

OTA Product Catalog

| | |
|-------------------------|---------|
| Shield Box | MA8161A |
| RF Chamber | MA8171A |
| CATR Anechoic Chamber | MA8172A |
| CATR Anechoic Chamber 2 | MA8172B |





OTA Products



for 5G NR DUT Tests

5 G network testing is not the same as testing 4G architectures, or any other previous wireless network type.

Traditionally, network engineers confirm base transceiver stations (BTS) and antennas are functioning properly and transmitting the design signal strength by connecting test instruments using a coaxial cable to the base station RF connector.

However, new 5G services use the sub-6 GHz and mmWave bands, and 3GPP recommends using over-the-air (OTA) call connections to test the mmWave band, requiring an OTA RF chamber for stable measurement.

Anritsu's reasonably priced OTA products support this wide frequency band with easy setup for shorter test times.

*DUT=Device under test



Anritsu OTA Products Features

Wide Product Line Supporting Function to 3GPP Conformance Tests

MA8161A Shield Box

Supports simple OTA test environment for 5G/LTE protocol R&D tests, PCT/CAT pre-tests, etc.

- Small footprint for easy benchtop use and good handling
- Regression testing, etc., for 5G UE development stage
- Supports both sub-6 GHz and mmWave bands



MA8171A RF Chamber

Supports OTA environment for integrated RF/protocol tests, such as 5G NR mmWave beamforming management tests, etc.

- For development of 5G NR chipsets and devices as well as UE mmWave development
- Supports 5G NR mmWave RF ERP/TIRP measurements, etc.
- Both 5G NR Standalone (SA) and Non-standalone (NSA) modes



MA8172A CATR Anechoic Chamber/ MA8172B CATR Anechoic Chamber 2

Supports 5G NR OTA environment using 3GPP-compliant Compact Antenna Test Range (CATR) method

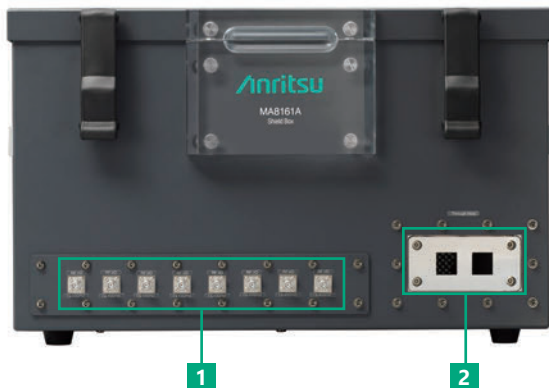
- For mmWave development of 5G NR chipsets and devices, and UE conformance tests
- Supports 5G NR mmWave spurious tests
- Three component parts for easy transport and quick setup
- MA8172A can be upgraded to MA8172B at customer on site
- Supports 2 AoA (Angle of Arrival) with MA8172B



Anritsu OTA Products Layout

Shield Box MA8161A

Front



Rear



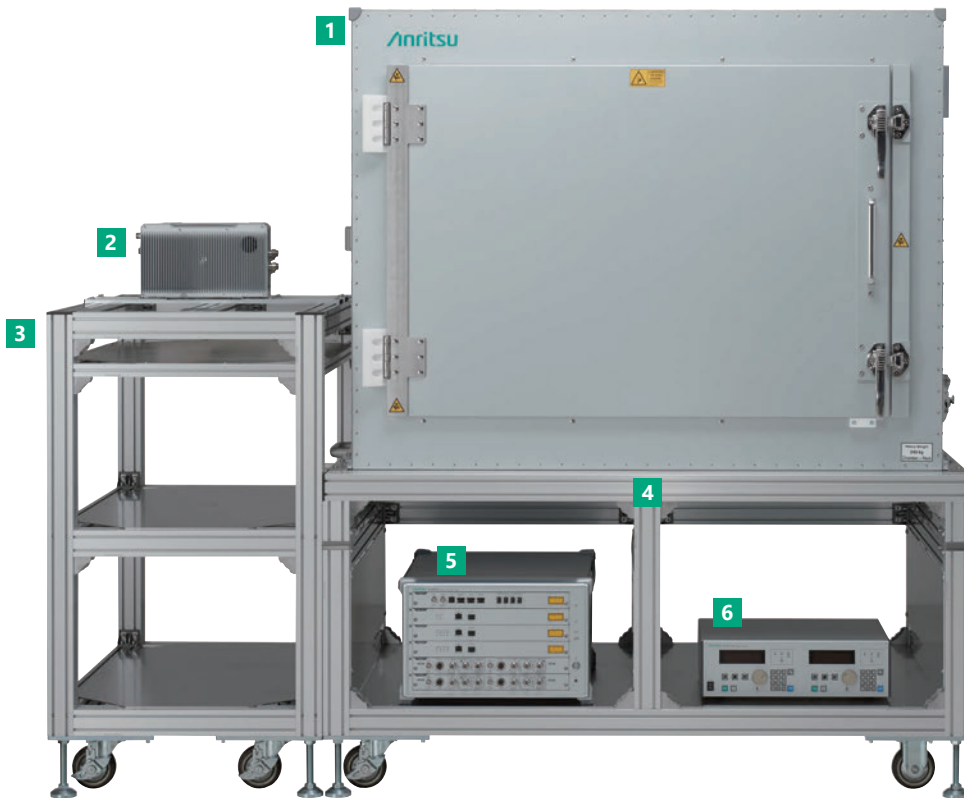
- 1** SMA (f) connector × 8
- 2** Through hole × 2
- 3** Ventilation hole × 2
- 4** K (f) connector × 8

* Example selecting MA8161A-002

Anritsu OTA Products Layout

RF Chamber MA8171A

Setup Example



1 RF Chamber MA8171A

2 28 GHz RF Converter MA80001A/
39 GHz RF Converter MA80002A

3 Converter Rack B0747A

4 Chamber Rack B0746A

5 Radio Communication Test Station MT8000A

6 Position Controller MA8174A

Door Opening



7 Test Antenna

8 Positioner MA8175A

Anritsu OTA Products Layout

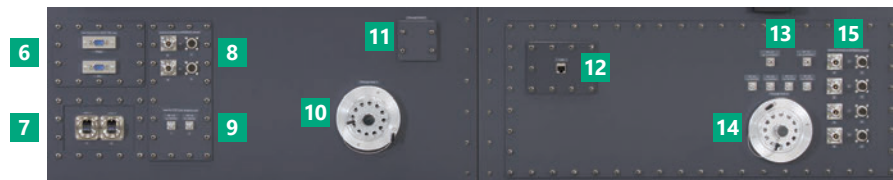
CATR Anechoic Chamber MA8172A

Front



- 1 Door
- 2 Sealing handles
- 3 Handle
- 4 Ventilation hole
- 5 Position Controller MA8178A

