

ATxTel ShieldMAX Chamber

Offers a reliable solution for RF testing requiring isolation from external signals

The ShieldMAX chamber provides excellent RF isolation from external signal sources across a wide frequency range, significantly reducing RF interferences. Its advanced designs feature high-rejection filters for minimal interference. ShieldMAX filters support Multi-Gig Ethernet, USB 2.0 (USB-A), USB 3.0 (USB-C), HDMI, DC, and AC power. ATxTel ShieldMAX XD Series uses durable aluminum RF-tight material for long-lasting shielding performance. ShieldMAX SD Series uses stainless steel material for a cost-effective and reliable shielding performance. All metal surfaces in the ShieldMAX chambers are covered with RF-absorbing foam to dampen internal reflections. Combined with high-rejection filter designs, the ShieldMAX chambers achieve near-complete isolation, preventing RF leaks and ensuring a controlled environment. The enclosure is customizable with various components, including RF connectivity, filters, rack mounts, and ventilation options. Multiple sizes are available, from compact benchtop mounts to large chamber stacks for complex testbed configurations like mesh, MIMO, and handover.



Applications

- Wi-Fi (including Wi-Fi 6E and Wi-Fi7), Bluetooth and Cellular (4G/5G) testing
- Certification Testing
- Quality Assurance
- Network Optimization
- Production Testing

Specifications

- **Supported Wireless Standards:**
Wi-Fi 7 (802.11be), Wi-Fi 6/6E (802.11ax), Wi-Fi 5 (802.11ac), Wi-Fi 4 (802.11n), LTE, 5G NR, Bluetooth, Zigbee, and more.
- **Shielding Effectiveness:**
XD Series: Up to 100dB
SD Series: Up to 80dB
XD Series: Up to 100dB
- **Frequency Range:**
10 MHz to 18 GHz
- **Construction Material:**
XD Series: Aluminum
SE Series: Stainless Steel
- **Interior:**
 - Semi-anechoic absorption foam with high-gain directional antennas
 - XD Series: 5cm foam
 - SD Series: 3cm foam
- **Dimensions:**
Standard and Customizable

ShieldMAX XD Chamber

The ShieldMAX XD110 and XD48 Series use durable aluminum RF-tight material to achieve up to 100dB of RF isolation. To dampen internal reflections, all metal surfaces in the ShieldMAX chambers are covered with thick RF-absorbing foam. Combined with high-rejection filter designs, the ShieldMAX XD110 and XD48 chambers achieve near-complete isolation, preventing RF leaks and ensuring a controlled environment.

The ShieldMAX XD110 Chamber is the main building block of a comprehensive testbed. It can be combined with the ShieldMAX XD48 chamber to form a large chamber stack for complex testbed configurations like mesh, MIMO, and handover. Thus, the test configuration for Broadband Forum’s TR398 test requirement can easily fit on a single movable stack.



Testbed with XD110-TT and two XD48s

Stackable Configuration

ATxTel ShieldMAX XD110 and XD48 are designed for stackable configurations with an optional sturdy caster base. The width of XD48 is approximately half the width of XD110. Each chamber comes with mounting plates intended to secure the base on the chamber above it. This setup enables complex testbed designs with up to 6 chambers on a base for advanced testbed configurations for mesh and handover testing.



Testbed with XD100 2D Turntable and two XD48s



XD48

ShieldMax XD Configuration and Options

	XD110	XD48
SMA Ports	32 (8 left, 8 right and 16 back)	32 (8 left, 8 right and 16 back)
High-gain Antenna	16 (configurable with included antenna mounting brackets)	10 (configurable with included antenna mounting brackets)
LED Light	1 (with on/off switch)	1 (with on/off switch)
USB Camera	1	1
Exhaust Fans	4 (2 in fans and 2 out fans)	4 (2 in fans and 2 out fans)
Acrylic Base	1	1
Available Filter Plate Opening	10	6
Isolation Foam	5cm	3cm
Filters		
AC Power (1x) + DC Power (1x) + USB-2.0 (4x)	1	1
10G Ethernet (4x)	1	1
Waveguide (1x) + BNC (1x)	1	1
Waveguide (1x) + Coax Type F (1x)	option	option
USB-C (2x)	1	option
USB-3 (1x) - 100 dB Isolation	2	2
USB-3 (4x) - 80 dB Isolation	option	option
2D Turntable (x, and y-axis) turntable with a touch-screen front panel	option	N/A
3D Turntable (x, y, and z-axis) turntable with a touch-screen front panel	option	N/A
Mounting Plate for ShieldProAtten	4 (1 left, 1 right and 2 back)	3 (1 left, 1 right and 1 back)
Lockable Casters	option	N/A
Base Platform with Casters	option	option

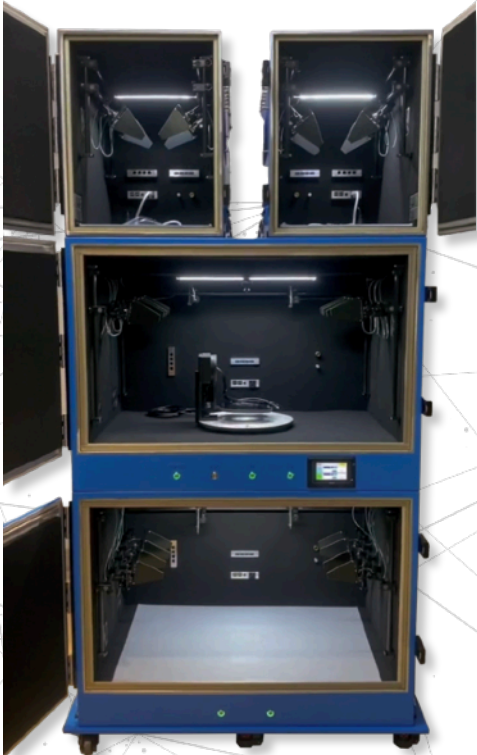
ShieldMAX SD Chamber

The ShieldMAX SD Series uses stainless steel to achieve up to 80dB of RF isolation, ensuring cost-effective and reliable shielding performance. To dampen internal reflections, all metal surfaces in the ShieldMAX chambers are covered with 3cm thick RF-absorbing foam. Combined with high-rejection filter designs, the ShieldMAX SD chambers achieve excellent RF isolation, preventing RF leaks and ensuring a controlled environment.

