

RSE MEASUREMENT REPORT

FCC ID: 2ABGH-R8L5T
Applicant: Reliance Communications LLC

Product: Orbic Tab8 5G
Model No.: R8L5T
Brand Name: Orbic
FCC Rule Part(s): Part 30.203
Test Date: September 16 ~ 17, 2021

Reviewed By:

Approved By:



The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.26-2015. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

Revision History

| Report No. | Version | Description | Issue Date | Note |
|---------------|---------|---------------------------|------------|---------|
| 2109RSU025-U1 | Rev. 01 | Initial Report | 09-23-2021 | Invalid |
| 2109RSU025-U1 | Rev. 02 | Add note from TCB comment | 11-09-2021 | Valid |
| | | | | |

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1. GENERAL INFORMATION

1.1. Applicant

Reliance Communications LLC

91 Colin Drive, Unit 1, HOLBROOK, New York 11741, United States

1.2. Manufacturer

ZJY RIGHT SOURCE INDIA PRIVATE LIMITED

MIDC industrial Area, Shiravane, Nerul, India

1.3. Testing Facility

| | |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | Test Site – MRT Suzhou Laboratory |
| | Laboratory Location (Suzhou - Wuzhong) D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China |
| | Laboratory Location (Suzhou - SIP) 4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China |
| | Laboratory Accreditations |
| | A2LA: 3628.01 CNAS: L10551 FCC: CN1166 ISED: CN0001 VCCI: <input type="checkbox"/> R-20025 <input type="checkbox"/> G-20034 <input type="checkbox"/> C-20020 <input type="checkbox"/> T-20020 <input type="checkbox"/> R-20141 <input type="checkbox"/> G-20134 <input type="checkbox"/> C-20103 <input type="checkbox"/> T-20104 |
| <input type="checkbox"/> | Test Site – MRT Shenzhen Laboratory |
| | Laboratory Location (Shenzhen) 1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China |
| | Laboratory Accreditations |
| | A2LA: 3628.02 CNAS: L10551 FCC: CN1284 ISED: CN0105 |
| <input type="checkbox"/> | Test Site – MRT Taiwan Laboratory |
| | Laboratory Location (Taiwan) No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) |
| | Laboratory Accreditations |
| | TAF: L3261-190725 FCC: 291082, TW3261 ISED: TW3261 |

2. PRODUCT INFORMATION

2.1. Equipment Description

| | |
|-------------------------|--|
| Product Name | Orbic Tab8 5G |
| Model No. | R8L5T |
| Brand Name | Orbic |
| IMEI | 354753170003939 |
| Hardware Version | V1.1 |
| Software Version | ORB8L5T_v1.0.28_BVZ |
| Power Type | 3.55VDC to 4.4VDC (nominal: 3.85VDC) |
| 5G NR FR2 Specification | |
| Band | n260 |
| Frequency Range | 37000 ~ 40000MHz |
| Support Bandwidth | 100MHz |
| Modulation | DFT-s-OFDM: Pi/2 BPSK/QPSK / 16QAM / 64QAM |
| SCS for NR cell | 120kHz |

Note: The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

2.2. Test Methodology

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ANSI C63.26:2015
- FCC CFR 47 Part 30
- FCC KDB 971168 D01 v03r01: Power Meas License Digital Systems
- FCC KDB 842590 D01 Upper Microwave Flexible Use Service v01r01

2.3. Device Capabilities

The NR radio operation is controlled via software tool QRCT FTM mode (Factory mode). The EUT is forced to operate continuously (100% duty cycle) with maximum output power during the test.

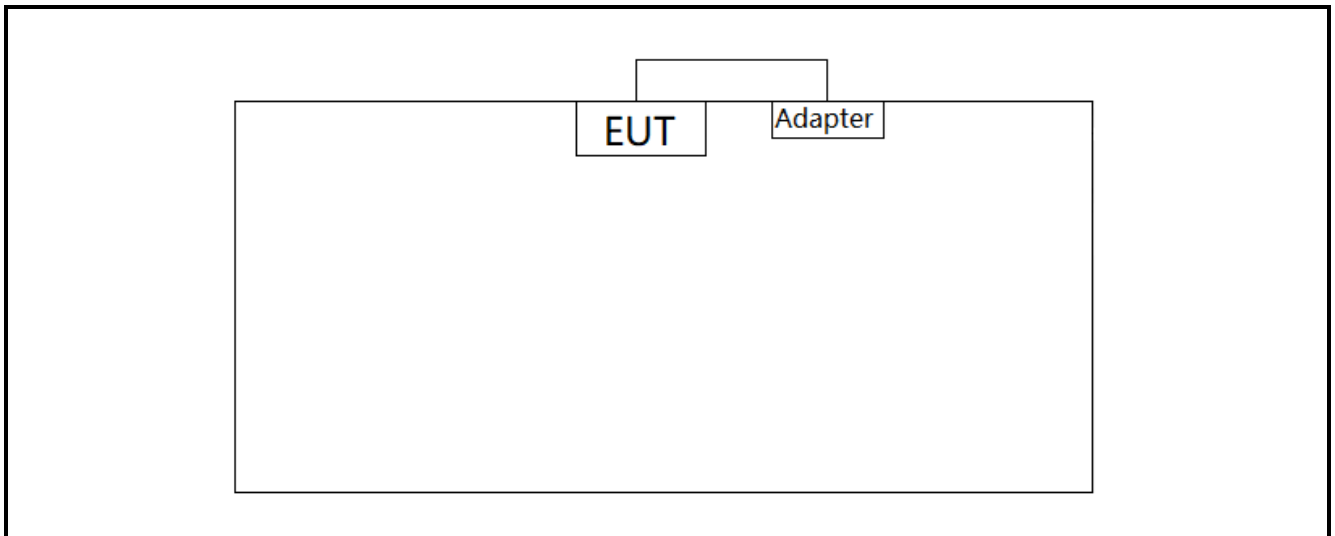
2.4. Test Mode Applicability

| Test Item | Beam ID | Axis (X, Y, Z) |
|-------------------|---------|-------------------|
| n260 | | |
| Spurious Emission | 150 | X |

| Test Item | BW (MHz) | | Modulation | | | | Channel | RB | | |
|-------------------|----------|-----|------------|------|-------|-------|---------|----|-------|------|
| | 50 | 100 | BPSK | QPSK | 16QAM | 64QAM | | 1 | Inner | Full |
| Spurious Emission | -- | √ | -- | √ | -- | -- | Low | √ | -- | -- |
| | -- | √ | -- | √ | -- | -- | Middle | √ | -- | -- |
| | -- | √ | -- | √ | -- | -- | High | √ | -- | -- |

Note: The mark "√" means that this configuration is chosen for testing.