Enlarged View

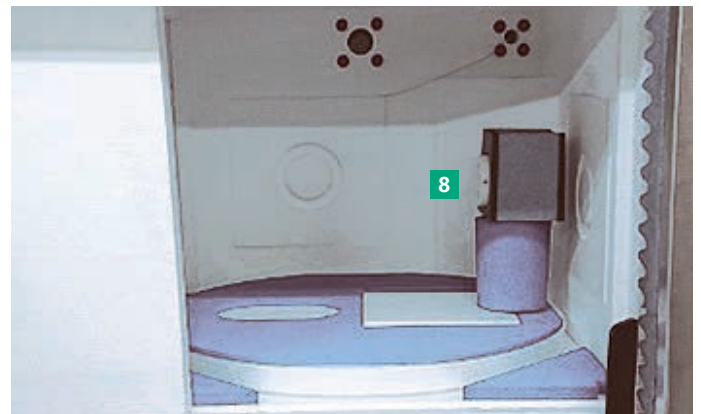
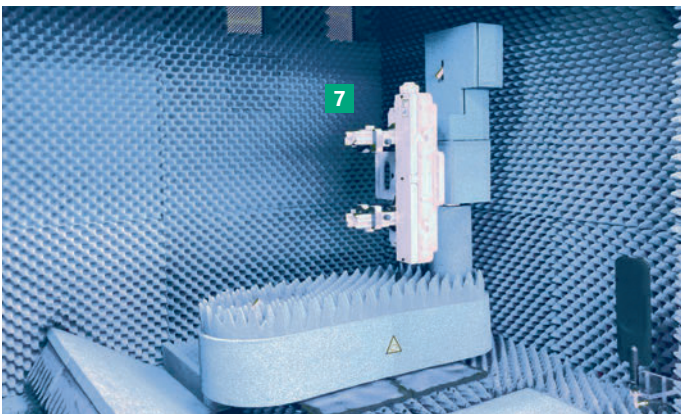
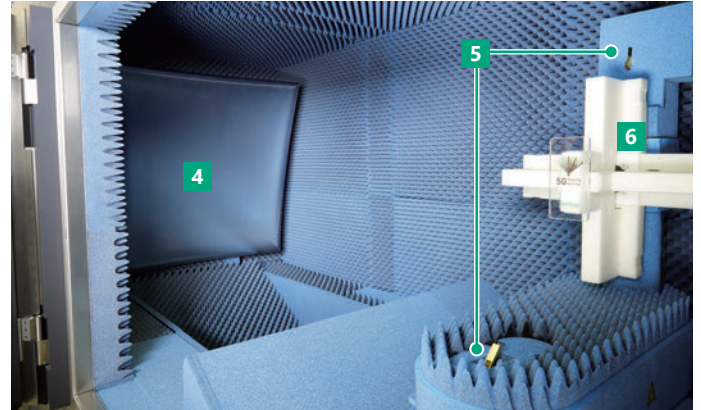
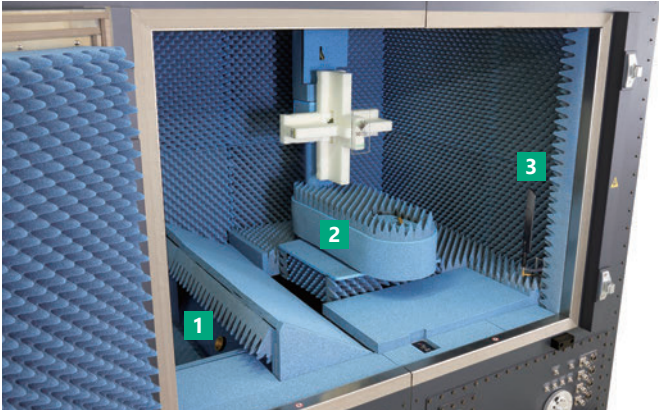


- 6 Connect to MA8178A (Theta/Phi)
- 7 USB3.0
- 8 Connect to MT8000A (5, 6)
- 9 For LTE Link Antenna
- 10 Through Hole 1
- 11 Through Hole 2
- 12 LAN
- 13 RF I/O
- 14 Through Hole 3
- 15 Connect to MT8000A (1, 2, 3, 4)

Anritsu OTA Products Layout

CATR Anechoic Chamber MA8172A (continued)

Insides



- 1 Feed antenna
- 2 Positioner MA8179A
- 3 LTE Link Antenna Kit MA8172A-AK023
- 4 Reflector

- 5 NR FR2 Link Antenna Kit MA8172A-AK022
- 6 DUT-supporting structure MA8179A-AK010
- 7 DUT Holder MA8179A-AK011
- 8 Temperature Testing Option MA8172A-010

Rear



- 1 Ventilation hole
- 2 Fans

Anritsu OTA Products Specifications

Shield Box MA8161A

Shield Box MA8161A

| | | |
|----------------------------|--|---|
| Electrical Characteristics | Shielding characteristics: without cable connection via USB connector or Through Hole ≥ 50 dB (600 MHz \leq frequency \leq 6 GHz) ≥ 50 dB (24 GHz < frequency \leq 43.5 GHz) (nom.) | |
| Input/Output Connector | When Connector Panel 2 MA8161A-002 is selected SMA (f) — SMA (f): 8 K (f) — K (f): 8 Through Hole: 2 | |
| Dimensions and Mass | Outer dimensions: 434 (W) \times 271 (H) \times 328 (D) mm (excluding projections) Mass: ≤ 16 kg (Full option configuration) Maximum test UE size: 300 (W) \times 50 (H) \times 200 (D) mm (set the UE antenna face down) Maximum test UE mass: ≤ 1 kg Ventilation hole: 2 | |
| Environmental Conditions | Operating temperature range: +5°C to +40°C Storage temperature range: -20°C to +60°C (without condensation) | |
| CE | RoHS | 2011/65/EU, (EU) 2015/863, EN IEC 63000: 2018 |
| UKCA | RoHS | S.I. 2012 No.3032, EN IEC 63000: 2018 |

Anritsu OTA Products Specifications

RF Chamber MA8171A

RF Chamber MA8171A

| | | |
|----------------------------|---|---|
| Electrical Characteristics | Shielding characteristics ≥ 70 dB (800 MHz \leq frequency \leq 3.8 GHz) (nom.) ≥ 60 dB (24 GHz \leq frequency \leq 40 GHz) (nom.) Anechoic performance Reflected wave Level by free space standing wave ratio method in QZ (quiet zone) in ϕ 300 mm sphere ≥ 30 dB (24 GHz \leq frequency \leq 40 GHz) (nom.) | |
| General | External Interface RF connection: K (f) \times 2 SMA (f) \times 4 UE connection: USB 2.0 (type-A) (f) \times 2 Position Controller: mini D-Sub 15 pin (m) \times 2 Internal interface RF connection: K (f) \times 2 SMA (f) \times 4 UE connection: USB 2.0 (type-A) (f) \times 2 Positioner connection: mini D-Sub 15 pin (f) \times 2 Through sleeve pipe: 1 (ϕ 50 mm) Door: Unilateral door (left side opening) Outside door size: 1100 (W) \times 800 (H) mm Aperture: 1000 (W) \times 700 (H) mm Blank panel: 6 Ventilation hole: 2 | |
| Dimensions and Mass | Outer dimensions: 1460 (W) \times 1210 (H) \times 1000 (D) mm (excluding projections) Effective inner dimension: 1100 (W) \times 800 (H) \times 650 (D) mm (Inside dimension with radio wave absorber stuck) Mass: \leq 150 kg Outer dimensions (with chamber rack): 1460 (W) \times 1785 (H) \times 1000 (D) mm (including casters, excluding projections) Mass (with chamber rack): \leq 240 kg | |
| CE | RoHS | 2011/65/EU, (EU) 2015/863, EN IEC 63000: 2018 |
| UKCA | RoHS | S.I. 2012 No.3032, EN IEC 63000: 2018 |