The ShieldMAX SD110 Chamber is the main building block of a comprehensive testbed. It can be combined with the ShieldMAX SD48 chamber to form a large chamber stack for complex testbed configurations like mesh, MIMO, and handover. Thus, the test configuration for Broadband Forum's TR398 test requirement can easily fit on a single movable stack.



TR398 Mesh Testbed



TR398 Mesh Testbed with 3D Turntable

Stackable Configuration

ATxTel ShieldMAX SD110 and SD48 are designed for stackable configurations with an optional sturdy caster base. The width of SD48 is approximately half the width of SD110. Each chamber comes with mounting plates intended to secure the base on the chamber above it. This setup enables complex testbed designs with up to 6 chambers on a base for advanced testbed configurations for mesh and handover testing.

ShieldMax SD Configuration and Options

	SD110	SD48
SMA Ports	16 (8 left and 8 right)	16 (8 left and 8 right)
High-gain Antenna	10 (configurable with included antenna mounting brackets)	4 (configurable with included antenna mounting brackets)
LED Light	1 (with on/off switch)	1 (with on/off switch)
USB Camera	1 (with turntable)	option
Exhaust Fans	4 (2 in fans and 2 out fans)	4 (2 in fans and 2 out fans)
Acrylic Base	1	1
Available Filter Plate Opening	6	6
Isolation Foam	3cm	3cm
Filters		
AC Power (1x) + DC Power (1x) + USB-2.0 (4x)	1	1
10G Ethernet (4x)	1	1
Waveguide (1x) + BNC (1x)	1	1
Waveguide (1x) + Coax Type F (1x)	option	option
USB-C (2x)	option	option
USB-3 (1x) - 100 dB Isolation	option	option
USB-3 (4x) - 80 dB Isolation	1	1
2D Turntable (x, and y-axis) turntable with a touch-screen front panel	option	N/A
3D Turntable (x, y, and z-axis) turntable with a touch-screen front panel	option	N/A
Mounting Plate for ShieldProAtten	4 (1 left, 1 right and 2 back)	3 (1 left, 1 right and 1 back)
Lockable Casters	option	N/A
Base Platform with Casters	option	option

ShieldMAX Rack-mount Chamber

Rack-mountable RF chambers are designed for installation in standard 19-inch equipment racks, enabling seamless integration into existing testing setups and infrastructure. The ShieldMAX rack-mount chambers can be constructed from cost-effective stainless steel or high-grade aluminum, achieving isolation levels of up to 100 dB. Paired with high-rejection filter designs, the ShieldMAX Series chambers offer near-complete isolation, preventing RF leakage and ensuring accurate, reliable measurements. Inside the rack-mountable chamber, there is typically sufficient space to accommodate the RF devices under test. The chambers can also be configured with various mounting options, such as shelves or brackets, to secure antennas or position the devices as needed. The ShieldMAX is available in standard 10U and 12U configurations.



XD42-10U Chambers in a 19" Rack

Optional Built-in 2D or 3D Turntable

The built-in programmable turntable is a rotating platform that enables controlled movement and positioning of objects, such as antennas, receivers, or devices under test (DUTs). It offers precise speed control and angular positioning capabilities to simulate various orientations and angles for the device under test, allowing testers and engineers to evaluate the performance and characteristics of RF devices, including their radiation patterns and sensitivity to different signal directions.

- Support up to 22 lbs (10 kg)
- 0 to 10 RPM
- 1° Angular Resolution
- Routing duct for DC Power, USB and Ethernet interfaces
- Front panel touchscreen control: Forward, Back and Reset



XD110 with 2D Turntable

ShieldMax Rack-Mount Chamber Configuration and Options

	XD-10U SD-10U	XD-12U SD-10U
SMA Ports	16 (back)	20 (back)
High-gain Antenna	option	option
LED Light	1 (with on/off switch)	1 (with on/off switch)
USB Camera	option	option
Exhaust Fans	4 (2 in fans and 2 out fans)	4 (2 in fans and 2 out fans)
Acrylic Base	1	1
Available Filter Plate Opening	6	6
Isolation Foam	3cm	3cm
Construction Material (Aluminum)	XD-10U	XD-12U
Construction Material (Stainless Steel)	SD-10U	SD-12U
Filters		
AC Power (1x) + DC Power (1x) + USB-2.0 (4x)	1	1
10G Ethernet (4x)	1	1
Waveguide (1x) + BNC (1x)	1	1
Waveguide (1x) + Coax Type F (1x)	option	option
USB-C (2x)	option	option
USB-3 (1x) - 100 dB Isolation	option	option
USB-3 (4x) - 80 dB Isolation	option	option
2D Turntable (x, and y-axis) turntable with a touch-screen front panel	N/A	N/A
3D Turntable (x, y, and z-axis) turntable with a touch-screen front panel	N/A	N/A
Mounting Plate for ShieldProAtten	N/A	N/A
Lockable Casters	N/A	N/A
Base Platform with Casters	N/A	N/A

Customized Chamber

Do you have specific chamber requirements? Devices come in various shapes and sizes. Many standard-size chambers may not meet your requirements due to the combination of different wireless technologies and testing needs. ATxTel can assist in designing and building customized chambers to fit your specific testing needs. Customizations include:

- Chamber sizes
- Constructed from either aluminum or stainless steel
- Rack-mount, floor-standing, or desktop setups
- RF filters
- Absorbing materials with specific dampening properties
- Intake and exhaust fans for heat dissipation
- Special antenna mounting brackets
- DUT fixtures
- 2D or 3D turntables



Custom desktop chamber



Please contact us at sales@atxtel.com for a consultation.