2.5. Configuration of Tested System



2.6. Calculations of Measurement Result

EIRP Calculation

$$\text{EIRP (dBm)} = \text{Spectrum Analyzer Level(dBm)} - \text{Antenna Gain (dBi)} + \text{Converter Loss(dB)} + 20\log(F) + 20\log(D) - 27.56$$

Where:

F: frequency (MHz)

D: Distance (m)

Example:

The frequency we select is 111.077GHz and the distance is 1m.

$$\begin{aligned} \text{Offset} &= - \text{Antenna Gain (dBi)} + \text{converter Loss(dB)} + 20\log(F) + 20\log(D) - 27.56 \\ &= -24.70 + 11.60 + 100.91 + 20\log(1) - 27.56 \\ &= 60.25 \text{ dB} \end{aligned}$$

The test results in the screenshot already includes this offset.

2.7. Minimum Measurement Distance Evaluation

According to KDB842590 D01, the measurements of the fundamental emission, out of band, harmonics and spurious emissions shall be made in the far field of the measurement antenna. The far-field boundary for mmW antennas is greater than or equal to $2D^2/\lambda$ (with D being the largest dimension of the antenna, and λ the wavelength of the emission). When the selected far-field measurement distance is different than the distance at which the applicable limit is specified, a linear inverse distance attenuation factor (20 dB/decade of distance change for field strength) shall be applied.

For fundamental or out-of-band emissions the largest far-field distance of either the EUT antenna or measurement antenna shall be used. For spurious emissions the far-field distance will be based on the measurement antenna.

Spurious Emission

| Frequency Range (GHz) | Measurement Distance (m) |
|--------------------------|-----------------------------|
| 110 ~ 140 | 1 |
| 140 ~ 220 | 1 |

2.8. Test Environment Condition

| | |
|---------------------|------------|
| Ambient Temperature | 15 ~ 35°C |
| Relative Humidity | 20 ~ 75%RH |

3. TEST EQUIPMENT CALIBRATION DATE

| Instrument | Manufacturer | Model No. | Serial No. | Characteristics | Cali. Date | Due Date | Asset No. |
|---------------------|--------------|-----------|------------|------------------------|------------|------------|-------------|
| EXA Signal Analyzer | Keysight | N9030B | MY57140549 | 3Hz-50GHz | 2021/08/09 | 2022/08/08 | MRTSUE06395 |
| Micro-Wave Antenna | MI-WWAVE | 261F-25 | 385 | 90~140GHz | 2016/12/26 | N/A | MRTSUE06275 |
| Micro-Wave Antenna | MI-WWAVE | 261G | 387 | 140~220GHz | 2016/12/26 | N/A | MRTSUE06274 |
| SA Extension Module | Keysight | N9029AV06 | US53250010 | 110-170GH | N/A | N/A | MRTSUE06368 |
| SA Extension Module | Keysight | N9029AV05 | US53250008 | 140-220 GHz | N/A | N/A | MRTSUE06367 |
| Thermal Hygrometer | testo | 608-H1 | 1945229024 | T: 0~50°C; H: 10~95%RH | 2020/12/04 | 2021/12/03 | MRTSUE06622 |
| Anechoic Chamber | RIKEN | SIP-AC3 | N/A | N/A | 2020/12/25 | 2021/12/24 | MRTSUE06782 |

4. TEST RESULT

4.1. Summary

| FCC Part Section(s) | Test Description | Test Limit | Test Condition | Test Result | Reference |
|---------------------|-------------------|------------|----------------|-------------|-------------|
| 30.203 | Spurious Emission | < -13dBm | Radiated | Pass | Section 4.2 |

Note 1: Only 110-200GHz spurious emissions were investigated in this report.

Note 2: We chose the maximum power configuration to complete the spurious emission test.

4.2. Radiated Spurious Emissions Measurements

4.2.1. Test Limit

All out of band emissions are measured in a radiated test setup while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All modulations were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

The conductive power or total radiated power of any emissions outside a licensee's frequency block shall be -13dBm/1MHz.

4.2.2. Test Procedure Used

ANSI C63.26-2015 - Section 5.7.4

KDB 842590 D01 v01 Section 4.4.2 and Section 4.4.3

4.2.3. Test Setting

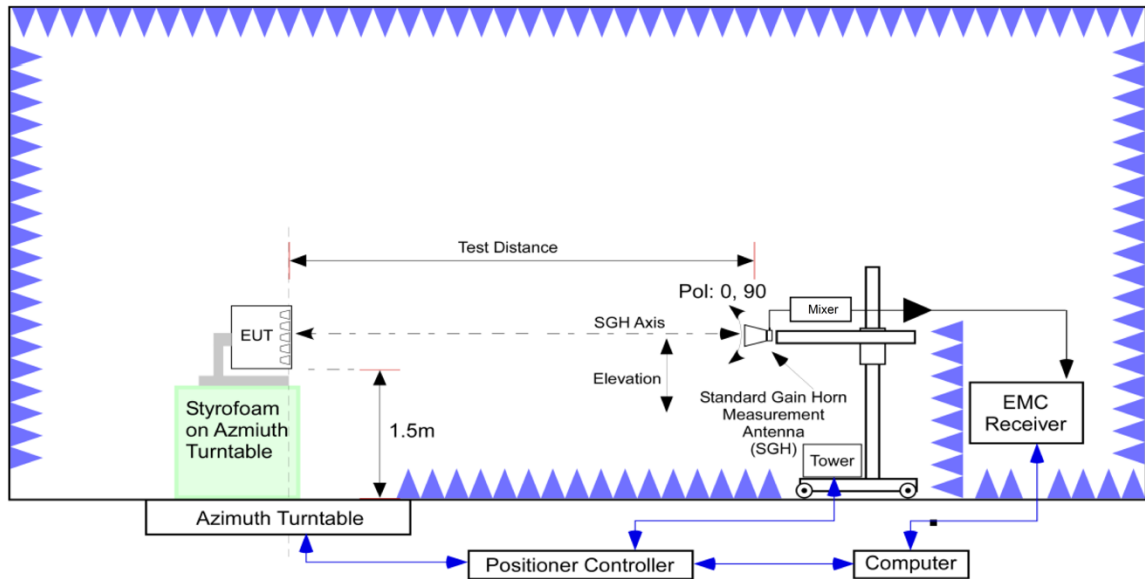
1. RBW = 1MHz
2. VBW $\geq 3 \times$ RBW
3. Sweep time $\geq 10 \times$ (number of points in sweep) \times (transmission symbol period)
4. Detector = RMS
5. Trace mode = Trace Average
6. The trace was allowed to stabilize

Test Note:

- 1) All radiated spurious emissions were measured as EIRP to compare with the §30.203 TRP limits.
- 2) The plots from 110-200GHz show corrected average EIRP levels and Harmonic Mixer Conversion Loss was also applied to the spectrum analyzer.