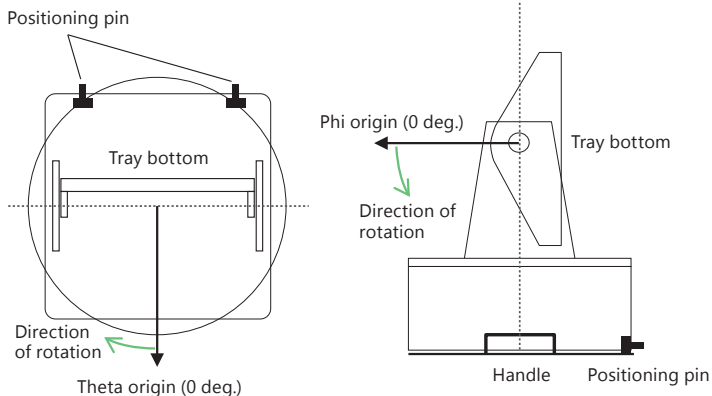
Position Controller MA8174A

| | | |
|--------------------------|---|---|
| External Interface | GPIO Trigger output: BNC (5 V, TTL, negative logic, pulse width 20 μ s) \times 1 Control connector: mini D-Sub 15 pin (f) \times 2 | |
| Dimensions and Mass | Dimensions: 434 (W) \times 141 (H) \times 363 (D) mm Mass: \leq 15 kg Rated voltage: 100 VAC to 120 VAC/200 VAC to 240 VAC Rated frequency: 50 Hz to 60 Hz Power consumption: \leq 110 VA (when Positioner MA8175A connected) | |
| Environmental Conditions | Operating temperature range: +5°C to +40°C (without condensation) Operating humidity range: \leq 85% (without condensation) Storage temperature range: -20°C to +60°C (without condensation) Storage humidity range: \leq 85% (without condensation) | |
| CE | EMC | 2014/30/EU, EN61326-1, EN61000-3-2 |
| | LVD | 2014/35/EU, EN61010-1 |
| | RoHS | 2011/65/EU, (EU) 2015/863, EN IEC 63000: 2018 |
| UKCA | EMC | S.I. 2016 No.1091, EN 61326-1, EN61000-3-2 |
| | LVD | S.I. 2016 No.1101, EN 61010-1 |
| | RoHS | S.I. 2012 No.3032, EN IEC 63000: 2018 |

Anritsu OTA Products Specifications

RF Chamber MA8171A (continued)

Positioner MA8175A

| | | | | | | | | | |
|---|--|-----|--|-----|-------------------------------|------|---|-----------|-----------------------|
| <p>General</p> | <p>Axis of rotation: 2 (Theta: Horizontal rotation, Phi: Vertical rotation) Rotational speed: 1.0 rpm to 15.0 rpm, 0.1 rpm step (nom.) Rotation angle resolution (Setting resolution): 0.1 deg. (nom.) Stop precision (Reproducibility): Specified stopping precision reproducibility when the center of gravity of UE of 1 kg or less is at rotation center</p> <p>Theta: ± 0.5 deg. (nom.) Phi: ± 0.5 deg. (nom.)</p> <p>Angle of rotation Theta: -20.0 deg. to 380.0 deg. (finite rotation) Phi: 0.0 to 359.9 deg. (infinite rotation), -720.0 deg. to 720.0 deg. (finite rotation)</p> <p>Angle origin Theta: According to figure below (left) Phi: According to figure below (right)</p>  <p>Allowable torque: $10 \text{ N} \cdot \text{m}$ (nom.) UE allowable size: Tray size within 400×400 mm, 200 mm or less from the bottom of the tray UE allowable mass: 1 kg Noise: ≤ 70 dB (Conforms to Machinery Directive 2006/42/EC Annex I)</p> | | | | | | | | |
| <p>External Connector</p> | <p>Theta: mini D-Sub 15 pin connector (m), 0.8 m from the end of the positioner body Phi: mini D-Sub 15 pin connector (m), 0.8 m from the end of the positioner body</p> | | | | | | | | |
| <p>Dimensions and Mass Power Supply</p> | <p>Dimensions: 600 (W) \times 715 (H) \times 600 (D) mm (excluding projections and cable) Tray size: 400 (W) \times 400 (D) mm (excluding projections and screw) 70 (depth) mm (from the center of rotation to the bottom of the tray) Mass: ≤ 25 kg Power: Supplied from Position Controller MA8174A</p> | | | | | | | | |
| <p>Environmental Conditions</p> | <p>Operating temperature range: $+5^\circ\text{C}$ to $+40^\circ\text{C}$ (without condensation) Operating humidity range: $\leq 85\%$ (without condensation) Storage temperature range: -20°C to $+60^\circ\text{C}$ (without condensation) Storage humidity range: $\leq 85\%$ (without condensation)</p> | | | | | | | | |
| <p>CE</p> | <table border="1"> <tr> <td data-bbox="239 1465 395 1501">EMC</td> <td data-bbox="395 1465 1508 1501">2014/30/EU, EN61326-1, EN61000-3-2</td> </tr> <tr> <td data-bbox="239 1501 395 1537">LVD</td> <td data-bbox="395 1501 1508 1537">2014/35/EU, EN61010-1</td> </tr> <tr> <td data-bbox="239 1537 395 1572">RoHS</td> <td data-bbox="395 1537 1508 1572">2011/65/EU, (EU) 2015/863, EN IEC 63000: 2018</td> </tr> <tr> <td data-bbox="239 1572 395 1600">Machinery</td> <td data-bbox="395 1572 1508 1600">2006/42/EC, EN60204-1</td> </tr> </table> | EMC | 2014/30/EU, EN61326-1, EN61000-3-2 | LVD | 2014/35/EU, EN61010-1 | RoHS | 2011/65/EU, (EU) 2015/863, EN IEC 63000: 2018 | Machinery | 2006/42/EC, EN60204-1 |
| EMC | 2014/30/EU, EN61326-1, EN61000-3-2 | | | | | | | | |
| LVD | 2014/35/EU, EN61010-1 | | | | | | | | |
| RoHS | 2011/65/EU, (EU) 2015/863, EN IEC 63000: 2018 | | | | | | | | |
| Machinery | 2006/42/EC, EN60204-1 | | | | | | | | |
| <p>UKCA</p> | <table border="1"> <tr> <td data-bbox="239 1600 395 1635">EMC</td> <td data-bbox="395 1600 1508 1635">S.I. 2016 No.1091, EN 61326-1, EN61000-3-2</td> </tr> <tr> <td data-bbox="239 1635 395 1671">LVD</td> <td data-bbox="395 1635 1508 1671">S.I. 2016 No.1101, EN 61010-1</td> </tr> <tr> <td data-bbox="239 1671 395 1701">RoHS</td> <td data-bbox="395 1671 1508 1701">S.I. 2012 No.3032, EN IEC 63000: 2018</td> </tr> </table> | EMC | S.I. 2016 No.1091, EN 61326-1, EN61000-3-2 | LVD | S.I. 2016 No.1101, EN 61010-1 | RoHS | S.I. 2012 No.3032, EN IEC 63000: 2018 | | |
| EMC | S.I. 2016 No.1091, EN 61326-1, EN61000-3-2 | | | | | | | | |
| LVD | S.I. 2016 No.1101, EN 61010-1 | | | | | | | | |
| RoHS | S.I. 2012 No.3032, EN IEC 63000: 2018 | | | | | | | | |