Custom 110cm tall chamber






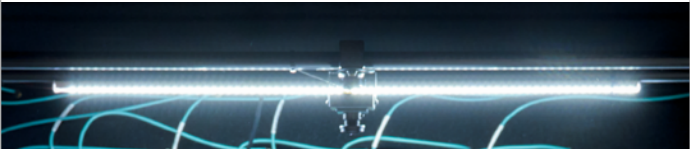



Custom 110cm tall chamber with special antenna mount and shelves



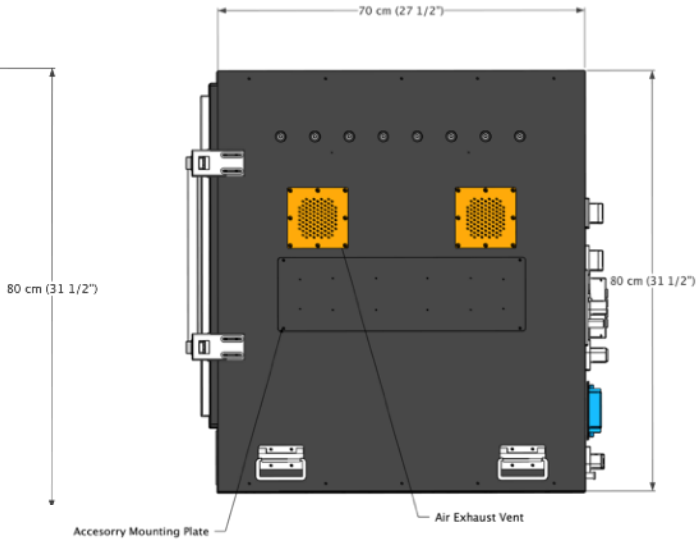
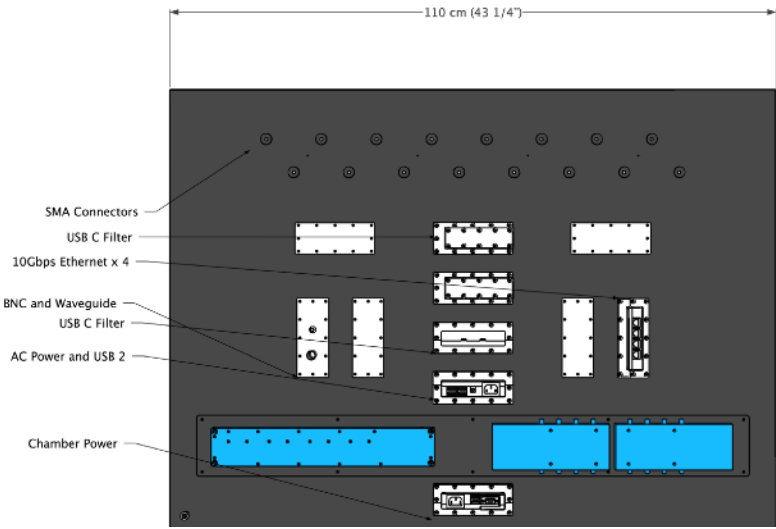
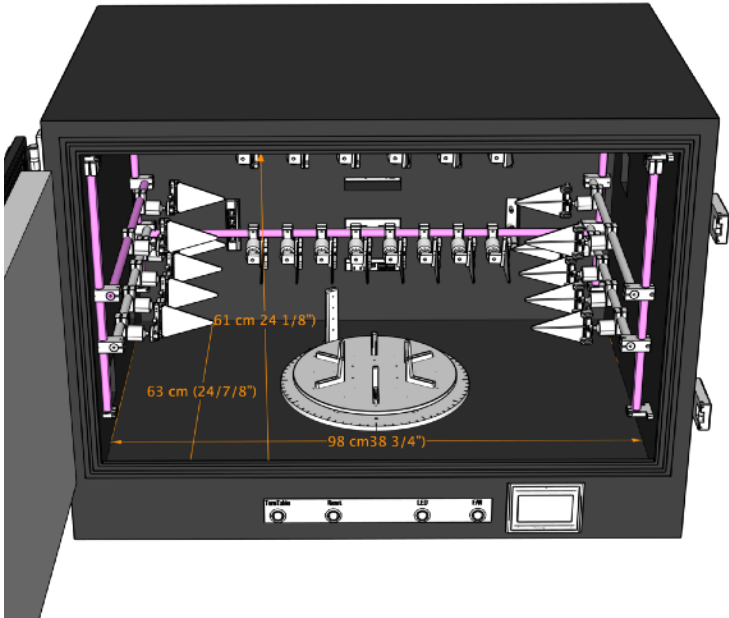
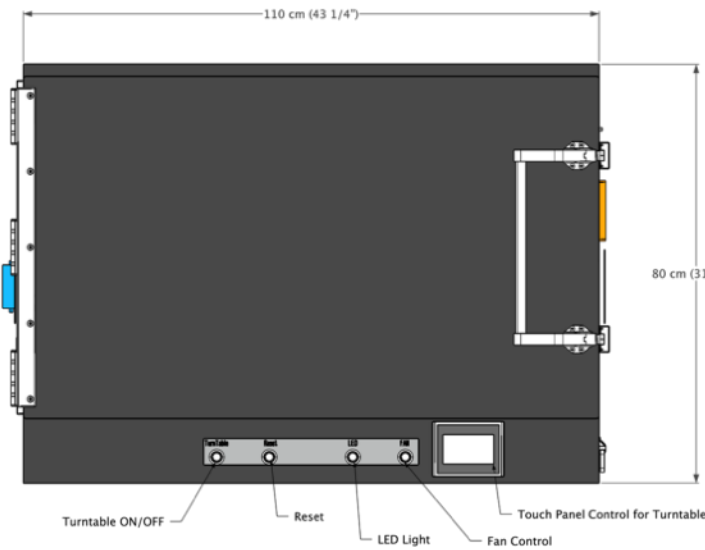
Fan filter design for heat dissipation