4.2.4. Test Setup

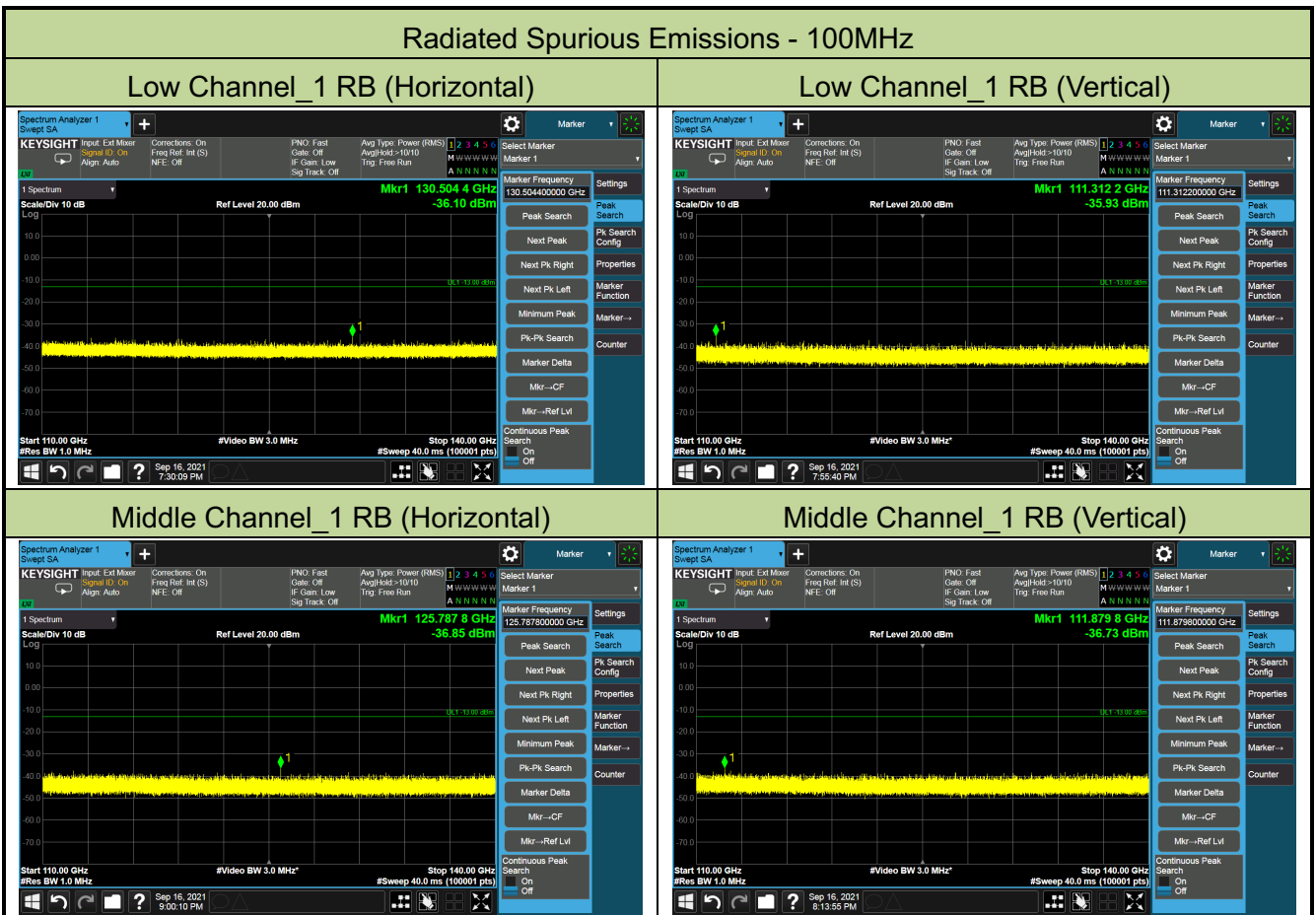
110GHz ~ 200GHz Test Setup:

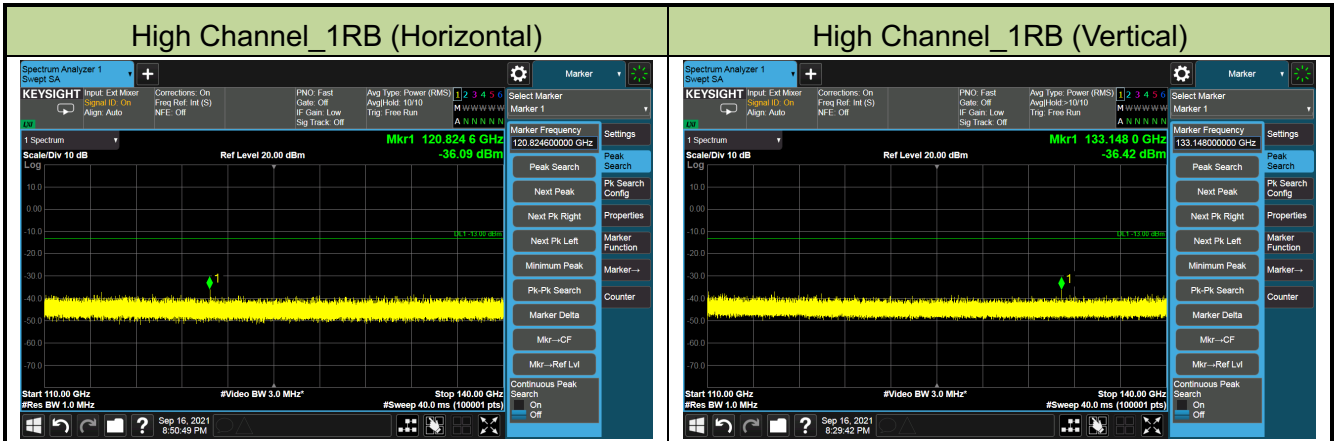


4.2.5. Test Result

| | | | |
|---------------|--------------------------------|-----------|------------|
| Product | Orbic Tab8 5G | Test Site | SIP-AC3 |
| Test Engineer | Andy Zhu | Test Date | 2021/09/16 |
| Test Mode | n260_SISO Mode_110GHz ~ 140GHz | | |