CATR Anechoic Chamber MA8172A

CATR Anechoic Chamber MA8172A
Spurious Measurement Kit 6 GHz-87 GHz MA8172A-003/-005
Temperature Testing Option MA8172A-010
Test Antenna MA8172A-021/-022/-023
Second Antenna MA8172A-033

| | |
|----------------------------|--|
| Electrical Characteristics | <p>Shielding characteristics: without cable connection via USB connector or Through Hole ≥ 60 dB (1 GHz \leq frequency \leq 6 GHz) ≥ 60 dB (600 MHz \leq frequency < 1 GHz, 6 GHz < frequency \leq 87 GHz) (nom.)</p> <p>Quiet Zone MA8179A: Specifies the flatness of the electric field amplitude and phase within a cylindrical area (QZ: quiet zone) with a diameter of 330 mm and a depth of 330 mm. MA8179B: Specifies the flatness of the electric field amplitude and phase within a cylindrical area (QZ: quiet zone) with a diameter of 400 mm and a depth of 400 mm.</p> <p>Amplitude taper MA8172A-021: ≤ 1.5 dB (23.4 GHz \leq frequency \leq 42 GHz) (nom.) (MA8179A) ≤ 2.0 dB (23.4 GHz \leq frequency \leq 42 GHz) (nom.) (MA8179B) MA8172A-022/-023: ≤ 1.5 dB (22.65 GHz \leq frequency \leq 32.125 GHz) (nom.) (MA8179A) ≤ 1.7 dB (32.125 GHz < frequency \leq 45.1 GHz) (nom.) (MA8179A) ≤ 2.2 dB (22.65 GHz \leq frequency \leq 32.125 GHz) (nom.) (MA8179B) ≤ 2.4 dB (32.125 GHz < frequency \leq 45.1 GHz) (nom.) (MA8179B) MA8172A-033: ≤ 1.5 dB (22.65 GHz \leq frequency \leq 32.125 GHz) (nom.) (MA8179A) ≤ 1.7 dB (32.125 GHz < frequency \leq 49.8 GHz) (nom.) (MA8179A) ≤ 2.2 dB (22.65 GHz \leq frequency \leq 32.125 GHz) (nom.) (MA8179B) ≤ 2.4 dB (32.125 GHz < frequency \leq 49.8 GHz) (nom.) (MA8179B) MA8172A-003/-005: ≤ 3 dB (6 GHz \leq frequency \leq 20 GHz) (nom.) (MA8179A) ≤ 1.5 dB (20 GHz < frequency \leq 87 GHz) (nom.) (MA8179A) ≤ 4 dB (6 GHz \leq frequency \leq 20 GHz) (nom.) (MA8179B) ≤ 2.5 dB (20 GHz < frequency \leq 87 GHz) (nom.) (MA8179B)</p> <p>Amplitude ripple MA8172A-021: ≤ 1.5 dB (23.4 GHz \leq frequency \leq 42 GHz) (nom.) MA8172A-022/-023: ≤ 1.5 dB (22.65 GHz \leq frequency \leq 45.1 GHz) (nom.) MA8172A-033: ≤ 1.5 dB (22.65 GHz \leq frequency \leq 49.8 GHz) (nom.) MA8172A-003/-005: ≤ 3 dB (6 GHz \leq frequency \leq 20 GHz) (nom.) ≤ 1.5 dB (20 GHz < frequency \leq 87 GHz) (nom.)</p> <p>Total phase deviation: excluding rotation of the phase distribution MA8172A-021: ≤ 22.5 deg. (23.4 GHz \leq frequency \leq 42 GHz) (nom.) MA8172A-022/-023: ≤ 22.5 deg. (22.65 GHz \leq frequency \leq 45.1 GHz) (nom.)</p> |
| Antenna | <p>Test Antenna MA8172A-021 Frequency: 23.4 GHz to 42 GHz Connector: K-type (m) Impedance: 50Ω (nom.) Polarization: Both (Vertical, Horizontal) (nom.)</p> <p>Test Antenna MA8172A-022/-023 Frequency: 22.65 GHz to 45.1 GHz Connector: V-type (m) Impedance: 50Ω (nom.) Polarization: Both (Vertical, Horizontal) (nom.)</p> <p>Second Antenna MA8172A-033 Frequency: 22.65 GHz to 49.8 GHz Connector: V-type (m) Impedance: 50Ω (nom.) Polarization: Both (Vertical, Horizontal) (nom.)</p> <p>Spurious Measurement Kit 6 GHz-87 GHz MA8172A-003/-005</p> <p>Feed Antenna (6 – 20 GHz) Frequency: 6 GHz to 20 GHz Connector: K-type (m) Impedance: 50Ω (nom.) Polarization: Both (Vertical, Horizontal) (nom.)</p> <p>Feed Antenna (20 – 40 GHz) Frequency: 20 GHz to 40 GHz Connector: K-type (m) Impedance: 50Ω (nom.) Polarization: Both (Vertical, Horizontal) (nom.)</p> <p>Feed Antenna (40 – 60 GHz) Frequency: 40 GHz to 60 GHz Connector: V-type (m) Impedance: 50Ω (nom.) Polarization: Both (Vertical, Horizontal) (nom.)</p> <p>Feed Antenna (60 – 87 GHz) Frequency: 60 GHz to 87 GHz Connector: W-type (m) Impedance: 50Ω (nom.) Polarization: Both (Vertical, Horizontal) (nom.)</p> |

