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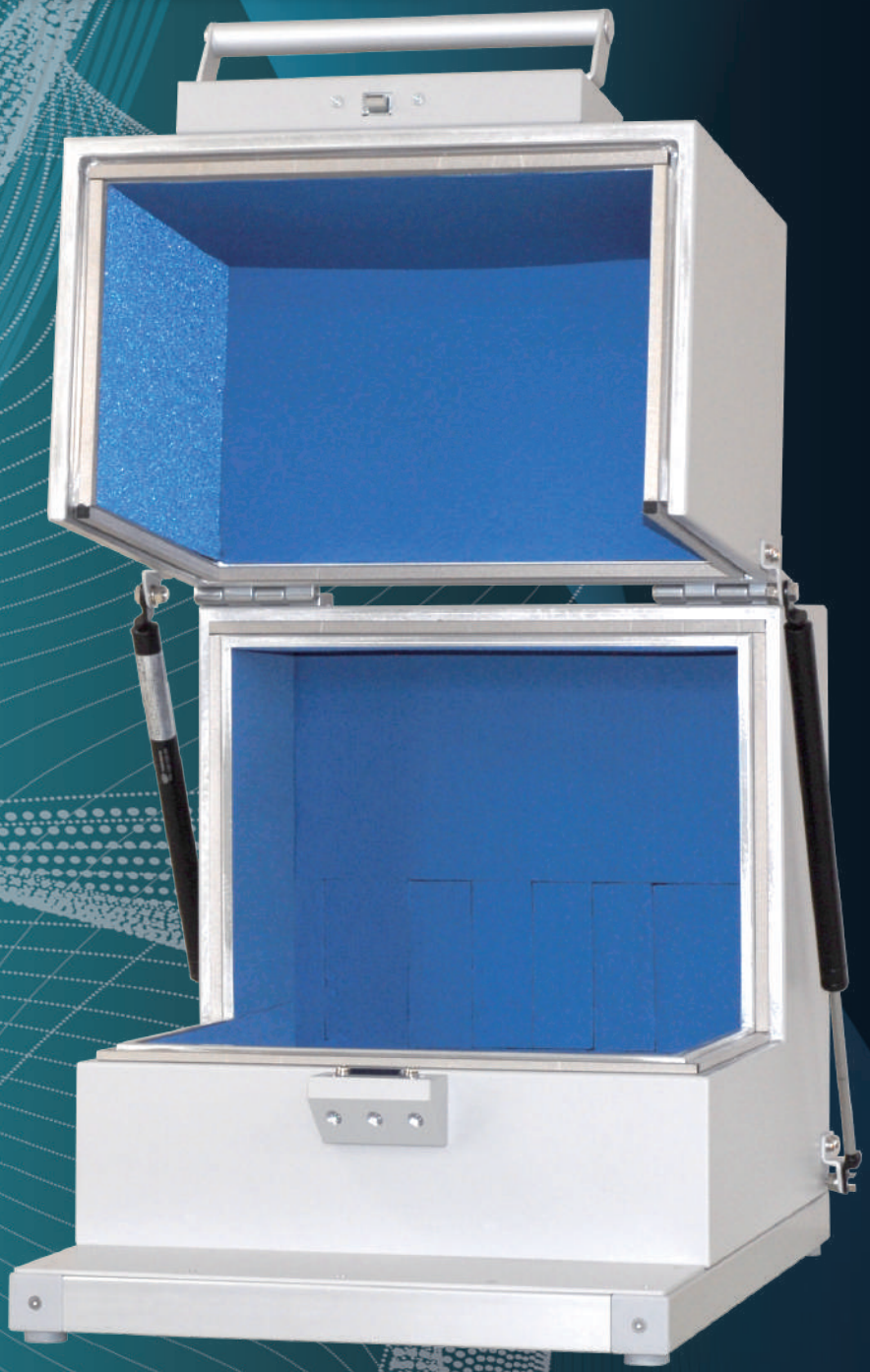
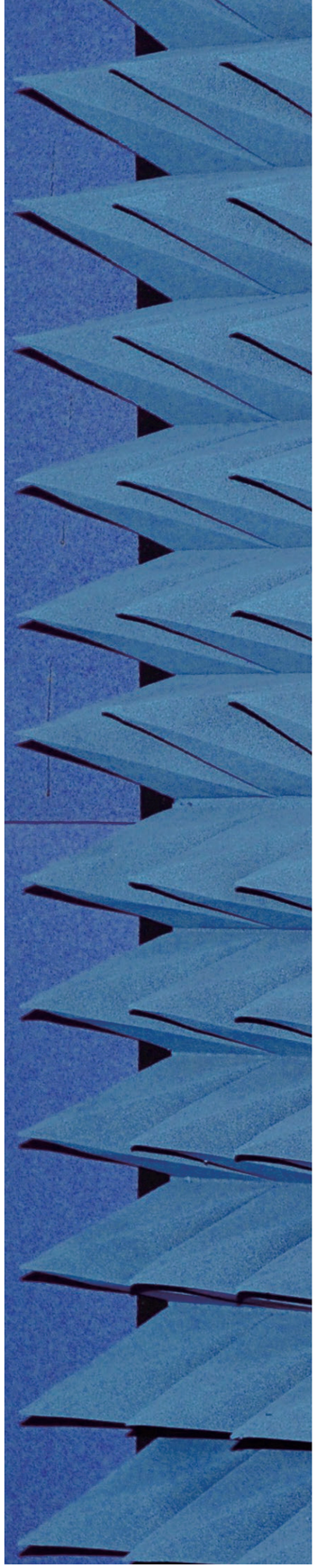
MICRONIX
MICROWAVE