Filters and Options

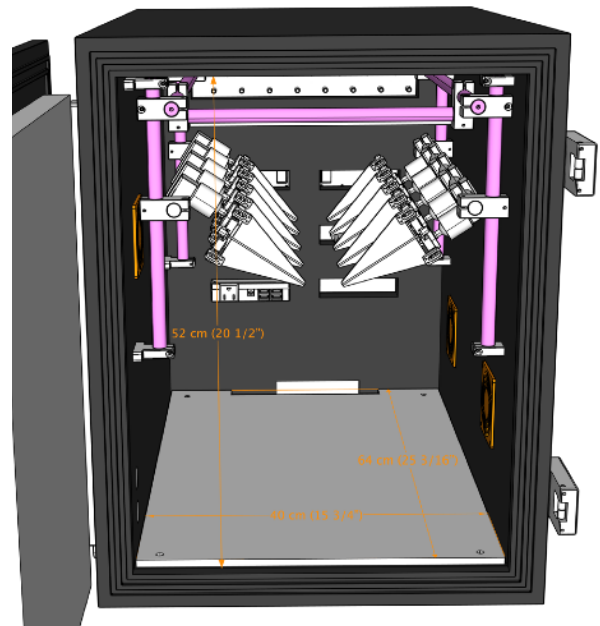
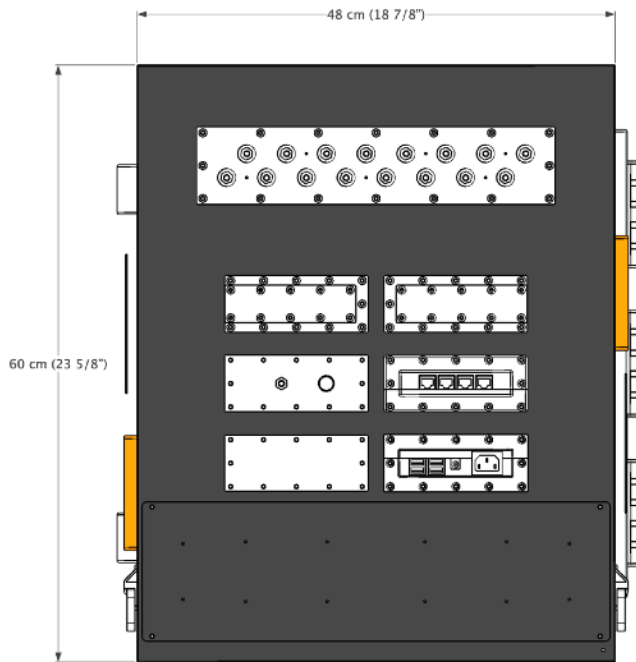
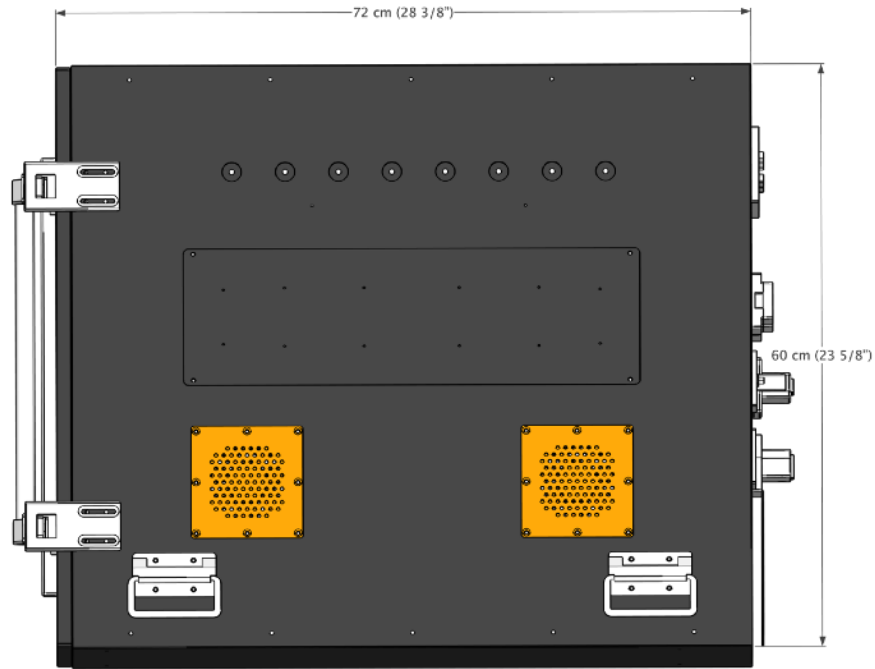
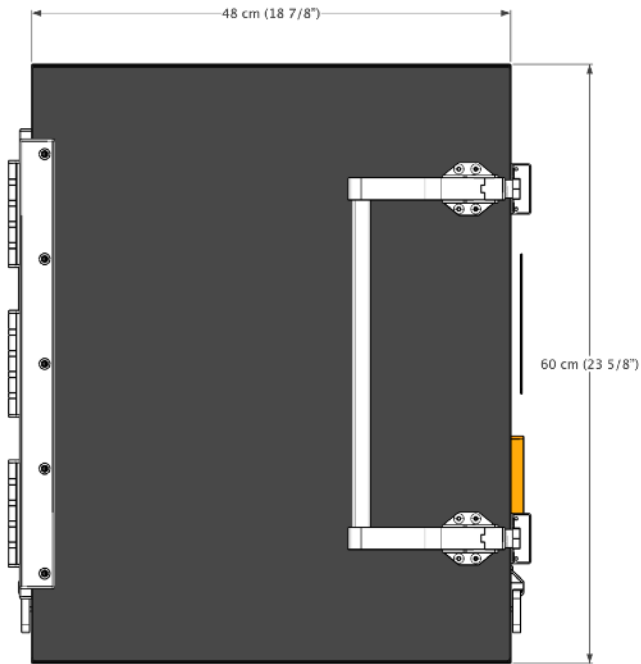
View	Description
	<p>2D Turntable</p>
	<p>3D Turntable</p>
	<p>10G Ethernet Port (x4)</p>
	<p>AC and DC power filter with USB 2.0 (x4)</p>
	<p>USB-C Port (x2)</p>
	<p>USB 3.0 Port (x1)</p>
	<p>SMA connectors (x8)</p>