Anritsu OTA Products Specifications

CATR Anechoic Chamber MA8172A (continued)

| | | |
|--------------------------|------|--|
| General | | <p>Exclusive interface</p> <p>Connect to MT8000A 1~6: Round multiway type connector, N (f)</p> <p>Connect to MA8178A/MA8178B (Theta, Phi): mini D-Sub 15 pin (m)</p> <p>For LTE Link Antenna: SMA (f) × 2</p> <p>General interface</p> <p>RF I/O (≤ 40 GHz): K (f) to K (f) : 2</p> <p>RF I/O (≤ 18 GHz): SMA (f) to SMA (f) : 4</p> <p>USB 3.0: Type-A (f) to Type-A (f) : 2</p> <p>Through Hole 1: φ 50 mm</p> <p>Through Hole 2: □ 18 mm (four screw stopping)</p> <p>Through Hole 3: φ 50 mm</p> <p>LAN: RJ-45 (Cat 6)</p> <p>Door: Unilateral door (left side opening)</p> <p>Aperture: 1035 (W) × 733 (H) mm</p> |
| Power Supply | | <p>MA8172A</p> <p>Rated voltage: 100 VAC to 120 VAC/200 VAC to 240 VAC</p> <p>Rated frequency: 50 Hz to 60 Hz</p> <p>Power consumption: ≤100 VA</p> <p>≤500 VA (when implementing MA8172A-010, Z2096A)</p> |
| Dimensions and Mass | | <p>Outer dimensions</p> <p>MA8172A: 2200 (W) × 1980 (H) × 1200 (D) mm (excluding projections)</p> <p>MA8172A-003: 350 (W) × 145 (H) × 255 (D) mm (excluding projections and cables)</p> <p>MA8172A-005: 350 (W) × 145 (H) × 255 (D) mm (excluding projections and cables)</p> <p>MA8172A-010: 736 (W) × 790 (H) × 736 (D) mm (excluding projections and cables)</p> <p>MA8172A-021: 90 (W) × 60 (H) × 175 (D) mm (excluding projections and cables)</p> <p>MA8172A-022: 50 (W) × 50 (H) × 150 (D) mm (excluding projections and cables)</p> <p>MA8172A-023: 50 (W) × 50 (H) × 150 (D) mm (excluding projections and cables)</p> <p>MA8172B-033: 50 (W) × 65 (H) × 150 (D) mm (excluding projections and cables)</p> <p>Mass</p> <p>MA8172A: ≤700 kg (including all options, excluding rack)</p> <p>MA8172A-003: ≤10 kg</p> <p>MA8172A-005: ≤10 kg</p> <p>MA8172A-010: ≤15 kg</p> <p>MA8172A-021: ≤1 kg</p> <p>MA8172A-022: ≤1 kg</p> <p>MA8172A-023: ≤1 kg</p> <p>MA8172A-033: ≤1 kg</p> |
| Environmental Conditions | | <p>Operating temperature range: +5°C to +35°C (MA8172A, MA8172A-003/-005/-021/-022/-023/-033, without condensation)</p> <p>+5°C to +30°C (MA8172A-010, without condensation)</p> <p>Operating humidity range: ≤85% (MA8172A-003/-005, without condensation)</p> <p>≤75% (MA8172A-010, without condensation)</p> <p>Storage temperature: -20°C to +60°C (MA8172A, MA8172A-003/-005/-010/-021/-022/-023/-033, without condensation)</p> <p>Temperature range inside MA8172A-010 insulation box: -10°C to +55°C</p> |
| CE | EMC | 2014/30/EU, EN61326-1, EN61000-3-2 |
| | LVD | 2014/35/EU, EN61010-1 |
| | RoHS | 2011/65/EU, (EU) 2015/863, EN IEC 63000: 2018 |
| UKCA | EMC | S.I. 2016 No.1091, EN 61326-1, EN61000-3-2 |
| | LVD | S.I. 2016 No.1101, EN 61010-1 |
| | RoHS | S.I. 2012 No.3032, EN IEC 63000: 2018 |

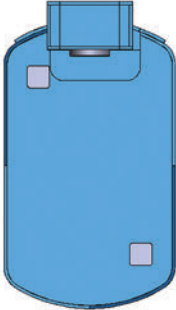
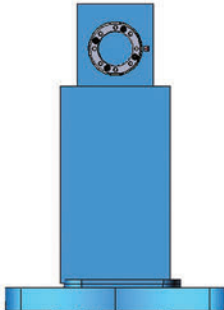
Anritsu OTA Products Specifications

CATR Anechoic Chamber MA8172A (continued)

Positioner MA8178B

| | | |
|--------------------------|------|---|
| External Interface | | Ethernet: RJ-45 × 1 (100BASE-TX/10BASE-T) Trigger Out: BNC × 1 (5 V, TTL, negative logic, pulse width 380 μs) Control connector Theta: mini D-Sub 15 pin (f) × 1 Phi: mini D-Sub 15 pin (f) × 1 |
| Dimensions and Mass | | Dimensions: 426 (W) × 175 (H) × 400 (D) mm Mass: ≤10 kg |
| Power Supply | | Rated voltage: 100 VAC to 120 VAC/200 VAC to 240 VAC Rated frequency: 50 Hz to 60 Hz Power consumption: ≤180 VA (when Positioner MA8179B connected) Power consumption: ≤120 VA (when Antenna Positioner MA8180A connected) |
| Environmental Conditions | | Operating temperature range: +5°C to +40°C (without condensation) Operating humidity range: ≤80% (without condensation) Storage temperature range: -20°C to +60°C (without condensation) Storage humidity range: ≤80% (without condensation) |
| CE | EMC | 2014/30/EU, EN61326-1, EN61000-3-2 |
| | LVD | 2014/35/EU, EN61010-1 |
| | RoHS | 2011/65/EU, (EU) 2015/863, EN IEC 63000: 2018 |
| UKCA | EMC | S.I. 2016 No.1091, EN 61326-1, EN61000-3-2 |
| | LVD | S.I. 2016 No.1101, EN 61010-1 |
| | RoHS | S.I. 2012 No.3032, EN IEC 63000: 2018 |