Electromagnetic anechoic box and Shield box General catalog

Essentials for wireless testing. High quality and reliability electromagnetic anechoic box and shield box provided by measuring instruments manufacturer.





What is Electromagnetic anechoic box and Shield box?

1 Features of electromagnetic anechoic box and shield box.

An electromagnetic anechoic box / shield box is a box that has the following features.

- A box that is not affected by radio waves from the outside.
- A box that does not leak radio waves to the outside.

2 Differences of electromagnetic anechoic box and shield box.

The difference between an anechoic box and a shield box is whether it is a space (box) with a radio wave absorber to prevent radio waves from being reflected inside the shielded space.

- Box with radio wave absorber: Electromagnetic anechoic box
- Box without radio wave absorber: Shield box

3 Principle and overview of electromagnetic anechoic box and shield box.

The shield of radio waves mainly uses conductive materials such as metal. A radio wave absorber is a material that collides with radio waves and is converted into heat and plays a role in preventing internal reflection. A space where radio waves are not reflected (in reality, it is not completely non-reflective, but slightly reflected) can be said to simulate an environment where there are no objects around (or objects are far away).
Generally, a large space is called an electromagnetic anechoic chamber, and a small space is called an electromagnetic anechoic box. These are experimental facilities mainly used for evaluation of small wireless devices and EMC measurement. When emitting radio waves for experimental purposes, it is desirable to isolate the space so that it does not affect other radio waves or wireless communication and is not affected by other radio waves or wireless communication. It is also effective from the viewpoint of radio law measures.
A space (box) that specializes in shielding radio waves from the outside and does not use a radio wave absorber is called a shield box.

4 External structure of electromagnetic anechoic box and shield box.

A conductive material such as metal is used for the purpose of shielding radio waves. The shielding effect of the electromagnetic anechoic box is expressed by the shielding performance. Radio waves of a certain intensity are radiated from the transmitting antenna, and the electric field strength at a certain distance is measured by the receiving antenna depending on the presence or absence of an anechoic box. It is expressed in decibels (dB) by the following equation. A transmit / receive antenna, spectrum analyzer, signal generator or network analyzer is used for the measurement.

Shielding performance(dB) = $E_0 - E_1$
E_0:Electric field strength (dB) when the electromagnetic anechoic box (shield box) is not used.
E_1:Electric field strength (dB) when radio waves are radiated inside the electromagnetic anechoic box (shield box) and received outside the anechoic box.