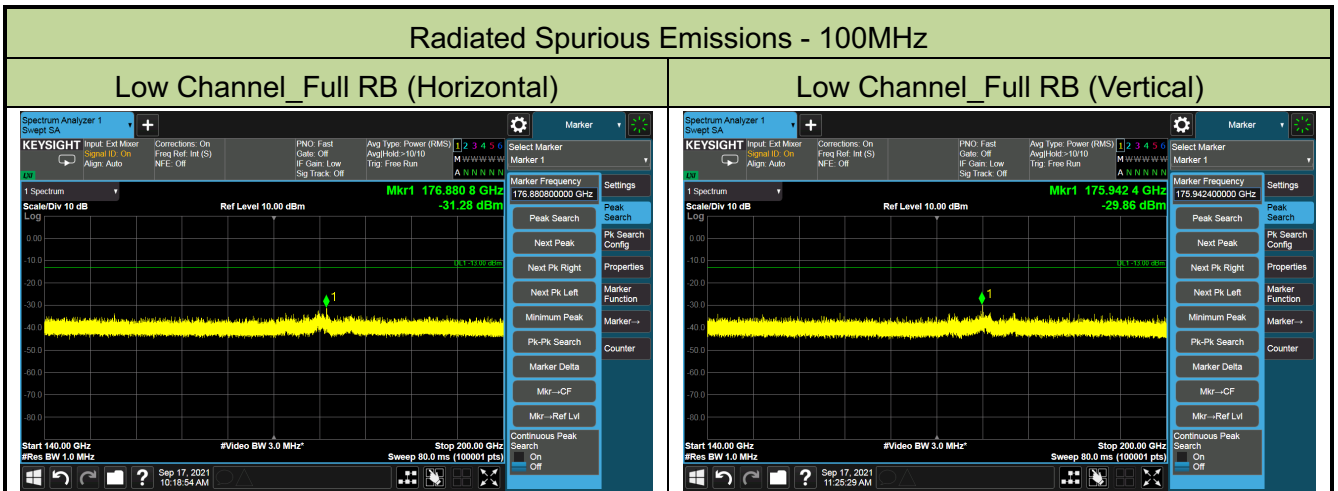
| CH | BW (MHz) | RB | EIRP (dBm) | | Limit (dBm) | Result |
|--------|----------|-----|------------|--------|-------------|--------|
| | | | H | V | | |
| Low | 100 | 1RB | -36.10 | -35.93 | ≤ -13.00 | Pass |
| Middle | | 1RB | -36.85 | -36.73 | ≤ -13.00 | Pass |
| High | | 1RB | -36.09 | -36.42 | ≤ -13.00 | Pass |

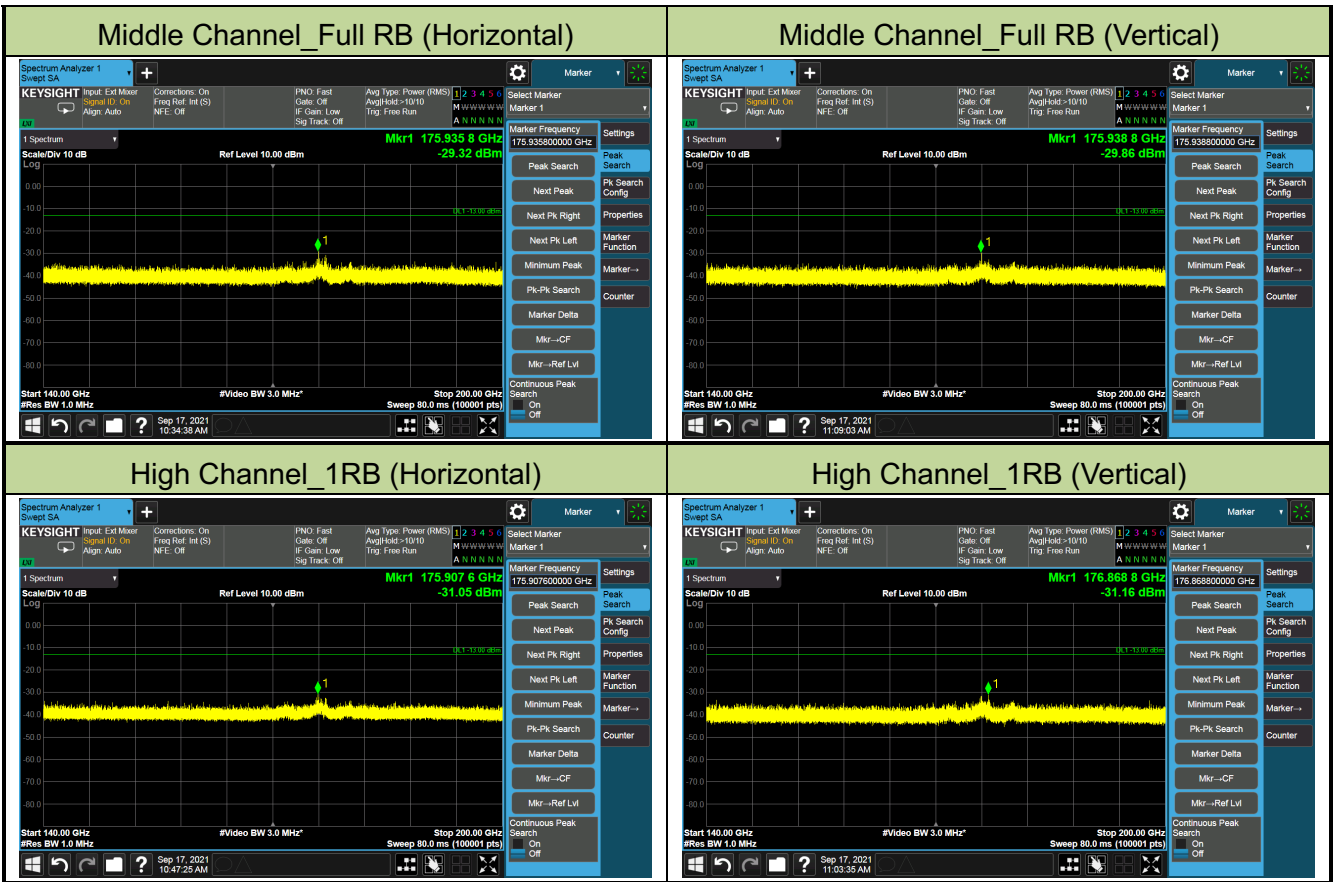




| | | | |
|---------------|--------------------------------|-----------|------------|
| Product | Orbic Tab8 5G | Test Site | SIP-AC3 |
| Test Engineer | Andy Zhu | Test Date | 2021/09/17 |
| Test Mode | n260_SISO Mode_140GHz ~ 200GHz | | |

| CH | BW (MHz) | RB | EIRP (dBm) | | Limit (dBm) | Result |
|--------|----------|-----|------------|--------|-------------|--------|
| | | | H | V | | |
| Low | 100 | 1RB | -31.28 | -29.86 | ≤ -13.00 | Pass |
| Middle | | 1RB | -29.32 | -29.86 | ≤ -13.00 | Pass |
| High | | 1RB | -31.05 | -31.16 | ≤ -13.00 | Pass |





Appendix A - Test Setup Photograph

Refer to "2109RSU025-UT" file.

Appendix B - Equipment Calibration Certificate

Micro-Wave Antenna - 90 - 140G

MI-WAVE

Millimeter Products Inc.

