB**, with respect to the changes made to originally certified module Class 2 permissive change has been applied. Changes made to the originally certified module are listed in the below table.

| Application Purpose        | Antenna                   | Wi-Fi ( 5GHz)                                                                                            | Report Number |
|----------------------------|---------------------------|----------------------------------------------------------------------------------------------------------|---------------|
| Class II Permissive Change | Redpine Antenna           | 40MHz Channel added in the band 5150 MHz to 5250 MHz and band 5725MHz to 5850MHz is covered under Part E | 19660146 002  |
|                            | Molex Antenna             | Additional antenna                                                                                       |               |
|                            | Fractus Antenna           | Additional antenna                                                                                       |               |
|                            | Radiation Technology Inc. | Additional antenna                                                                                       | 19660146 003  |

Also, to address the test results for the above changes, the original test report 19660146 001 is been updated to 19660146 002 & 19660146 003

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## List of Test and Measurement Instruments

### TUV Rheinland (India) Pvt. Ltd., Bangalore

| Equipment              | Manufacturer    | Model Name | Serial Number | Calibration Due Date | Periodicity | Used for Test Items         |
|------------------------|-----------------|------------|---------------|----------------------|-------------|-----------------------------|
| EMI Test Receiver      | Rohde & Schwarz | ESU 40     | 100288        | 29.10.2017           | Yearly      | Spurious Radiated Emissions |
| Broadband Antenna      | Frankonia       | ALX-4000   | ALX-4000-806  | 10.06.2017           | Yearly      |                             |
| Active Loop Antenna    | Frankonia       | LAX-10     | LAX-10-800    | 22.12.2017           | Yearly      |                             |
| Broadband Horn Antenna | Frankonia       | HAX-18     | HAX18-802     | 14.03.2017           | Yearly      |                             |
| Emission Horn Antenna  | ETS Lindgren    | 116706     | 00107323      | 02.11.2016           | Yearly      |                             |
| Anechoic Chamber       | Frankonia       | -          | -             | -                    | -           |                             |

#### Testing Facilities:

- 1) TUV Rheinland (India) Private Limited  
No. 108, West Wing  
Electronic city Phase I  
Bangalore – 560100

## General Product Information

### Product Function and Intended Use

The RS9113 module integrates a multi-threaded MAC processor with integrated analog peripherals and support for digital peripherals, baseband digital signal processor, analog front-end, crystal oscillator, calibration OTP memory, Dual band RF transceiver, Dual-band high-power amplifiers, baluns, diplexers, diversity switch and Quad-SPI Flash thus providing a fully-integrated solution for embedded wireless applications. The RS9113 based chips and modules leverage and improve upon Redpine's proven low power innovations from Lite-FTM products (RS9110) and provide WLAN 802.11n, BT4.0 and ZigBee convergence solution for integration into mobile and M2M communication devices. It can connect to a host processor through SDIO, USB, SPI or UART interfaces.

### Ratings and System Details

|                                  |                                                                                                          |                                           |
|----------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------------------|
| Operating Frequency              | 5150 – 5250 MHz<br>5725 – 5850 MHz                                                                       |                                           |
| No. of channel                   | Refer page 8, Table 2                                                                                    |                                           |
| Channel Spacing                  | 20 MHz, 40MHz                                                                                            |                                           |
| Transmitted Power<br>(Conducted) | 802.11a_20MHz_UNII3                                                                                      | <b>7.46 dBm</b>                           |
|                                  | 802.11n_20MHz_UNII3                                                                                      | <b>7.07 dBm</b>                           |
|                                  | 802.11n_40MHz_UNII1                                                                                      | <b>6.22 dBm</b>                           |
|                                  | 802.11n_40MHz_UNII3                                                                                      | <b>5.11 dBm</b>                           |
| Modulation                       | 802.11a                                                                                                  | OFDM with<br>BPSK,QPSK, 16-QAM,<br>64-QAM |
|                                  | 802.11n                                                                                                  | BPSK,QPSK,16-<br>QAM,64-QAM               |
| Data Rate                        | 802.11n: MCS0, MCS1, MCS2, MCS3, MCS4,<br>MCS5, MCS6, MCS7<br>802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps |                                           |
| Antenna Type                     | Refer table 1                                                                                            |                                           |
| Number of antenna                | Refer table 1                                                                                            |                                           |
| Antenna Gain                     | Refer table 1                                                                                            |                                           |
| Supply Voltage                   | 3.0 - 3.6 V DC from host device                                                                          |                                           |
| Environmental                    | -40°C to +85°C                                                                                           |                                           |