View	Description
	<p>Waveguide and BNC connector (x1)</p>
	<p>Waveguide and F-Type connector (x1)</p>
	<p>High Gain Antennas (x4)</p>
	<p>LED Light</p>
	<p>Camera option</p>
	<p>Base with Casters</p>
	<p>External Shelf</p>

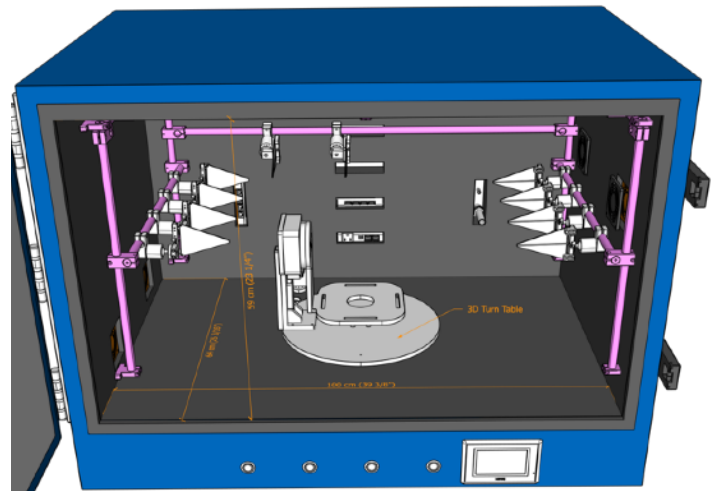
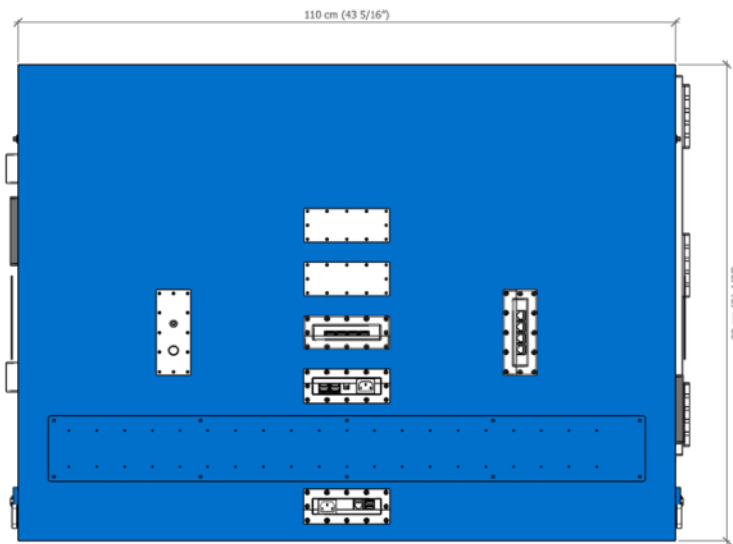
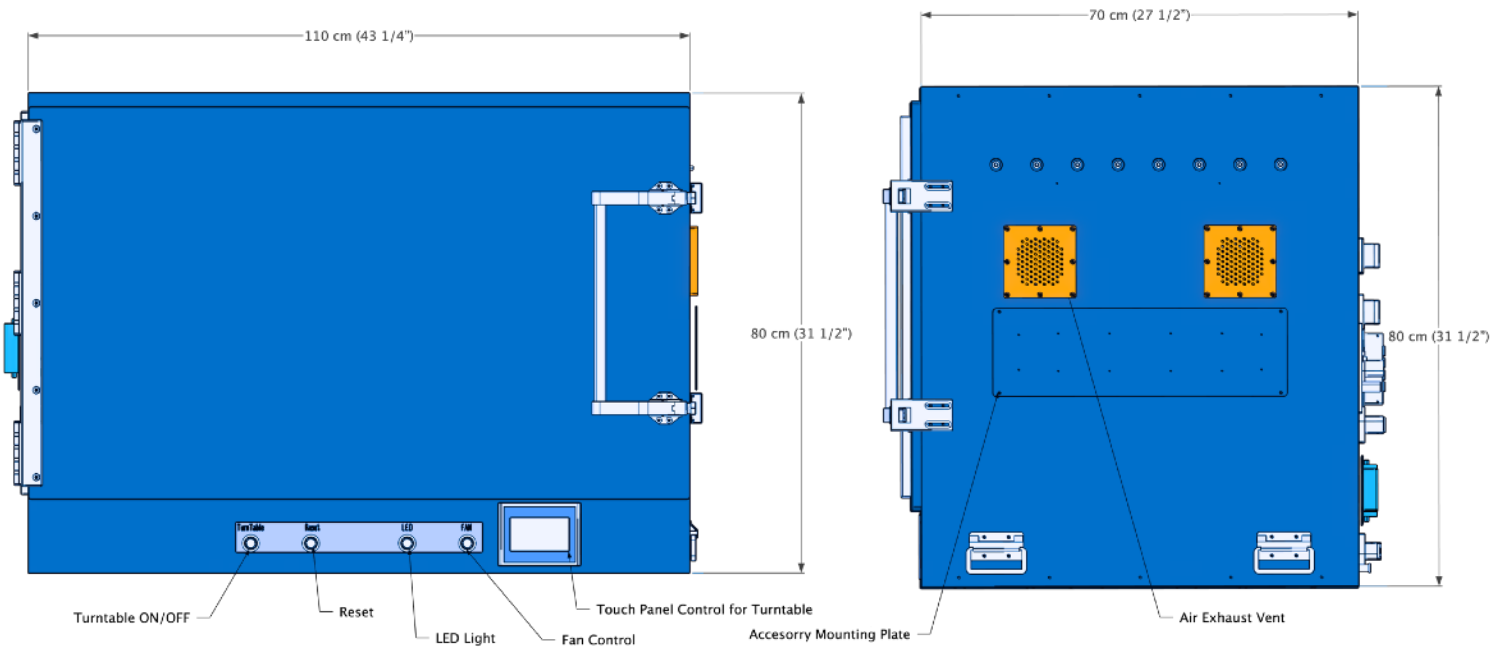
ShieldMAX XD110 Dimensions