2200 Tall Pines Drive
Suite 100
Largo, FL 33771
Tel. (727) 536-0033
Fax. (727) 536-0012

Test Data Sheet
261F-25/385

Specifications

Frequency Range 90 to 140 GHz WR-08

| Frequency (GHz) | Gain (db) |
|-----------------|-----------|
| 90.0 | 23.4 |
| 95.0 | 23.7 |
| 100.0 | 24.1 |
| 105.0 | 24.4 |
| 110.0 | 24.7 |
| 115.0 | 25.0 |
| 120.0 | 25.2 |
| 125.0 | 25.4 |
| 130.0 | 25.5 |
| 135.0 | 25.7 |
| 140.0 | 25.9 |

Tested by _____ Date _____

Micro-Wave Antenna - 140 - 220G

MI-WAVE**Millimeter Products Inc.**

2200 Tall Pines Drive
Suite 100
Largo, Fl. 33771
Tel. (727) 536-0033
Fax. (727) 536-0012

Test Data Sheet
261G-25/387

Specifications

Frequency Range 140 to 220 GHz WR-05

| Frequency (GHz) | Gain (db) |
|-----------------|-----------|
| 140.0 | 23.5 |
| 145.0 | 23.7 |
| 150.0 | 23.9 |
| 155.0 | 24.1 |
| 160.0 | 24.3 |
| 165.0 | 24.6 |
| 170.0 | 24.8 |
| 175.0 | 25.0 |
| 180.0 | 25.1 |
| 190.0 | 25.4 |
| 200.0 | 25.6 |
| 210.0 | 25.7 |
| 220.0 | 25.8 |

Tested by _____ Date _____



N9029AV06 Conversion Loss Data

SAX 176 Conversion Loss

Note: Out of band data is not guaranteed to be accurate.

| Freq(GHz) | *A' LO/IF Input/Output | *B' Standard Input | *C' High Freq. Input | High Freq. Intrinsic Mixer Loss | Standard Freq. Intrinsic Mixer Loss |
|-----------|------------------------|--------------------|----------------------|---------------------------------|-------------------------------------|
| 140.00 | 11.4588 | -1.4689 | -1.1281 | 10.66788047 | 10.36615107 |
| 140.80 | 11.5383 | -1.3966 | -0.8949 | 10.88445437 | 10.46186817 |
| 141.60 | 11.0189 | -1.8996 | -1.9279 | 9.962309889 | 10.0161337 |
| 142.40 | 10.8230 | -2.0928 | -2.1223 | 10.0455533 | 10.0609166 |
| 143.20 | 10.2839 | -2.6194 | -2.6477 | 9.508234121 | 9.546945621 |
| 144.00 | 10.5276 | -2.3855 | -2.5330 | 9.458753579 | 9.608467179 |
| 144.80 | 10.7186 | -2.2001 | -2.4504 | 9.609950087 | 9.881112787 |
| 145.60 | 10.8598 | -2.0535 | -2.0581 | 10.19231355 | 10.16894805 |
| 146.40 | 10.8396 | -2.0897 | -2.0531 | 10.19016384 | 10.17169774 |
| 147.20 | 10.3411 | -2.5892 | -2.7161 | 9.437693045 | 9.574288845 |
| 148.00 | 10.1682 | -2.7440 | -2.7252 | 9.408286151 | 9.392292651 |
| 148.80 | 10.4312 | -2.4774 | -2.4081 | 9.79993444 | 9.67248044 |
| 149.60 | 11.1054 | -1.8015 | -1.7468 | 10.52887381 | 10.44524801 |
| 150.40 | 10.9527 | -1.9540 | -1.9272 | 10.34188617 | 10.33444037 |
| 151.20 | 10.3938 | -2.5121 | -2.4870 | 9.969389872 | 9.670622072 |
| 152.00 | 10.0649 | -2.8426 | -2.8004 | 9.303334237 | 9.210159837 |
| 152.80 | 10.0625 | -2.8467 | -2.8216 | 9.28854158 | 9.218848958 |
| 153.60 | 10.9988 | -1.8028 | -1.8725 | 10.41448511 | 10.35928111 |
| 154.40 | 10.6115 | -2.2663 | -2.2781 | 9.98289159 | 9.88084519 |
| 155.20 | 9.9906 | -2.9172 | -2.9040 | 9.232475278 | 9.223703778 |
| 156.00 | 9.5977 | -3.3441 | -3.3780 | 8.631205461 | 8.638550261 |
| 156.80 | 9.6287 | -3.2796 | -3.2513 | 8.78514206 | 8.71267446 |
| 157.60 | 9.8245 | -2.9870 | -2.9418 | 9.261546722 | 9.16032622 |
| 158.40 | 10.3302 | -2.5753 | -2.5254 | 9.689105406 | 9.611893206 |
| 159.20 | 9.7828 | -3.1165 | -3.0783 | 9.083578478 | 9.043654878 |
| 160.00 | 9.6837 | -3.2248 | -3.1909 | 8.886140831 | 8.848970031 |
| 160.80 | 9.8528 | -3.2572 | -3.1940 | 9.911378848 | 9.816688548 |
| 161.60 | 10.0687 | -2.8443 | -2.7812 | 9.426544062 | 9.330216262 |
| 162.40 | 10.1786 | -2.7300 | -2.6757 | 9.551188073 | 9.480808673 |
| 163.20 | 10.1639 | -2.7477 | -2.7008 | 9.480541232 | 9.421341632 |
| 164.00 | 9.7690 | -3.1477 | -3.1004 | 9.014170048 | 8.932272048 |
| 164.80 | 9.8200 | -3.0928 | -3.0789 | 9.029248704 | 8.974455004 |
| 165.60 | 9.8428 | -3.2687 | -3.3014 | 8.77746016 | 8.78549886 |
| 166.40 | 10.1895 | -2.7244 | -2.8486 | 9.286234378 | 9.404854578 |
| 167.20 | 10.4734 | -2.4413 | -2.8359 | 9.343438032 | 9.591399132 |
| 168.00 | 10.5109 | -2.4007 | -2.8911 | 9.239584312 | 9.733901412 |
| 168.80 | 10.4358 | -2.4741 | -3.1097 | 9.677928285 | 9.610299785 |
| 169.60 | 10.2394 | -2.6723 | -2.7157 | 9.382580716 | 9.427808916 |
| 170.40 | 9.7855 | -3.1266 | -3.1283 | 8.953232776 | 8.921142476 |
| 171.20 | 10.1972 | -2.7086 | -2.7452 | 9.354368723 | 9.390848423 |
| 172.00 | 10.4727 | -2.4353 | -2.4847 | 9.658711115 | 9.675122015 |
| 172.80 | 9.8564 | -2.9546 | -3.0205 | 9.054821716 | 9.10789416 |
| 173.60 | 9.8533 | -3.0535 | -3.0679 | 9.655593372 | 9.002038172 |
| 174.40 | 10.0012 | -2.9077 | -2.8314 | 9.10793709 | 9.13874748 |
| 175.20 | 10.0303 | -2.8807 | -2.8791 | 9.175037865 | 9.172080865 |
| 176.00 | 9.8435 | -3.0670 | -3.0647 | 8.9984844 | 8.990178 |
| 176.80 | 9.9023 | -3.0076 | -3.0454 | 9.003381543 | 9.046049543 |
| 177.60 | 9.7478 | -3.1641 | -3.1713 | 8.824558927 | 8.880734327 |
| 178.40 | 10.0611 | -2.8518 | -3.0974 | 9.625458423 | 9.191780023 |
| 179.20 | 9.8826 | -3.0488 | -3.1822 | 8.845248548 | 9.980053448 |
| 180.00 | 10.3755 | -2.5384 | -3.0120 | 9.029815844 | 9.524103744 |
| 180.80 | 10.5314 | -2.3831 | -3.0691 | 9.820277037 | 9.869018137 |
| 181.60 | 9.9880 | -2.9225 | -3.4418 | 8.533230484 | 9.086123884 |
| 182.40 | 10.5806 | -2.3181 | -3.3588 | 8.640489768 | 9.714027368 |
| 183.20 | 10.2080 | -2.7072 | -3.1000 | 9.850815175 | 9.354088475 |
| 184.00 | 10.2501 | -2.8607 | -2.9562 | 9.133575293 | 9.424542593 |
| 184.80 | 10.1688 | -2.7125 | -2.7617 | 9.378246845 | 9.427821345 |
| 185.60 | 10.0237 | -2.8884 | -2.9445 | 9.174109124 | 9.221868424 |
| 186.40 | 10.1178 | -2.7659 | -2.8354 | 9.289582295 | 9.328865895 |
| 187.20 | 9.9116 | -2.8994 | -3.0523 | 9.085384894 | 9.119477464 |
| 188.00 | 10.2098 | -2.7005 | -2.7483 | 9.434581485 | 9.468879185 |
| 188.80 | 10.6880 | -2.2278 | -2.2225 | 10.009038823 | 10.00143813 |
| 189.60 | 10.7574 | -2.1584 | -2.1584 | 10.08530002 | 10.08454792 |
| 190.40 | 10.5986 | -2.3148 | -2.3551 | 9.848088812 | 9.869417112 |