5 Internal structure of electromagnetic anechoic box and shield box.

The electromagnetic anechoic box has a structure that suppresses internal reflection by attaching radio wave absorbers to the inner walls of all six sides, up, down, left, right, front and back. There is no radio wave absorber inside the shield box. The system that measures the radiation pattern of the antenna has a built-in turntable and rotates the test object for measurement.
The radio wave absorber itself uses urethane or styrofoam impregnated with carbon particles to make it conductive, or ferrite. The urethane and styrofoam tend to have a high effect mainly on the GHz band and above (high frequency), and the ferrite tends to have a high effect on the MHz band and below (low frequency). The urethane and styrofoam have shapes such as a quadrangular pyramid type and a flat type, and it is necessary to select them according to the frequency, characteristics, and dimensions of the radio waves to be handled. It is possible to draw a power supply and communication interface inside, but because the space is small, radio wave leakage from the connector cannot be ignored, so structural design requires specialization.

6 Necessity of electromagnetic anechoic box and shield box.

Lately, the IoT (Internet of Things) era has arrived in which various "things" are connected to networks, and many electronic devices, machines, and other "things" are now connected to networks using wireless communication. Due to the diversification of IoT devices (things), OTA (Over the Air) tests are required to evaluate wireless performance. There are various uses and frequencies such as 5G, Wi-Fi, V2X, LPWA, etc. Especially in the case of wireless communication equipment, products that have not obtained technical standard conformity certification (technical suitability) need to use an electromagnetic anechoic box to prevent the scattering of illegal radio waves.

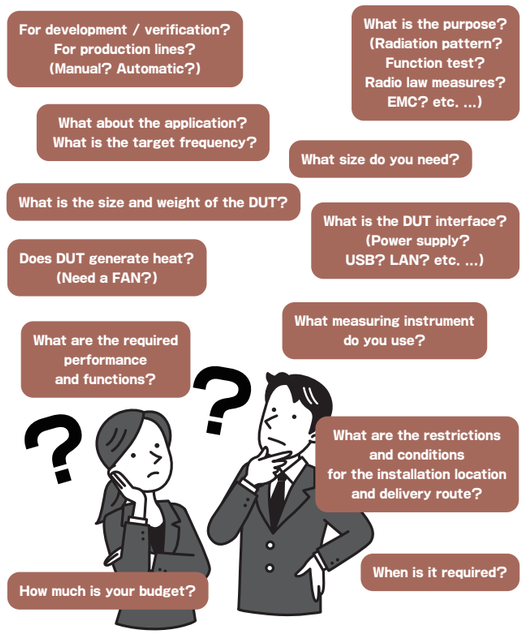
7 Differences between electromagnetic anechoic box/shield box and electromagnetic anechoic chamber/shield room

Electromagnetic anechoic boxes and shield boxes have the following advantages over large anechoic chambers and shielded rooms.

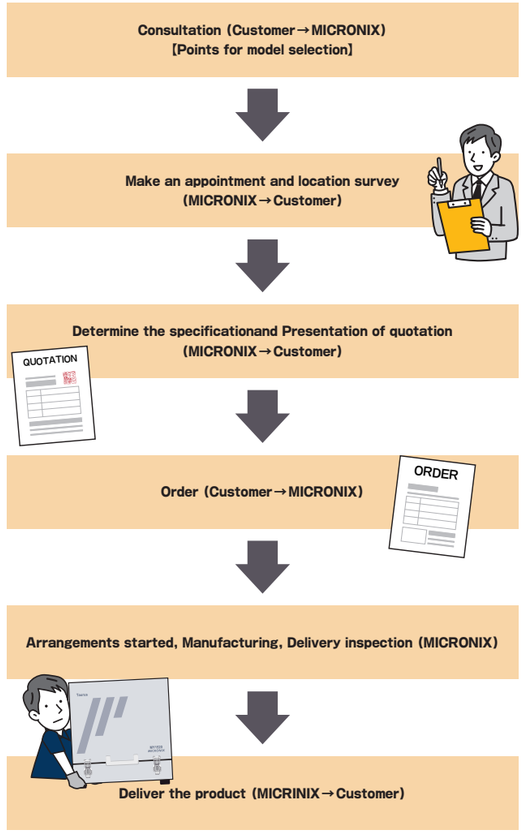
- Since measurement can be performed at hand at any time, travel time can be shortened, and measurement efficiency can be improved.
- It is possible to prevent interference with adjacent processes and wireless devices in the wireless system test process of the production line.
- Since it can be installed indoors or on a desk and can be moved, the layout can be changed flexibly.
- Most of them are cheap, lightweight, and often do not require installation work.
- Maintenance cost (running cost) can be reduced.