Positioner MA8179B

| | | |
|--------------------------|-----------|--|
| General | | <p>Axis of rotation: 2 (Theta: Horizontal rotation, Phi: Vertical rotation) Rotational speed: 0.1 rpm to 10.0 rpm, 0.1 rpm step (nom.) Rotation angle resolution (Setting resolution): 0.1 deg. (nom.) Stop precision (Reproducibility) (when the center of gravity of the load 1 kg or less is at the center of rotation): Theta: ±0.5 deg. (nom.) Phi: ±0.5 deg. (nom.) Angle of rotation Theta: -20.0 deg. to 380.0 deg. (finite rotation) Phi: infinite rotation, -720.0 deg. to 720.0 deg. (finite rotation) Angle origin Theta: According to figure below (left) Phi: According to figure below (right)</p> <div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p style="text-align: center;"> ↓Door side Front view </p> <p>EUT allowable size: 400 mm diameter hemisphere around the axis of rotation EUT allowable mass: 2.0 kg with MA8179B-AK010/-AK011 5.0 kg with MA8179B-AK012 Noise: ≤70 dB (Conforms to Machinery Directive 2006/42/EC Annex I) Power: Supplied from Position Controller MA8178B</p> |
| Dimensions and Mass | | Dimensions: 576.5 (W) × 579.5 (H) × 322 (D) mm (excluding projections and cables) Mass: ≤20 kg |
| Environmental Conditions | | Operating temperature range: +5°C to +40°C (without condensation) Operating humidity range: ≤80% (without condensation) Storage temperature range: -20°C to +60°C (without condensation) Storage humidity range: ≤80% (without condensation) |
| CE | EMC | 2014/30/EU, EN61326-1, EN61000-3-2 |
| | LVD | 2014/35/EU, EN61010-1 |
| | RoHS | 2011/65/EU, (EU) 2015/863, EN IEC 63000: 2018 |
| | Machinery | 2006/42/EC, EN60204-1 |
| UKCA | EMC | S.I. 2016 No.1091, EN 61326-1, EN61000-3-2 |
| | LVD | S.I. 2016 No.1101, EN 61010-1 |
| | RoHS | S.I. 2012 No.3032, EN IEC 63000: 2018 |

Anritsu OTA Products Specifications

CATR Anechoic Chamber 2 MA8172B

CATR Anechoic Chamber 2 MA8172B

Spurious Measurement Kit 6 GHz-87 GHz MA8172B-003/005

Temperature Testing Option MA8172B-010

Test Antenna MA8172B-022/023

Second Antenna MA8172B-033

| | |
|----------------------------|--|
| Electrical Characteristics | <p>Shielding characteristics: without cable connection via USB connector or Through Hole ≥ 60 dB ($1 \text{ GHz} \leq \text{frequency} \leq 6 \text{ GHz}$) ≥ 60 dB ($600 \text{ MHz} \leq \text{frequency} < 1 \text{ GHz}$, $6 \text{ GHz} < \text{frequency} \leq 87 \text{ GHz}$) (nom.)</p> <p>Quiet Zone MA8179A: Specifies the flatness of the electric field amplitude and phase within a cylindrical area (QZ: quiet zone) with a diameter of 330 mm and a depth of 330 mm. MA8179B: Specifies the flatness of the electric field amplitude and phase within a cylindrical area (QZ: quiet zone) with a diameter of 400 mm and a depth of 400 mm.</p> <p>Amplitude taper MA8172B-022/-023: ≤ 1.5 dB ($22.65 \text{ GHz} \leq \text{frequency} \leq 32.125 \text{ GHz}$) (nom.) (MA8179A) ≤ 1.7 dB ($32.125 \text{ GHz} < \text{frequency} \leq 45.1 \text{ GHz}$) (nom.) (MA8179A) ≤ 2.2 dB ($22.65 \text{ GHz} \leq \text{frequency} \leq 32.125 \text{ GHz}$) (nom.) (MA8179B) ≤ 2.4 dB ($32.125 \text{ GHz} < \text{frequency} \leq 45.1 \text{ GHz}$) (nom.) (MA8179B) MA8172B-033: ≤ 1.5 dB ($22.65 \text{ GHz} \leq \text{frequency} \leq 32.125 \text{ GHz}$) (nom.) (MA8179A) ≤ 1.7 dB ($32.125 \text{ GHz} < \text{frequency} \leq 49.8 \text{ GHz}$) (nom.) (MA8179A) ≤ 2.2 dB ($22.65 \text{ GHz} \leq \text{frequency} \leq 32.125 \text{ GHz}$) (nom.) (MA8179B) ≤ 2.4 dB ($32.125 \text{ GHz} < \text{frequency} \leq 49.8 \text{ GHz}$) (nom.) (MA8179B) MA8172-003/-005: ≤ 3 dB ($6 \text{ GHz} \leq \text{frequency} \leq 20 \text{ GHz}$) (nom.) (MA8179A) ≤ 1.5 dB ($20 \text{ GHz} < \text{frequency} \leq 87 \text{ GHz}$) (nom.) (MA8179A) ≤ 4 dB ($6 \text{ GHz} \leq \text{frequency} \leq 20 \text{ GHz}$) (nom.) (MA8179B) ≤ 2.5 dB ($20 \text{ GHz} < \text{frequency} \leq 87 \text{ GHz}$) (nom.) (MA8179B)</p> <p>Amplitude ripple MA8172B-022/-023: ≤ 1.5 dB ($22.65 \text{ GHz} \leq \text{frequency} \leq 45.1 \text{ GHz}$) (nom.) MA8172B-033: ≤ 1.5 dB ($22.65 \text{ GHz} \leq \text{frequency} \leq 49.8 \text{ GHz}$) (nom.) MA8172B-003/-005: ≤ 3 dB ($6 \text{ GHz} \leq \text{frequency} \leq 20 \text{ GHz}$) (nom.) ≤ 1.5 dB ($20 \text{ GHz} < \text{frequency} \leq 87 \text{ GHz}$) (nom.)</p> <p>Total phase deviation: excluding rotation of the phase distribution MA8172B-022/-023: ≤ 22.5 deg. ($22.65 \text{ GHz} \leq \text{frequency} \leq 45.1 \text{ GHz}$) (nom.)</p> |
| Antenna | <p>Test Antenna MA8172B-022/-023 Frequency: 22.65 GHz to 45.1 GHz Connector: V-type (m) Impedance: 50Ω (nom.) Polarization: Both (Vertical, Horizontal) (nom.)</p> <p>Second Antenna MA8172B-033 Frequency: 22.65 GHz to 49.8 GHz Connector: V-type (m) Impedance: 50Ω (nom.) Polarization: Both (Vertical, Horizontal) (nom.)</p> <p>Spurious Measurement Kit 6 GHz-87 GHz MA8172B-003/-005 Feed Antenna (6 – 20 GHz) Frequency: 6 GHz to 20 GHz Connector: K-type (m) Impedance: 50Ω (nom.) Polarization: Both (Vertical, Horizontal) (nom.)</p> <p>Feed Antenna (20 – 40 GHz) Frequency: 20 GHz to 40 GHz Connector: K-type (m) Impedance: 50Ω (nom.) Polarization: Both (Vertical, Horizontal) (nom.)</p> <p>Feed Antenna (40 – 60 GHz) Frequency: 40 GHz to 60 GHz Connector: V-type (m) Impedance: 50Ω (nom.) Polarization: Both (Vertical, Horizontal) (nom.)</p> <p>Feed Antenna (60 – 87 GHz) Frequency: 60 GHz to 87 GHz Connector: W-type (m) Impedance: 50Ω (nom.) Polarization: Both (Vertical, Horizontal) (nom.)</p> |