| | | | | | |
|--------|---------|---------|---------|-------------|-------------|
| 181.20 | 10.8515 | -2.2597 | -2.5395 | 9.596112581 | 9.835388381 |
| 182.00 | 10.3762 | -2.5347 | -2.8489 | 9.233843018 | 9.509987518 |
| 182.80 | 10.7083 | -2.2067 | -2.5091 | 9.927841926 | 9.939343326 |
| 183.60 | 10.8837 | -2.0458 | -2.3240 | 9.834861264 | 10.07647596 |
| 184.40 | 10.7557 | -2.1589 | -2.4970 | 9.840362477 | 9.959875877 |
| 185.20 | 10.2193 | -2.6975 | -2.8702 | 9.178648947 | 9.353596347 |
| 186.00 | 9.8135 | -3.1019 | -3.1988 | 8.758904457 | 8.849940857 |
| 186.80 | 9.5998 | -3.3150 | -3.3476 | 8.563703458 | 8.588409458 |
| 187.60 | 9.6098 | -3.3054 | -3.2870 | 8.621510827 | 8.592115427 |
| 188.40 | 9.4018 | -3.5132 | -3.5036 | 8.382574022 | 8.362881022 |
| 189.20 | 9.8133 | -3.3037 | -3.3083 | 8.618465337 | 8.628573137 |
| 200.00 | 9.5727 | -3.3428 | -3.3286 | 8.583992575 | 8.528602975 |
| 200.80 | 9.3390 | -3.5772 | -3.5687 | 8.288918047 | 8.284485547 |
| 201.60 | 9.2757 | -3.6425 | -3.6303 | 8.20791295 | 8.20144825 |
| 202.40 | 9.1883 | -3.7203 | -3.7082 | 8.123187399 | 8.108725599 |
| 203.20 | 9.0726 | -3.8420 | -3.8361 | 7.980378757 | 7.987916757 |
| 204.00 | 9.2989 | -3.6217 | -3.6117 | 8.264910727 | 8.246487927 |
| 204.80 | 9.7615 | -3.1578 | -3.1471 | 8.750031069 | 8.746040169 |
| 205.60 | 9.5844 | -3.3309 | -3.3189 | 8.547339897 | 8.538325497 |
| 206.40 | 9.8189 | -3.2975 | -3.2884 | 8.6038188 | 8.5929101 |
| 207.20 | 9.8157 | -3.3059 | -3.3010 | 8.612665198 | 8.590490598 |
| 208.00 | 9.8286 | -3.2908 | -3.2821 | 8.682428982 | 8.680478282 |
| 208.80 | 9.8952 | -3.0234 | -3.0145 | 8.853587078 | 8.864641578 |
| 209.60 | 10.0502 | -2.8666 | -2.8589 | 9.11055119 | 9.10742358 |
| 210.40 | 10.1977 | -2.7188 | -2.7033 | 9.208525342 | 9.198636042 |
| 211.20 | 9.9833 | -2.9544 | -2.9384 | 8.94524481 | 8.93983491 |
| 212.00 | 10.0197 | -2.8945 | -2.8813 | 9.001238918 | 8.998306918 |
| 212.80 | 10.1718 | -2.7425 | -2.7240 | 9.173380152 | 9.147048352 |
| 213.60 | 10.2939 | -2.6181 | -2.6015 | 9.326128482 | 9.309896882 |
| 214.40 | 10.3931 | -2.5179 | -2.4978 | 9.40018897 | 9.39856807 |
| 215.20 | 10.5424 | -2.3655 | -2.3485 | 9.591691957 | 9.581215557 |
| 216.00 | 10.5280 | -2.3849 | -2.3649 | 9.545030582 | 9.509073882 |
| 216.80 | 10.7628 | -2.1532 | -2.1237 | 9.803154612 | 9.724883912 |
| 217.60 | 10.5425 | -2.3716 | -2.3583 | 9.477087775 | 9.447100775 |
| 218.40 | 10.6178 | -2.2950 | -2.2767 | 9.529118206 | 9.504559306 |
| 219.20 | 10.6078 | -2.3078 | -2.2875 | 9.544223225 | 9.539591525 |
| 220.00 | 10.7875 | -2.1217 | -2.1098 | 9.74300038 | 9.74548638 |

N9029AV05 Conversion Loss Data

SAX 177 Conversion Loss

Note: Out of band data is not guaranteed to be accurate.