### Test Conditions:

Supply Voltage: 5V DC from USB

### Environmental conditions:

**Temperature:** +23 °C

**RH:** 62%

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## Test Set-up and Operation Mode

### Principle of Configuration Selection

Transmission was enabled with 100% duty cycle on low, mid and high channel.

### Test Operation and Test Software

Test software was used to enable the transmission with 100% duty cycle, changing channels (low/mid/high) and data rates on the EUT for the tests in this report.

### Special Accessories and Auxiliary Equipment

- None

### Countermeasures to achieve EMC Compliance

- None

### Test Modes – Data Rates and Modulations

For Radiated spurious emissions, the tests were performed for all data rates and only worst case results are reported in this report.

### List of Antenna Used:

| Make                      | Model/Part #  | Antenna Gain at 2.4GHz (dBi) | Antenna Gain at 5 GHz (dBi) | Type of Antenna |
|---------------------------|---------------|------------------------------|-----------------------------|-----------------|
| Radiation Technology Inc. | C0289-ANG0011 | 5                            | 5                           | Dipole          |

Table 1

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Table of Carrier frequencies:

| Frequency Band                                  | Channel No. | Frequency (MHz) |
|-------------------------------------------------|-------------|-----------------|
| <b>5GHz Band – 20MHz Bandwidth Channel List</b> |             |                 |
| 5150 – 5250 MHz                                 | 36          | 5180            |
|                                                 | 40          | 5200            |
|                                                 | 44          | 5220            |
|                                                 | 48          | 5240            |
| 5725 – 5850MHz                                  | 149         | 5745            |
|                                                 | 143         | 5765            |
|                                                 | 157         | 5785            |
|                                                 | 161         | 5805            |
|                                                 | 165         | 5825            |
| <b>5GHz Band – 40MHz Bandwidth Channel List</b> |             |                 |
| 5150 – 5250 MHz                                 | 38          | 5190            |
|                                                 | 46          | 5230            |
| 5725 – 5850MHz                                  | 151         | 5755            |
|                                                 | 159         | 5795            |