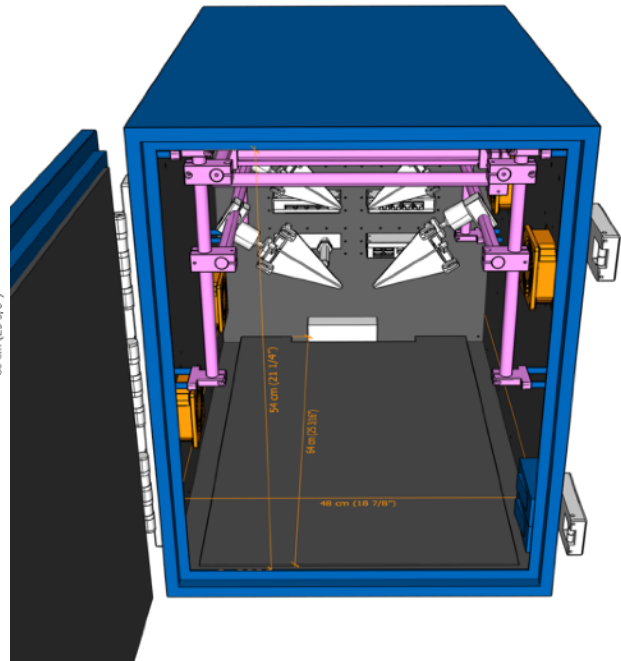
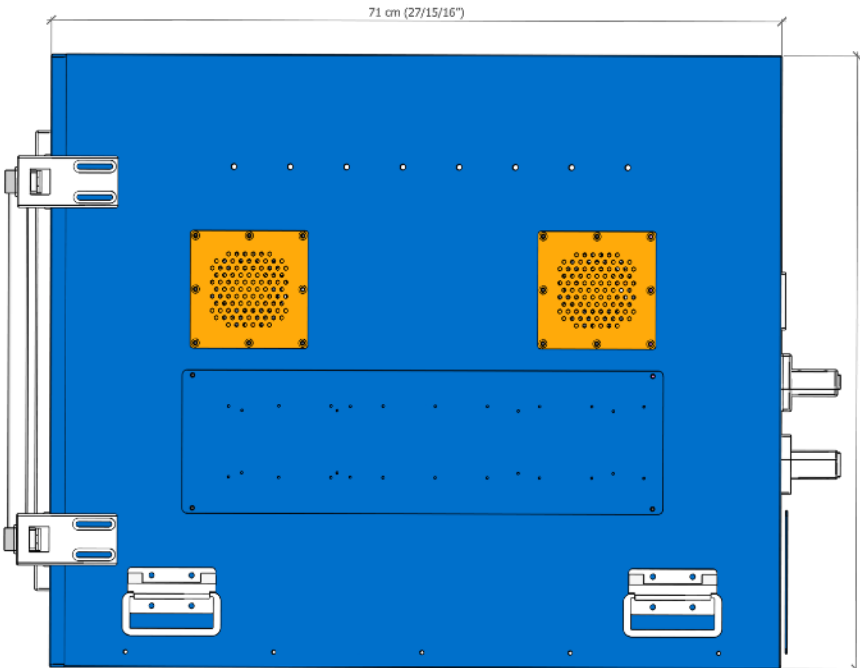
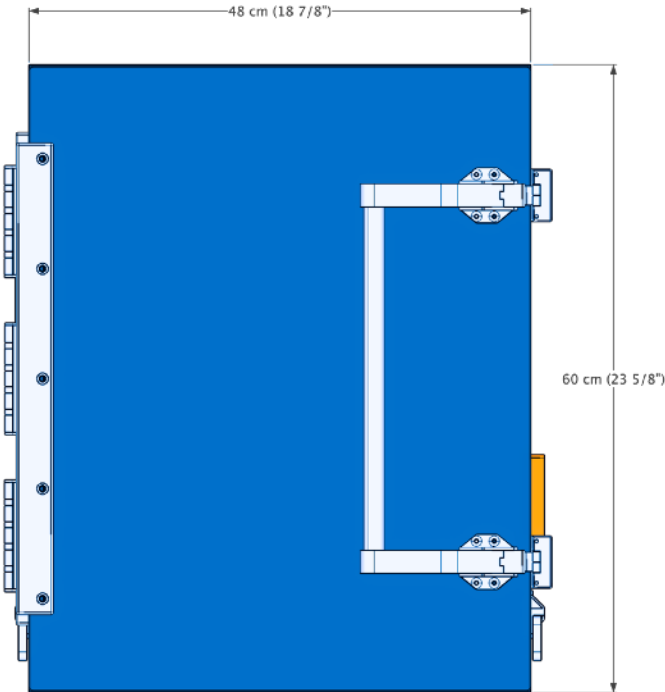