| Freq(GHz) | *A* LO/IF Input/Output | *B* Standard Input | *C* High Freq. Input | High Freq. Intrinsic Mixer Loss | Standard Freq. Intrinsic Mixer Loss |
|-----------|------------------------|--------------------|----------------------|---------------------------------|-------------------------------------|
| 110 | 11.68394112 | -3.383088078 | -3.284527878 | 10.15474872 | 10.08337012 |
| 110.6 | 11.57308777 | -3.498883729 | -3.668183529 | 9.794878271 | 9.864229971 |
| 111.2 | 11.991107 | -3.0770951 | -3.2918364 | 9.878260 | 10.1049851 |
| 111.8 | 11.86779416 | -3.074688438 | -2.975434636 | 10.08663266 | 10.02446926 |
| 112.4 | 11.00529689 | -4.06890307 | -4.025038407 | 9.299938593 | 9.237336893 |
| 113 | 10.8832281 | -4.210285897 | -4.217390887 | 9.255584503 | 9.263078203 |
| 113.6 | 10.91497407 | -4.182371434 | -4.168123534 | 9.318568966 | 9.329251366 |
| 114.2 | 10.99089864 | -4.084286657 | -4.083900257 | 9.409154243 | 9.409753843 |
| 114.8 | 11.06061626 | -4.015065241 | -4.004458541 | 9.432365059 | 9.428758159 |
| 115.4 | 11.35193185 | -3.720165048 | -3.648222748 | 9.542657852 | 9.46904952 |
| 116 | 11.41763792 | -3.654806184 | -3.617458484 | 9.614491316 | 9.600050416 |
| 116.6 | 11.46837949 | -3.609815605 | -3.612824805 | 9.744008295 | 9.748827795 |
| 117.2 | 11.24394817 | -3.832973226 | -3.858841326 | 9.598371174 | 9.626489574 |
| 117.8 | 12.13468057 | -2.839075634 | -2.967255634 | 10.82188057 | 10.64800317 |
| 118.4 | 11.81514805 | -3.261698348 | -3.283169949 | 10.28307455 | 10.31977575 |
| 119 | 11.07245991 | -4.001813685 | -4.040085185 | 9.433749615 | 9.475085215 |
| 119.6 | 10.6021445 | -4.475087598 | -4.462485498 | 8.848882102 | 8.848784602 |
| 120.2 | 10.67841275 | -4.398393646 | -4.396865446 | 8.914752254 | 8.901209254 |
| 120.8 | 10.54034829 | -4.535781244 | -4.503172944 | 8.739081458 | 8.713703958 |
| 121.4 | 10.43898939 | -4.639304805 | -4.641873005 | 8.723823495 | 8.731438295 |
| 122 | 10.73766783 | -4.34008807 | -4.38364627 | 9.06399843 | 9.08444773 |
| 122.6 | 11.18180133 | -3.89750617 | -3.93439927 | 9.60312263 | 9.60526233 |
| 123.2 | 10.98592437 | -4.09134683 | -4.13101813 | 9.38273377 | 9.42817707 |
| 123.8 | 10.80572598 | -4.473785537 | -4.509993337 | 8.908536663 | 8.951818863 |
| 124.4 | 10.28158773 | -4.814082967 | -4.814839667 | 8.527585333 | 8.547649433 |
| 125 | 10.29704807 | -4.778142334 | -4.744798034 | 8.503953466 | 8.487753966 |
| 125.6 | 10.2834205 | -4.784598796 | -4.769808196 | 8.504213204 | 8.500809604 |
| 126.2 | 10.14617007 | -4.930938233 | -4.935063433 | 8.412498067 | 8.427475267 |
| 126.8 | 10.32517229 | -4.753985515 | -4.792939815 | 8.680832985 | 8.723357985 |
| 127.4 | 10.72703083 | -4.350890908 | -4.391482608 | 9.108328532 | 9.151334732 |
| 128 | 10.59088882 | -4.488057181 | -4.554195581 | 8.916502319 | 8.999888219 |
| 128.6 | 10.29146755 | -4.789938747 | -4.852441347 | 8.543852553 | 8.621782953 |
| 129.2 | 10.13747132 | -4.940275894 | -4.954622484 | 8.358197716 | 8.383355816 |
| 129.8 | 10.13804141 | -4.84301379 | -4.92917289 | 8.31752111 | 8.31847441 |
| 130.4 | 10.05111355 | -5.02571786 | -4.98910986 | 8.20328895 | 8.18415085 |
| 131 | 9.844265812 | -5.134197988 | -5.131907288 | 8.135169812 | 8.144953112 |
| 131.6 | 9.819267082 | -5.158011838 | -5.171745638 | 8.150525982 | 8.171902982 |
| 132.2 | 10.21798389 | -4.894699005 | -4.889313705 | 8.468845105 | 8.501053985 |
| 132.8 | 10.1754814 | -4.901746698 | -4.933994598 | 8.420893002 | 8.464122902 |
| 133.4 | 10.13621303 | -4.942454274 | -4.951791874 | 8.302748726 | 8.328287426 |
| 134 | 10.12951225 | -4.94837545 | -4.969588725 | 8.29808545 | 8.33451345 |
| 134.6 | 10.18168064 | -4.894831257 | -4.906888757 | 8.344387243 | 8.367777443 |
| 135.2 | 9.871954356 | -5.104816044 | -5.117878744 | 8.110247356 | 8.131887956 |
| 135.8 | 9.807437588 | -5.268872504 | -5.278411704 | 7.954848998 | 7.978883298 |
| 136.4 | 9.697843456 | -5.378428544 | -5.403232944 | 7.851468756 | 7.883915856 |
| 137 | 9.680205948 | -5.118276252 | -5.148837452 | 8.127309348 | 8.165217948 |
| 137.6 | 9.825817484 | -5.151427518 | -5.178410318 | 8.081951784 | 8.116321984 |
| 138.2 | 9.819354108 | -5.158658792 | -5.188698192 | 8.073004208 | 8.116487708 |
| 138.8 | 10.23777035 | -4.839845354 | -4.868235954 | 8.398365246 | 8.432570246 |
| 139.4 | 10.13989518 | -4.938238138 | -4.967744738 | 8.274453482 | 8.312944482 |
| 140 | 10.08040165 | -4.986442152 | -5.018328252 | 8.192915048 | 8.227040348 |
| 140.6 | 9.889714896 | -5.087688934 | -5.109378534 | 8.100458896 | 8.134620996 |
| 141.2 | 10.12940486 | -4.947642842 | -4.968378442 | 8.259190758 | 8.291700658 |
| 141.8 | 10.2503636 | -4.827805798 | -4.852789398 | 8.392201804 | 8.427210904 |
| 142.4 | 10.18997487 | -4.908530031 | -4.930509131 | 8.324533469 | 8.352955969 |
| 143 | 10.1487116 | -4.93024597 | -4.956637797 | 8.273785103 | 8.313147903 |
| 143.6 | 10.05827483 | -5.017684267 | -5.046291167 | 8.207837633 | 8.246257233 |
| 144.2 | 10.0938837 | -4.983466698 | -5.011733298 | 8.256377602 | 8.294802302 |
| 144.8 | 10.08778994 | -4.988928883 | -5.021805183 | 8.258250237 | 8.303108537 |
| 145.4 | 10.14393933 | -4.933785974 | -4.951388974 | 8.297843826 | 8.33028026 |
| 146 | 10.18876762 | -4.879804076 | -4.918414776 | 8.415587724 | 8.465679124 |
| 146.6 | 10.33885906 | -4.738089742 | -4.788201342 | 8.598551658 | 8.657989158 |
| 147.2 | 10.28622714 | -4.777755558 | -4.824343158 | 8.547858041 | 8.605455341 |
| 147.8 | 10.40400017 | -4.872716727 | -4.722047827 | 8.653449973 | 8.716958773 |