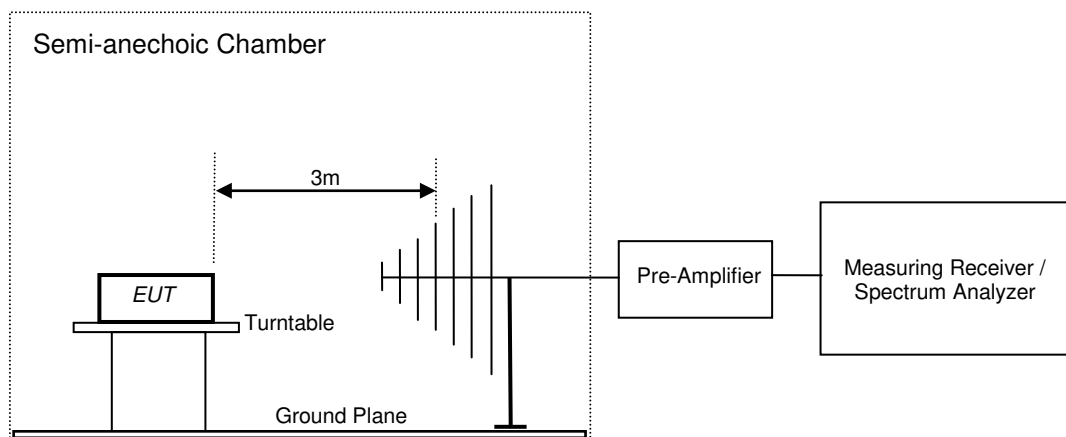
**Table 2**

## Test Methodology

### Radiated Emission Test

The radiated emission measurement was performed according to the procedures in ANSI C63.10-2013. The equipment under test (EUT) was placed at the middle of the 80 cm high turntable, and the EUT is 3 meters far from the measuring antenna for below 1GHz & The equipment under test (EUT) was placed at the middle of the 1.5m high turntable, and the EUT is 3 meters far from the measuring antenna for above 1GHz. The turntable was rotated 360° for obtaining the maximum emission. The height of the measuring antennas was scanned between 1m and 4m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations. Repeat the measurement steps until the maximum emissions were obtained. The measurement above 1000MHz was performed by horn antenna. The measurement below 30MHz was performed by loop antenna.

The EUT was rotated around the X-, Y-, and Z-Axis and the results from worst case axis are recorded.



## Test Results

**Radiated Spurious Emissions,  
Restricted bands of operation and  
Unwanted Emission  
Result**

**Section 15.209 /15.205/15.407 (b) (6)  
Pass**

|                      |                                                                    |
|----------------------|--------------------------------------------------------------------|
| Test Specification   | FCC Part 15 Section 15.209                                         |
| Test Method          | ANSI C63.10-2013                                                   |
| Measurement Location | Semi Anechoic Chamber                                              |
| Measuring Distance   | 3m                                                                 |
| Detection            | QP for frequency below 1GHz, Peak/Average for frequency above 1GHz |
| Requirement          | Should Comply with the limits stated in the below table.           |

### Limit for Radiated Emission of Section 15.209:

| Frequency (MHz) | Field strength (μV/m) | Field strength (dBμV/m) | Distance of Measurement (m) |
|-----------------|-----------------------|-------------------------|-----------------------------|
| 0.009 – 0.490   | 2400/F(kHz)           | 48.50 – 13.80           | 300*                        |
| 0.490 – 1.705   | 24000/F(kHz)          | 33.80 – 23.00           | 30*                         |
| 1.705 -30       | 30                    | 29.54                   | 30*                         |
| 30-88           | 100                   | 40.0                    | 3                           |
| 88-216          | 150                   | 43.5                    | 3                           |
| 216-960         | 200                   | 46.0                    | 3                           |
| Above 960       | 500                   | 54.0                    | 3                           |

Remark: \* the limit shows in the table above of frequency range 0.009 – 0.490, 0.490 – 1.705 MHz and 1.705-30MHz is at 300 meter, 30 meter and 30 meter range respectively, which corresponds To 88,50 – 53.80, 53.80 – 43.00 and 49.5dBμV/m at 3m range by extrapolation calculation and The measurement of loop antenna

The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz Radiated emission limits in these three bands are based on measurements employing an average detector.

## Test results:

### For frequencies Range 9 kHz – 1 GHz

No emissions were found in this frequency range.

### For Frequencies above 1 GHz – 40 GHz

Emissions were found worst at data rate 54Mbps & MCS7, test result for same are reported below.