Selection Guide

Points for model selection



Steps to install the electromagnetic anechoic box



INDEX

Quick Guide to Radio Wave Absorption Performance

Radio wave absorber Urethane

Flat type

- Taurus series
- Production line series
- Hand-in series
- Others

Pyramidal type

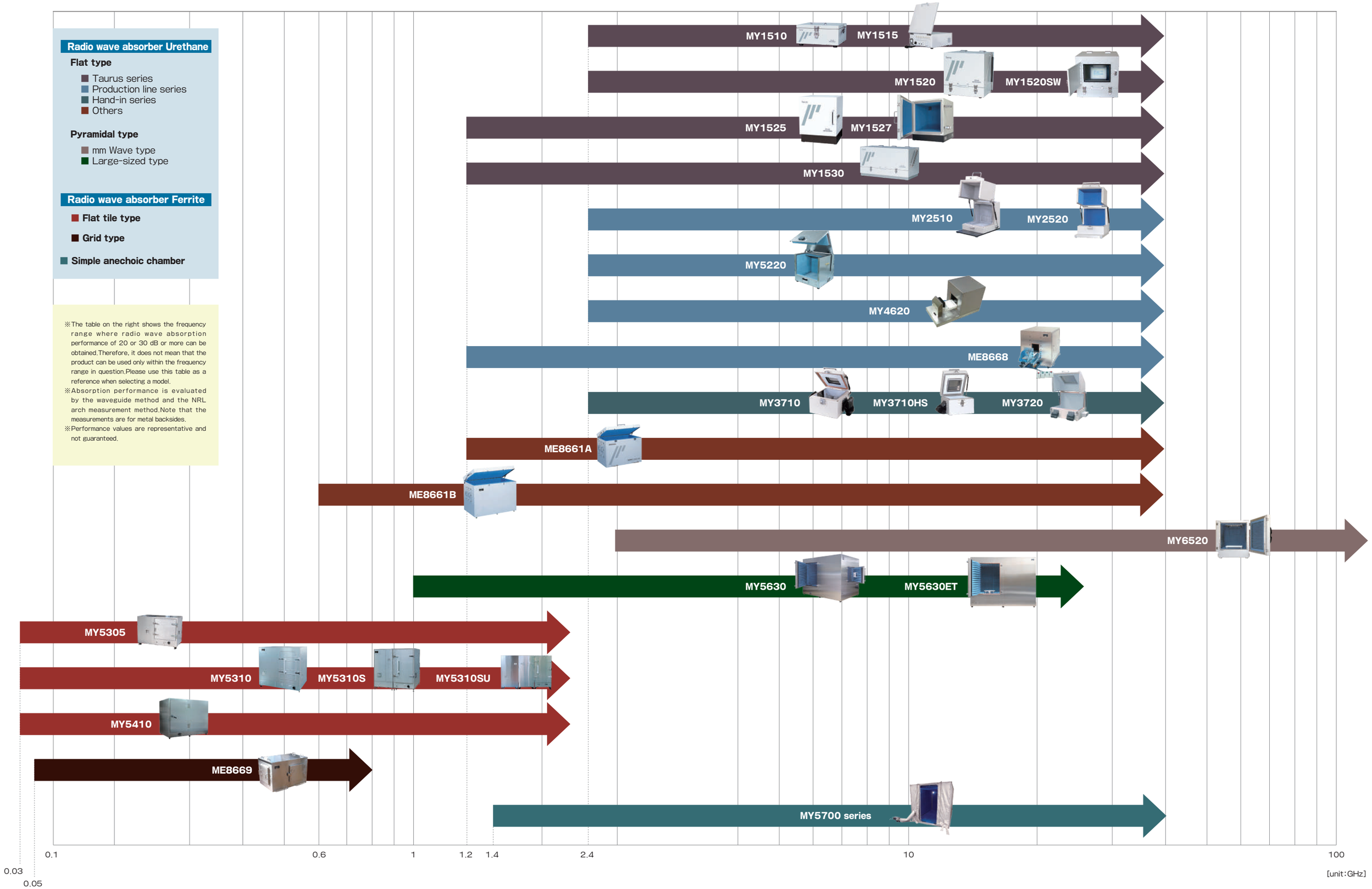
- mm Wave type
- Large-sized type

Radio wave absorber Ferrite

- **Flat tile type**
- **Grid type**

- **Simple anechoic chamber**

※The table on the right shows the frequency range where radio wave absorption performance of 20 or 30 dB or more can be obtained.Therefore, it does not mean that the product can be used only within the frequency range in question.Please use this table as a reference when selecting a model.
※Absorption performance is evaluated by the waveguide method and the NRL arch measurement method.Note that the measurements are for metal backsides.
※Performance values are representative and not guaranteed.



Taurus series
Taurus

**Low price and short delivery time are realized by providing a wide variety of interface modules.
Our best-selling series.**

MY1510

Small size：Portable and light weight type.

Outside dimensions	380(W)×165(H)×380(D)
Inside dimensions	315(W)×100(H)×315(D)
Weight	3.5kg
Shielding effectiveness	70dB typ@2.4GHz
Reflection loss	≧20dB(MYA-75:≧2.4GHz)
Connectors	SMA×2(back)
I/F Module	1 unit(back)
Option	I/F Module

All dimensions are in mm.

MY1515

Exhaust fan/air intake mounted type. The heat rise inside the anechoic chamber is suppressed, providing an ideal test environment for long hours of continuous operation, such as aging tests.

Outside dimensions	465(W)×214(H)×465(D)