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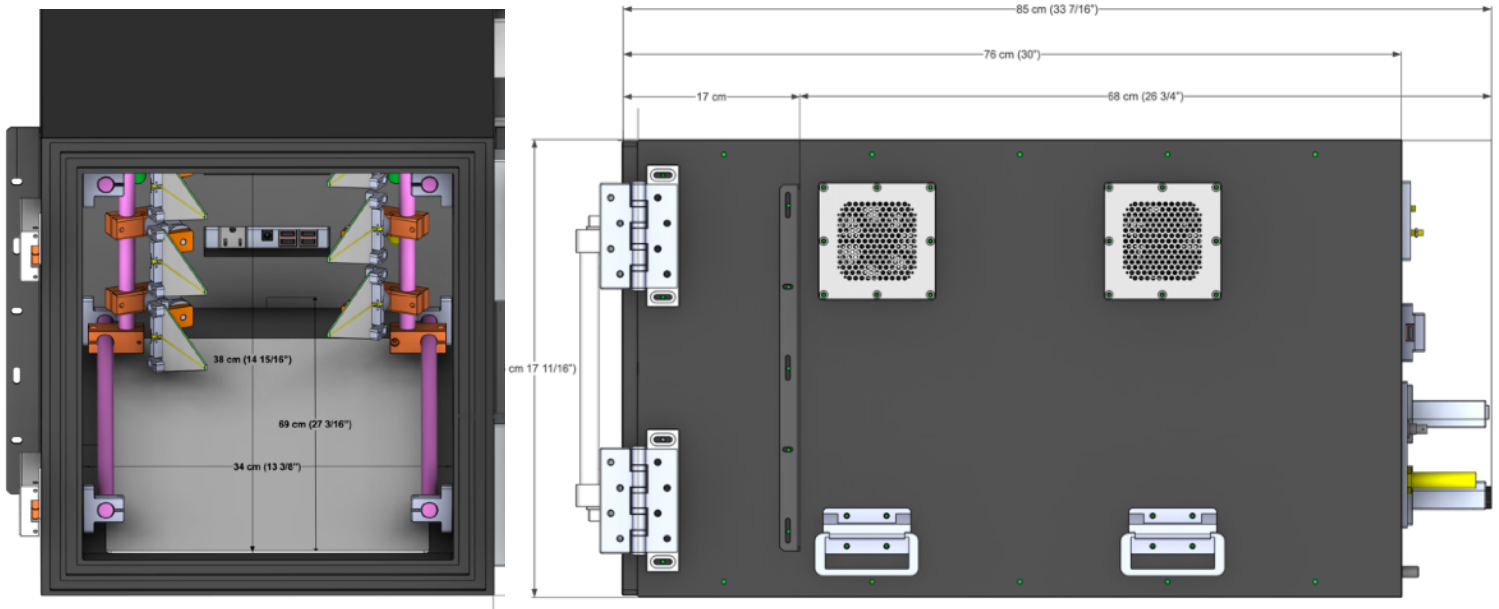
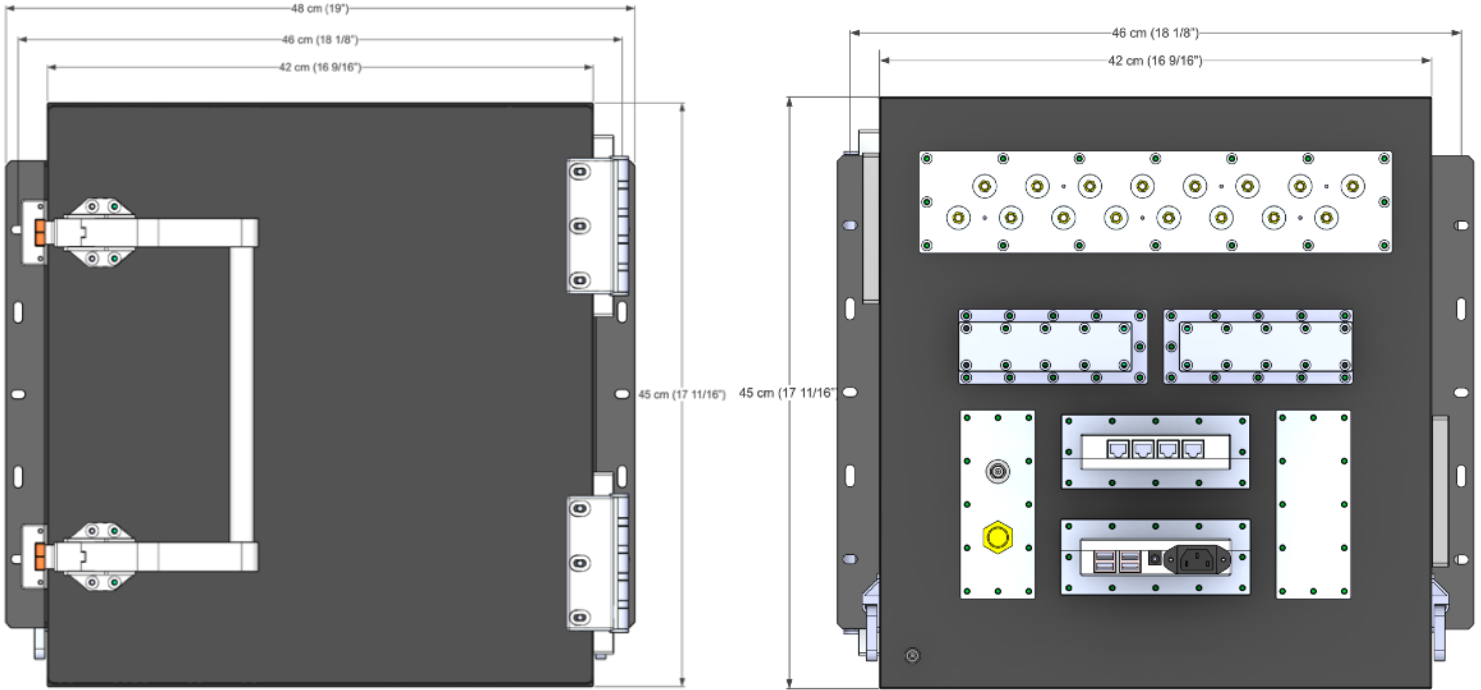
ShieldMAX SD110 Dimensions