**Note:** No harmonics emissions were found.

| 802.11a: Channel Bandwidth - 20MHz; Data rate - 54 Mbps; |                        |                 |              |                         |                |             |
|----------------------------------------------------------|------------------------|-----------------|--------------|-------------------------|----------------|-------------|
| Frequency Bands                                          | Channel No./ Frequency | Frequency (MHz) | Polarization | Field Strength (dBμV/m) | Limit (dBμV/m) | Margin (dB) |
| 5150-5250 (UNII -1)                                      | 36 (5180MHz)           | 5150 (Pk)       | Vertical     | 67.61                   | 74             | -17.57      |
|                                                          |                        | 5150 (Av)       |              | 44.68                   | 54             | -12.58      |
|                                                          |                        | 5180 (Pk)       |              | 100.45                  | *              | -           |
|                                                          |                        | 5180 (Av)       |              | 91.46                   | *              | -           |
|                                                          |                        | 5150 (Pk)       | Horizontal   | 66.81                   | 74             | -7.1        |
|                                                          |                        | 5150 (Av)       |              | 43.95                   | 54             | -1.38       |
|                                                          |                        | 5180 (Pk)       |              | 99.99                   | *              | -           |
|                                                          |                        | 5180 (Av)       |              | 91.00                   | *              | -           |
|                                                          | 40 (5200MHz)           | 5200 (Pk)       | Vertical     | 108.21                  | *              | -           |
|                                                          |                        | 5200 (Av)       |              | 97.89                   | *              | -           |
|                                                          |                        | 5200 (Pk)       | Horizontal   | 105.68                  | *              | -           |
|                                                          |                        | 5200 (Av)       |              | 95.14                   | *              | -           |
|                                                          | 48 (5240MHz)           | 5240 (Pk)       | Vertical     | 107.98                  | *              | -           |
|                                                          |                        | 5240 (Av)       |              | 97.68                   | *              | -           |
|                                                          |                        | 5240 (Pk)       | Horizontal   | 106.12                  | *              | -           |
|                                                          |                        | 5240 (Av)       |              | 95.89                   | *              | -           |
| 5725-5850 (UNII - 3)                                     | 149 (5745MHz)          | 5720 (Pk)       | Vertical     | 60.05                   | 110.83         | -48.47      |
|                                                          |                        | 5745 (Pk)       |              | 96.09                   | *              | -           |
|                                                          |                        | 5745 (Av)       |              | 87.35                   | *              | -           |
|                                                          |                        | 5720 (Pk)       | Horizontal   | 58.68                   | 110.83         | -43.96      |
|                                                          |                        | 5745 (Pk)       |              | 93.76                   | *              | -           |
|                                                          |                        | 5745 (Av)       |              | 84.99                   | *              | -           |
|                                                          | 157 (5785MHz)          | 5785 (Pk)       | Vertical     | 103.98                  | *              | -           |
|                                                          |                        | 5785 (Av)       |              | 93.25                   | *              | -           |
|                                                          |                        | 5785 (Pk)       | Horizontal   | 99.98                   | *              | -           |
|                                                          |                        | 5785 (Av)       |              | 89.45                   | *              | -           |
|                                                          | 165 (5825MHz)          | 5825 (Pk)       | Vertical     | 100.86                  | *              | -           |
|                                                          |                        | 5825 (Av)       |              | 92.16                   | *              | -           |
|                                                          |                        | 5855 (Pk)       |              | 70.9                    | 110.83         | -44.21      |
|                                                          |                        | 5875 (Pk)       |              | 54.98                   | 105.23         | -47.34      |
|                                                          |                        | 5825 (Pk)       | Horizontal   | 97.79                   | *              | -           |
|                                                          |                        | 5825 (Av)       |              | 89.16                   | *              | -           |
|                                                          |                        | 5855 (Pk)       |              | 68.03                   | 110.83         | -59.42      |
|                                                          |                        | 5875 (Pk)       |              | 52.25                   | 105.23         | -61.24      |