Note: Out of band data is not guaranteed to be accurate.

| | | | | | |
|-------|-------------|--------------|---------------|-------------|-------------|
| 148.4 | 10.41871373 | -4.055984760 | -4.701166660 | 8.660555834 | 8.716235734 |
| 149 | 10.61704695 | -4.45934625 | -4.48827305 | 8.89344215 | 8.94056145 |
| 148.8 | 10.78381732 | -4.287180677 | -4.320787077 | 8.082489423 | 8.136747823 |
| 150.2 | 10.91422647 | -4.154844781 | -4.201813631 | 8.243606769 | 8.303173669 |
| 150.6 | 10.89764612 | -4.177070275 | -4.218218975 | 8.226124325 | 8.279521225 |
| 151.4 | 11.03332666 | -4.045804506 | -4.112178806 | 8.321604294 | 8.394774394 |
| 152 | 11.04539127 | -4.023083433 | -4.088204333 | 8.332892267 | 8.418491067 |
| 152.6 | 10.64528085 | -4.429078151 | -4.489856051 | 8.671868749 | 8.857024449 |
| 153.2 | 10.29146891 | -4.782218881 | -4.833392881 | 8.478825506 | 8.549272806 |
| 153.8 | 10.18746393 | -4.888304071 | -4.921833271 | 8.364828529 | 8.417200029 |
| 154.4 | 10.26668537 | -4.806173332 | -4.839881932 | 8.439652768 | 8.487441668 |
| 155 | 10.18598004 | -4.810518985 | -4.940348465 | 8.306379035 | 8.353188035 |
| 155.6 | 10.2246958 | -4.8492024 | -4.8673778 | 8.3736428 | 8.4067188 |
| 156.2 | 9.984389189 | -5.091953101 | -5.095343001 | 8.100506999 | 8.112460399 |
| 156.8 | 9.936263262 | -5.139303038 | -5.149130538 | 8.058394362 | 8.078223262 |
| 157.4 | 10.10350448 | -4.974325217 | -4.976439617 | 8.203510993 | 8.217241383 |
| 158 | 10.01580289 | -5.059739813 | -5.066429713 | 8.083063087 | 8.101883287 |
| 158.6 | 10.04992727 | -5.026637634 | -5.021229834 | 8.134156166 | 8.143541066 |
| 159.2 | 9.999188809 | -5.079774791 | -5.0732828391 | 8.084533109 | 8.091975109 |
| 159.8 | 10.28292388 | -4.811482617 | -4.825544117 | 8.400794483 | 8.422885683 |
| 160.4 | 10.42051026 | -4.654485639 | -4.674805839 | 8.635616881 | 8.668203961 |
| 161 | 10.40855468 | -4.698038023 | -4.638050523 | 8.649440877 | 8.684748877 |
| 161.6 | 10.5859407 | -4.4875449 | -4.5083604 | 8.832814 | 8.8608311 |
| 162.2 | 10.58910213 | -4.485138268 | -4.500858168 | 8.781372232 | 8.810040232 |
| 162.8 | 10.23460207 | -4.841260135 | -4.794720735 | 8.361583565 | 8.333323865 |
| 163.4 | 10.76013128 | -4.315841219 | -4.243530019 | 8.800806881 | 8.745507281 |
| 164 | 10.7436443 | -4.331569504 | -4.306102904 | 8.816904796 | 8.812478396 |
| 164.6 | 10.39266314 | -4.682340061 | -4.690630261 | 8.508988339 | 8.529003439 |
| 165.2 | 10.73900094 | -4.330418604 | -4.350848504 | 8.812247498 | 8.840071698 |
| 165.8 | 10.7744961 | -4.2844993 | -4.3188387 | 8.971459 | 9.0040597 |
| 166.4 | 10.66898975 | -4.404105245 | -4.414225945 | 8.851824455 | 8.868804855 |
| 167 | 10.6084867 | -4.483356295 | -4.459720395 | 8.744884205 | 8.740988805 |
| 167.8 | 11.01030085 | -4.082801647 | -4.067298247 | 8.001789853 | 8.007694853 |
| 168.2 | 11.72842324 | -3.347318768 | -3.306085868 | 8.653628442 | 8.818054842 |
| 168.8 | 11.39978122 | -3.674836979 | -3.634377579 | 8.362207421 | 8.329430421 |
| 169.4 | 11.05544431 | -4.015085485 | -3.982721985 | 9.104862415 | 9.094423915 |
| 170 | 11.12089528 | -3.951708841 | -3.952433341 | 9.228127259 | 9.237707659 |



中国赛宝实验室计量检测中心
(工业和信息化部电子第五研究所计量检测中心)
CHINA CEPREI LABORATORY CALIBRATION & TESTING CENTRE

校准证书

CALIBRATION CERTIFICATE

证书编号: 1JA21004691-0001

Certificate No.



中国认可
国际互认
校准
CALIBRATION
CNAS L13344

| | | | |
|----------------------|--------------------------------------|----------------------------------|-----------------|
| 委托单位: Client | 曼瑞检测科技(苏州)有限公司 | | |
| 委托方地址: Address | 苏州市吴中区天鹅荡路2号D8幢 | | |
| 仪器名称: Description | PX A Signal Analyzer | | |
| 型号规格: Model/Type | N9030B | | |
| 制造商: Manufacturer | KEYSIGHT | | |
| 机身号: Serial No. | MY57140549 | | |
| 管理号: Asset No. | MRTSUE06395 | | |
| 接收日期: Rec. Date | 2021-08-09 | 校准日期: Cal. Date | 2021-08-09 |
| 签发日期: App. Date | 2021-08-16 | 建议校准周期: Reference Cal. Period | 12个月(12 months) |
| 结论: Conclusion | 所校准项目合格(Passed at Calibration Items) | | |

 校准:
Calibrated by

 核验:
Inspected by

 签发:
Approved by

 印章:
Stamp

赛宝计量检测中心
广州总部地址: 广州市增城区朱村街朱村大道西78号
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