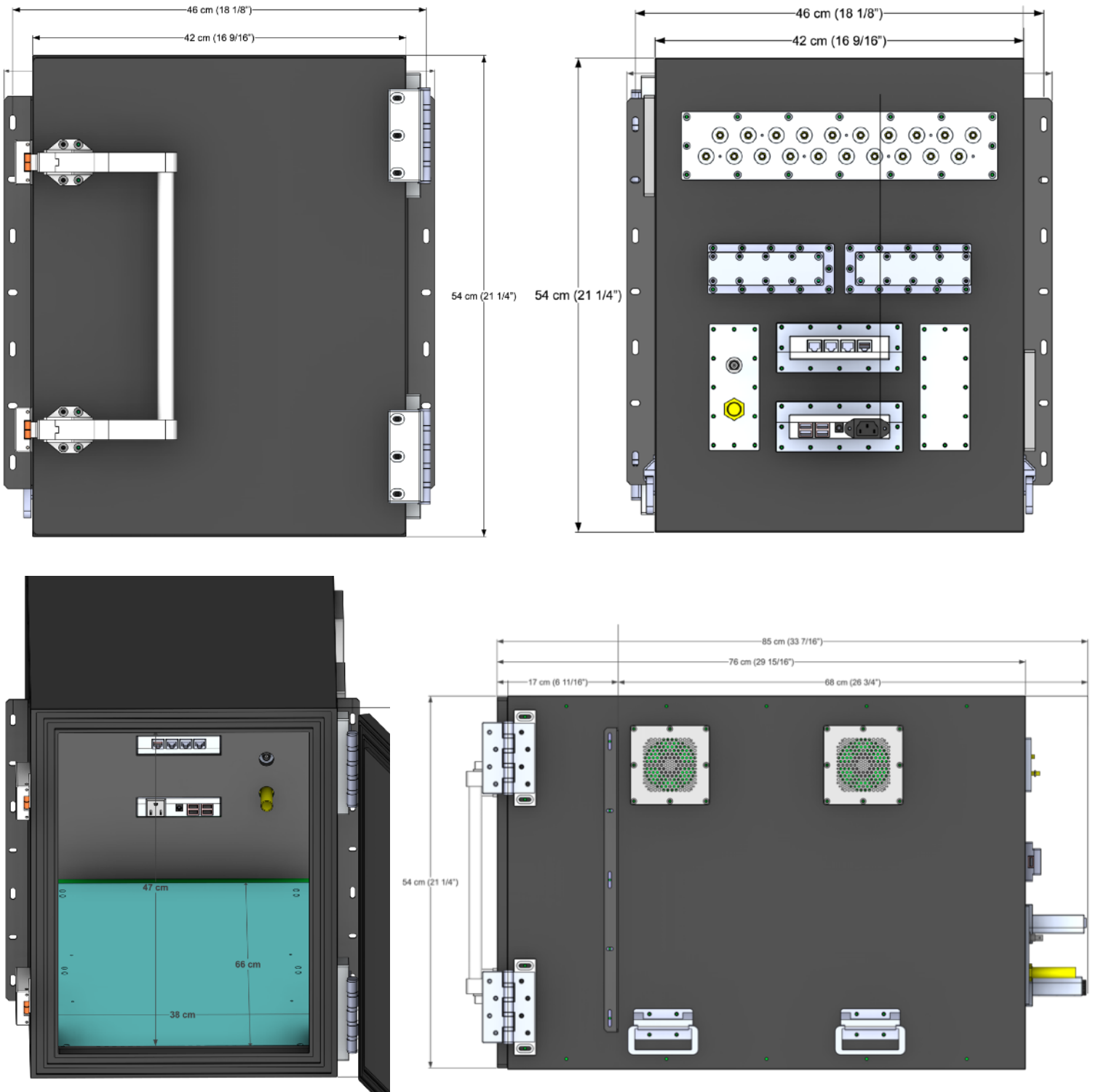
ShieldMAX SD48 Dimensions



ShieldMAX XD-10U and SD-10U Dimensions



ShieldMAX XD-12U and SD-12U Dimensions



CONTACT

ATxTel LLC
421 Broadway, STE# 86
San Diego CA 92101
USA
Tel: 866-811-3811
sales@atxtel.com