Anritsu OTA Products Specifications

CATR Anechoic Chamber 2 MA8172B (continued)

| | | |
|--------------------------|------|--|
| General | | <p>Exclusive interface</p> <p>RF Converter 5 – 8: Round multiway type connector, N (f)</p> <p>Positioner : Theta : mini D-Sub 15 pin (m) / Phi : mini D-Sub 15 pin (m)</p> <p>Positioner : Antenna Positioner: mini D-Sub 15 pin (m)/ Reserve : mini D-Sub 15 pin (m)</p> <p>LTE Link Antenna: SMA (f) × 2</p> <p>General interface (Connector shape of MA8172B outside – Connector shape MA8172B inside)</p> <p>RF I/O (≤ 64 GHz): V (f) - V (f) : 8</p> <p>RF I/O (≤ 40 GHz): K (f) - K (f) : 2</p> <p>RF I/O (≤ 18 GHz): SMA (f) - SMA (f) : 4</p> <p>USB 3.0: Type-A (f) - Type-A (f) : 2</p> <p>Through Hole 1: φ 50 mm</p> <p>Through Hole 2: □ 18 mm (four screw stopping)</p> <p>Through Hole 3: φ 50 mm</p> <p>LAN: RJ-45 (Cat 6)</p> <p>Door: Unilateral door (left side opening)</p> <p>Aperture: 1035 (W) × 733 (H) mm</p> |
| Dimensions and Mass | | <p>Outer dimensions</p> <p>MA8172B: 2700 (W) × 1980 (H) × 1500 (D) mm (excluding projections)</p> <p>MA8172B-003: 350 (W) × 145 (H) × 255 (D) mm (excluding projections and cables)</p> <p>MA8172B-005: 350 (W) × 145 (H) × 255 (D) mm (excluding projections and cables)</p> <p>MA8172B-010: 736 (W) × 790 (H) × 736 (D) mm (excluding projections and cables)</p> <p>MA8172B-022: 50 (W) × 50 (H) × 150 (D) mm (excluding projections and cables)</p> <p>MA8172B-023: 50 (W) × 50 (H) × 150 (D) mm (excluding projections and cables)</p> <p>MA8172B-033: 50 (W) × 65 (H) × 150 (D) mm (excluding projections and cables)</p> <p>Mass</p> <p>MA8172B: ≤750 kg (including all options, excluding rack)</p> <p>MA8172B-003: ≤10 kg</p> <p>MA8172B-005: ≤10 kg</p> <p>MA8172B-010: ≤20 kg</p> <p>MA8172B-022: ≤1 kg</p> <p>MA8172B-023: ≤1 kg</p> <p>MA8172B-033: ≤1 kg</p> |
| Power Supply | | <p>MA8172B</p> <p>Rated voltage: 100 VAC to 120 VAC/200 VAC to 240 VAC</p> <p>Rated frequency: 50 Hz to 60 Hz</p> <p>Power consumption: ≤100 VA</p> <p>≤500 VA (when implementing MA8172B-010, Z2096A)</p> |
| Environmental Conditions | | <p>Operating temperature range (without condensation): +15°C to +30°C (MA8172B, MA8172B-003/-005/-010/-022/-023)</p> <p>Operating humidity range (without condensation): ≤85% (MA8172B-003/-005)</p> <p>≤75% (MA8172B-010)</p> <p>Storage temperature (without condensation): -20°C to +60°C (MA8172B, MA8172B-003/-005/-010/-022/-023)</p> <p>Temperature range inside MA8172B-010 insulation box: -10°C to +55°C</p> |
| CE | EMC | 2014/30/EU, EN61326-1, EN61000-3-2 |
| | LVD | 2014/35/EU, EN61010-1 |
| | RoHS | 2011/65/EU, (EU) 2015/863, EN IEC 63000: 2018 |
| UKCA | EMC | S.I. 2016 No.1091, EN 61326-1, EN61000-3-2 |
| | LVD | S.I. 2016 No.1101, EN 61010-1 |
| | RoHS | S.I. 2012 No.3032, EN IEC 63000: 2018 |

Anritsu OTA Products Specifications

CATR Anechoic Chamber 2 MA8172B (continued)

Antenna Positioner MA8180A

DFF Antenna MA8180A-001

| | | |
|--------------------------|--|---|
| General | Axis of rotation: Horizontal rotation Rotation speed: 1.8 rpm (max.) Rotation angle resolution (setting resolution): 0.1 deg. (nom.) Stop precision (Reproducibility): ± 0.5 deg. (nom.) (when the load 30 kg or less) Angle of rotation: 30.0 deg. to 150.0 deg. (nom.) Load capacity: 30 kg or less Noise: ≤ 70 dB (Complied with Directive 2006/42/EC (Annex I) and amending Directive 95/16/EC) | |
| Power | Supplied from Position Controller MA8178B | |
| Antenna | Frequency: 22.65 GHz to 49.8 GHz Connector: V-type (m) Impedance: 50Ω (nom.) Polarization: Both (Vertical, Horizontal) (nom.) | |
| Dimensions and Mass | MA8180A Dimensions: 1600 (W) \times 950 (H) \times 850 (D) mm (excluding projections and cables) Mass: ≤ 90 kg (including all options) MA8180A-001 Dimensions: 375 (W) \times 650 (H) \times 270 (D) mm (excluding projections and cables) Mass: ≤ 5 kg | |
| Environmental Conditions | Operating temperature range (without condensation): $+15^{\circ}\text{C}$ to $+40^{\circ}\text{C}$ Operating humidity range (without condensation): $\leq 80\%$ Storage temperature (without condensation): -20°C to $+60^{\circ}\text{C}$ Storage humidity range (without condensation): $\leq 80\%$ | |
| CE | EMC | 2014/30/EU, EN61326-1, EN61000-3-2 |
| | LVD | 2014/35/EU, EN61010-1 |
| | RoHS | 2011/65/EU, (EU) 2015/863, EN IEC 63000: 2018 |
| | Machinery | 2006/42/EC, EN60204-1 |
| UKCA | EMC | S.I. 2016 No.1091, EN 61326-1, EN61000-3-2 |
| | LVD | S.I. 2016 No.1101, EN 61010-1 |
| | RoHS | S.I. 2012 No.3032, EN IEC 63000: 2018 |

Anritsu OTA Products Ordering Information

Please specify the model/order number, name and quantity when ordering.