| 802.11n: Channel Bandwidth - 20MHz; Data rate - MCS7; |                        |                 |              |                         |                |             |
|-------------------------------------------------------|------------------------|-----------------|--------------|-------------------------|----------------|-------------|
| Frequency Bands                                       | Channel No./ Frequency | Frequency (MHz) | Polarization | Field Strength (dBμV/m) | Limit (dBμV/m) | Margin (dB) |
| 5150-5250 (UNII -1)                                   | 36 (5180MHz)           | 5150 (Pk)       | Vertical     | 65.98                   | 74             | -17.57      |
|                                                       |                        | 5150 (Av)       |              | 46.72                   | 54             | -12.58      |
|                                                       |                        | 5180 (Pk)       |              | 101.39                  | *              | -           |
|                                                       |                        | 5180 (Av)       |              | 90.68                   | *              | -           |
|                                                       |                        | 5150 (Pk)       | Horizontal   | 60.29                   | 74             | -7.1        |
|                                                       |                        | 5150 (Av)       |              | 43.54                   | 54             | -1.38       |
|                                                       |                        | 5180 (Pk)       |              | 97.24                   | *              | -           |
|                                                       |                        | 5180 (Av)       |              | 86.33                   | *              | -           |
|                                                       | 40 (5200MHz)           | 5200 (Pk)       | Vertical     | 107.98                  | *              | -           |
|                                                       |                        | 5200 (Av)       |              | 97.56                   | *              | -           |
|                                                       |                        | 5200 (Pk)       | Horizontal   | 105.54                  | *              | -           |
|                                                       |                        | 5200 (Av)       |              | 94.86                   | *              | -           |
|                                                       | 48 (5240MHz)           | 5240 (Pk)       | Vertical     | 107.7                   | *              | -           |
|                                                       |                        | 5240 (Av)       |              | 98.35                   | *              | -           |
|                                                       |                        | 5240 (Pk)       | Horizontal   | 106.08                  | *              | -           |
|                                                       |                        | 5240 (Av)       |              | 95.91                   | *              | -           |
| 5725-5850 (UNII - 3)                                  | 149 (5745MHz)          | 5720 (Pk)       | Vertical     | 58.03                   | 110.83         | -48.47      |
|                                                       |                        | 5745 (Pk)       |              | 97.9                    | *              | -           |
|                                                       |                        | 5745 (Av)       |              | 87.16                   | *              | -           |
|                                                       |                        | 5720 (Pk)       | Horizontal   | 57.18                   | 110.83         | -43.96      |
|                                                       |                        | 5745 (Pk)       |              | 95.68                   | *              | -           |
|                                                       |                        | 5745 (Av)       |              | 84.76                   | *              | -           |
|                                                       | 157 (5785MHz)          | 5785 (Pk)       | Vertical     | 104.04                  | *              | -           |
|                                                       |                        | 5785 (Av)       |              | 93.68                   | *              | -           |
|                                                       |                        | 5785 (Pk)       | Horizontal   | 98.76                   | *              | -           |
|                                                       |                        | 5785 (Av)       |              | 88.34                   | *              | -           |
|                                                       | 165 (5825MHz)          | 5825 (Pk)       | Vertical     | 101.81                  | *              | -           |
|                                                       |                        | 5825 (Av)       |              | 91.87                   | *              | -           |
|                                                       |                        | 5855 (Pk)       |              | 67.7                    | 110.83         | -44.21      |
|                                                       |                        | 5875(Pk)        |              | 55.06                   | 105.23         | -47.34      |
|                                                       |                        | 5825 (Pk)       | Horizontal   | 99.71                   | *              | -           |
|                                                       |                        | 5825 (Av)       |              | 88.94                   | *              | -           |
|                                                       |                        | 5855 (Pk)       |              | 64.46                   | 110.83         | -59.42      |
|                                                       |                        | 5875 (Pk)       |              | 52.81                   | 105.23         | -61.24      |

