

Milliwave Silicon Solutions



MilliBox™

2-AXIS 360° MMWAVE RADIATION PATTERN TEST CHAMBER



APPLICATIONS

5G (NR) mmWave | 60GHz, 802.11ad, 802.11ay
77GHz automotive radar | Other proprietary mmWave designs

KEY FEATURES

Compact form factor, fits on lab bench:
4' x 3' x 2' WHD

Economical solution

Accurate laser guided calibration:
0.1° in horizontal and vertical plane

High resolution capture, up to 1° x 360
x180, 64000 points

Gimbal motor control, open software
interface Python® and MATLAB

USES

Beamforming 3D capture

Over-the-air RF measurements

Antenna-array performance test

Beam-steering algorithms design and validation

Angle coverage assessment

In-system antenna placement

Production test

mmWave academic research

Compliance testing

©2019 Milliwave Silicon Solutions, Inc. All rights reserved.

MilliBox is a trademark of Milliwave Silicon Solutions, Inc. All information subject to change without prior notice.

802.11, 5G, Python, USB rights belong to their respective owners



SOUTH CALIFORNIA
 10966 Bluffside Dr. #2
 Studio City, CA 91604
 310-882-8809
 www.quantumflow.co

MILLIWAVE SILICON SOLUTIONS
 429 Camille Cir. Unit 17,
 San Jose, CA 95134 USA
 408-892-9595
 millibox@milliwavess.com
 www.millibox.org

EMEA & INDIA
 mmWave Test Solutions
 Harrestrup Allé 16
 DK-2500 Valby Denmark
 +45 2163 0226
 info@mmwavetest.com
 www.mmwavetest.com

TECHNICAL SPECIFICATIONS

| | |
|------------------------------------|--|
| MilliBox-2 Outside Dimensions..... | 989mm x 1320mm x 685mm(39"x 52"x 27") HWD |
| Far-field Distance | MilliBox-2: 795mm, MilliBox-3: 1400 mm, MilliBox-4: 2050 mm |
| Maximum DUT Dimension | 40mm x 200mm x 110mm (1.5 "x 7.9" x 4.3") THW, DUT weight up to 500 gram |
| Motor Specification..... | 2x servos, stall torque 6Nm, 63rpm (no load), absolute encoder |
| DUT Mounting | 16 x M6 holes Ø6.2mm (1/4") |
| Power Consumption | 10A Max at 12V (AC/DC supply 100V to 240V provided) |
| 3D Capture Resolution | 1° resolution : 64000 points captured for full 3D plot |
| Motor Control Resolution..... | H plane 0.088°/step , V plane: 0.0176°/step |
| Gimbal Angle Limit | H plane -180° +180°, V plane -180° +180° |
| Gimbal Material | PLA+, tensile strength 60MPa, Nylon PA 6/6 bolts |
| Gimbal Bearing..... | Base: 8 x 608ZZ bearings, Platform: 1 x 6006 Bearing |
| Wiring Through Bearing..... | Maximum cable diameter Ø18mm (0.7") |
| Frame Material | PLA+ joints, 25.4mm (1")PVC Sch.40, 9mm (0.7") FSC Plywood |
| Door Size..... | 2x 584mm x 584mm (23"), reassignable door and hinges |
| Absorber Type | Carbon loaded for mmWave 101mm(4") thick, convoluted, FR |
| Absorber Performance | -50dB rated 18GHz to 95GHz at nominal incidence |
| Below Deck Instrument Size | 2 bays 300mm x 500mm x 580mm (12" x 20"x 23") HWD |
| Motor Control Interface..... | 1x USB2.0 to TTL dongle provided |
| Laser Type..... | Adjustable focus 650nm 5mW crosshair |
| Manufacturer Warranty..... | 1 year all part replacement |
| Origin..... | Made in USA with domestic and imported components |