The names listed in the chart below are Order Names. The actual name of the item may differ from the Order Name.

| Model/Order No. | Name | Model/Order No. | Name |
|-----------------|--|-----------------|---|
| | Shield Box | | |
| MA8161A | Shield Box | MA8172A-AK041 | Sliding Door |
| MA8161A-002 | Control Panel 2 | MA8172A-AK101 | Temperature Testing Accessory for MA8179B |
| MA8161A-AK010 | Shield Tube | MA8172A-AK102 | Positioner Base Kit for MA8179B |
| Z1999A | 28 GHz Antenna Unit | MA8178A | Position Controller |
| Z2000A | 39 GHz Antenna Unit | MA8178B | Position Controller |
| K241C | Precision Power Splitter, DC to 40 GHz | MA8178B-AK001 | MA8178B Rack Mount Kit |
| | RF Chamber | MA8179A | Positioner |
| MA8171A | RF Chamber | MA8179A-AK010 | DUT-supporting structure |
| MA8174A | Position Controller | MA8179A-AK011 | DUT Holder |
| MA8175A | Positioner | MA8179B | Positioner |
| MA8175A-AK001 | Cable Management Kit | MA8179B-AK010 | DUT-supporting structure |
| MA8181A | 28 GHz Test Antenna | MA8179B-AK011 | DUT Holder |
| Z1996A | 28 GHz/39 GHz Test Antenna | MA8179B-AK012 | DUT Pole mount structure |
| Z2031A | Test Antenna | MA8179B-AK020 | Positioner Control Cable (1.7 m) |
| B0746A | Chamber Rack | MA8179B-AK021 | Positioner Control Cable (3.0 m) |
| B0747A | Converter Rack | MA8179B-AK030 | Jig For Reference Antenna |
| J0322A | Coaxial Cord, 0.5M | MA8179B-AK040 | Rotary Table Wave Absorber |
| J0322B | Coaxial Cord, 1.0M | MA8179B-AK041 | Wave Absorber |
| J0322C | Coaxial Cord, 1.5M | MA8179B-AK042 | Non-slip Sheet (12 pcs) |
| J0322D | Coaxial Cord, 2.0M | Z1974A | Reference Antenna |
| J1762A | Positioner Control Cable (3.0 m) | Z2032A | Reference Antenna |
| J1775A | Coaxial Cable (KM-KM, 0.3 m) | Z2065A | Shield Tube |
| J1775B | Coaxial Cable (KM-KM, 1.0 m) | Z2096A | Heater Controller |
| J1775C | Coaxial Cable (KM-KM, 2.0 m) | J1806D | VJ-KP Adaptor |
| J1775D | Coaxial Cable (KM-KM, 3.0 m) | J1811B | Coaxial cable (VML-VM, 2.5 m) |
| J1795A | Coaxial Cable (SMA (M)-SMA (M), 0.5 m) | ML2437A | Power Meter |
| J1795B | Coaxial Cable (SMA (M)-SMA (M), 1.0 m) | MA2444D | High Accuracy Sensor |
| J1795C | Coaxial Cable (SMA (M)-SMA (M), 1.5 m) | MA2445D | High Accuracy Sensor |
| J1795D | Coaxial Cable (SMA (M)-SMA (M), 2.0 m) | 41KC-10 | Fixed Attenuator |
| J1811A | Coaxial cable (VM-VM, 0.28 m) | 41VA-10 | Fixed Attenuator |
| J1811B | Coaxial cable (VML-VM 2.5 m) | 34VFK50A | Precision Adapter, DC to 43.5 GHz, V (f) - K (m), 50Ω |
| Z1983A | Tray | | CATR Anechoic Chamber 2 |
| Z1984A | Jig for DUT Tray | MA8172B | CATR Anechoic Chamber 2 |
| Z1985A | Wave Absorber | MA8172B-003 | Spurious Measurement Kit 6GHz-87GHz |
| Z1986A | Hook and Loop Fastener | MA8172B-005 | Spurious Measurement Kit 6GHz-87GHz |
| Z2009A | Link Antenna | MA8172B-010 | Temperature Testing Option |
| Z2065A | Shield Tube | MA8172B-022 | Test Antenna |
| B0752A | Link Antenna Holder | MA8172B-023 | Test Antenna |
| J1798A | GPIB-USB-HS+ | MA8172B-033 | Second Antenna |
| J1806A | VJ-VJ Adaptor | MA8172B-AK011 | Converter Install Kit |
| J1806B | VJ-KJ Adaptor | MA8172B-AK013 | Switching Hub |
| | CATR Anechoic Chamber | MA8172B-AK021 | Antenna Mounting Base |
| MA8172A | CATR Anechoic Chamber | MA8172B-AK022 | NR FR2 Link Antenna Kit |
| MA8172A-003 | Spurious Measurement Kit 6 GHz-87 GHz | MA8172B-AK023 | LTE Link Antenna Kit |
| MA8172A-005 | Spurious Measurement Kit 6 GHz-87 GHz | MA8172B-AK024 | NR FR2 Link Antenna Kit |
| MA8172A-010 | Temperature Testing Option | MA8172B-AK025 | FR2 Link Antenna Angle Kit for MA8179B |
| MA8172A-021 | Test Antenna | MA8172B-AK031 | Monitor Camera |
| MA8172A-022 | Test Antenna | MA8172B-AK032 | Additional Rack(41U) |
| MA8172A-023 | Test Antenna | MA8172B-AK033 | Interferer Accessory |
| MA8172A-033 | Second Antenna | MA8172B-AK041 | Sliding Door |
| MA8172A-AK011 | Converter Install Kit | MA8172B-AK101 | Temperature Testing Accessory for MA8179B |
| MA8172A-AK012 | Converter Tray | MA8172B-AK103 | Positioner Base Kit for MA8179A |
| MA8172A-AK013 | Switching Hub | MA8172B-AK104 | Additional Parts for Temperature Testing |
| MA8172A-AK021 | Antenna Mounting Base | MA8172B-AK105 | Positioner Base Kit for MA8179B |
| MA8172A-AK022 | NR FR2 Link Antenna Kit | MA8172B-UG301 | MA8172A to MA8172B Upgrade |
| MA8172A-AK023 | LTE Link Antenna Kit | MA8172B-UG303 | Spurious Measurement Kit Upgrade 3 |
| MA8172A-AK024 | NR FR2 Link Antenna Kit | MA8180A | Antenna Positioner |
| MA8172A-AK025 | FR2 Link Antenna Angle Kit for MA8179B | MA8180A-001 | DFF Antenna |
| MA8172A-AK031 | Monitor Camera | MA8180A-AK001 | Converter Install Kit |
| MA8172A-AK032 | Additional Rack (41U) | | |
| MA8172A-AK033 | Interferer Accessory | | |

Anritsu OTA Products Related Products

Radio Communication Test Station MT8000A



All-in-One 5G RF Measurements and Protocol Tests

- Flexible Platform using Modular Architecture
- Support both Standalone and non-Standalone modes

New Radio RF Conformance Test System ME7873NR



Trust 5G conformance test system

- Early 3GPP Compliant Test Case Release
- Support Global Mobile Terminals
- The System with Stable Measurement
- Measurement Functions for Efficient R&D

5G NR Mobile Device Test Platform ME7834NR



All-in-One 5G NR Support for Protocol Conformance Tests and Carrier Acceptance Test

- Supports 3GPP defined bands from Sub-6GHz to mm-Wave
- Support 5G New Radio (NR) Technology in both Standalone and Non-Standalone mode
- Support LTE, LTE-Advanced (LTE-A), LTE-A Pro, and W-CDMA
- Upgrade your current ME7834 system for 5G

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