| 802.11n: Channel Bandwidth - 40MHz; Data rate - MCS7; |                      |                    |              |                               |                   |                |
|-------------------------------------------------------|----------------------|--------------------|--------------|-------------------------------|-------------------|----------------|
| Freq Bands                                            | Ch No./<br>Frequency | Frequency<br>(MHz) | Polarization | Field<br>Strength<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) |
| 5150-5250<br>(UNII -1)                                | 38<br>(5190MHz)      | 5150 (Pk)          | Vertical     | 68.02                         | 74                | -5.98          |
|                                                       |                      | 5150 (Av)          |              | 53.42                         | 54                | -0.58          |
|                                                       |                      | 5190 (Pk)          |              | 100.06                        | *                 | -              |
|                                                       |                      | 5190 (Av)          |              | 89.57                         | *                 | -              |
|                                                       |                      | 5150 (Pk)          | Horizontal   | 65.68                         | 74                | -8.32          |
|                                                       |                      | 5150 (Av)          |              | 50.32                         | 54                | -3.68          |
|                                                       |                      | 5190 (Pk)          |              | 97.4                          | *                 | -              |
|                                                       |                      | 5190 (Av)          |              | 86.4                          | *                 | -              |
|                                                       | 46<br>(5230MHz)      | 5230 (Pk)          | Vertical     | 100.78                        | *                 | -              |
|                                                       |                      | 5230 (Av)          |              | 89.86                         | *                 | -              |
|                                                       |                      | 5230 (Pk)          | Horizontal   | 97.34                         | *                 | -              |
|                                                       |                      | 5230 (Av)          |              | 86.79                         | *                 | -              |
| 5725-5850<br>(UNII - 3)                               | 151<br>(5755MHz)     | 5715 (Pk)          | Vertical     | 65.06                         | 68.23             | -3.17          |
|                                                       |                      | 5725 (Pk)          |              | 68.19                         | 78.23             | -10.04         |
|                                                       |                      | 5755 (Pk)          |              | 95.24                         | *                 | -              |
|                                                       |                      | 5755 (Av)          |              | 84.2                          | *                 | -              |
|                                                       |                      | 5715 (Pk)          | Horizontal   | 59.71                         | 68.23             | -8.52          |
|                                                       |                      | 5725 (Pk)          |              | 63.67                         | 78.23             | -14.56         |
|                                                       |                      | 5755 (Pk)          |              | 90.19                         | *                 | -              |
|                                                       |                      | 5755 (Av)          |              | 79.46                         | *                 | -              |
|                                                       | 159<br>(5795MHz)     | 5795 (Pk)          | Vertical     | 99.94                         | *                 | -              |
|                                                       |                      | 5795 (Av)          |              | 89.01                         | *                 | -              |
|                                                       |                      | 5850 (Pk)          |              | 70.24                         | 78.23             | -7.99          |
|                                                       |                      | 5860 (Pk)          |              | 66.8                          | 68.23             | -1.43          |
|                                                       |                      | 5795 (Pk)          | Horizontal   | 94.59                         | *                 | -              |
|                                                       |                      | 5795 (Av)          |              | 84.51                         | *                 | -              |
|                                                       |                      | 5850 (Pk)          |              | 65.55                         | 78.23             | -12.68         |
|                                                       |                      | 5860 (Pk)          |              | 62.4                          | 68.23             | -5.83          |

\* - -> Fundamental Frequency

Pk-->Peak detector

AV-->Average Detector

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**Power level Settings used during testing:**

| <b>20MHz Channel: Power setting used for Radiation Technology antenna Attenuation to antenna gain used is '0'</b> |                                |                    |                  |              |             |               |             |               |
|-------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------|------------------|--------------|-------------|---------------|-------------|---------------|
| <b>Band</b>                                                                                                       | <b>Channel Frequency (MHz)</b> | <b>Channel No.</b> | <b>Data Rate</b> |              |             |               |             |               |
|                                                                                                                   |                                |                    | <b>MCS0</b>      | <b>6Mbps</b> | <b>MCS4</b> | <b>24Mbps</b> | <b>MCS7</b> | <b>54Mbps</b> |
| UNII 1                                                                                                            | 5180                           | 36                 | 12               | 12           | 12          | 12            | 12          | 12            |
|                                                                                                                   | 5200                           | 40                 | 14               | 14           | 14          | 14            | 14          | 14            |
|                                                                                                                   | 5240                           | 48                 | 14               | 14           | 14          | 14            | 14          | 14            |
| UNII 3                                                                                                            | 5745                           | 149                | 4                | 5            | 4           | 5             | 4           | 5             |
|                                                                                                                   | 5765                           | 153                | 9                | 10           | 9           | 10            | 9           | 10            |
|                                                                                                                   | 5785                           | 157                | 9                | 10           | 9           | 10            | 9           | 10            |
|                                                                                                                   | 5825                           | 165                | 9                | 10           | 9           | 10            | 9           | 10            |

| <b>40MHz Channel: Power setting used for Radiation Technology antenna. Attenuation to antenna gain used is '0'</b> |                                |                    |                  |             |             |
|--------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------|------------------|-------------|-------------|
| <b>Band</b>                                                                                                        | <b>Channel Frequency (MHz)</b> | <b>Channel No.</b> | <b>Data rate</b> |             |             |
|                                                                                                                    |                                |                    | <b>MCS0</b>      | <b>MCS4</b> | <b>MCS7</b> |
| UNII 1                                                                                                             | 5190                           | 38                 | 7                | 7           | 7           |
|                                                                                                                    | 5230                           | 46                 | 7                | 7           | 7           |
| UNII 3                                                                                                             | 5755                           | 151                | 3                | 3           | 3           |
|                                                                                                                    | 5795                           | 159                | 8                | 8           | 8           |