Inside dimensions	400(W)×150(H)×400(D)
Weight	10kg
Shielding effectiveness	70dB typ@2.4GHz
Reflection loss	≧20dB(MYA-75:≧2.4GHz)
AC Fan	0.56m³/min (the maximum force of the wind)
Connectors	SMA×8(back)
I/F Module	1 unit(back)
Option	I/F Module

All dimensions are in mm.

MY1520

Medium size：The most general and universal type.The front opening makes it very easy to work with.

Outside dimensions	520(W)×520(H)×520(D)
Inside dimensions	455(W)×455(H)×455(D)
Weight	15kg
Shielding effectiveness	70dB typ@2.4GHz
Reflection loss	≧20dB(MYA-75:≧2.4GHz)
Connectors	SMA×2(back)
I/F Module	2 units(back)
Option	・I/F Module ・Wooden Table MT104 ・Change of radio wave absorber ・MYA-77

All dimensions are in mm.

MY1520SW

A large shield window is provided as standard equipment. Changes in the state of the EUT can be checked from outside the electromagnetic anechoic box. It can be used in a wide range of test environments, such as checking changes in display content and operation during high-speed data communication.

Outside dimensions	520(W)×520(H)×520(D)
Inside dimensions	455(W)×455(H)×455(D)
Weight	15kg
Shielding effectiveness	70dB typ@2.4GHz
Reflection loss	≧20dB(MYA-75:≧2.4GHz)
Shield window	300(W)×200(H)mm
Connectors	SMA×2(back)
I/F Module	2 units(back)
Option	・I/F Module ・Wooden Table MT104

All dimensions are in mm.

MY1525

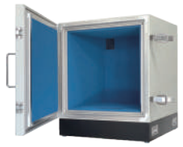
With ventilation and supports 90dB Shielding.

Outside dimensions	460(W)×570(H)×582(D)
Inside dimensions	340(W)×340(H)×400(D)
Weight	17kg
Shielding effectiveness	90dB typ@2.4GHz
Reflection loss	≧20dB(MYA-77:≧1.2GHz)
AC Fan	0.56m³/min (the maximum force of the wind)
Connectors	SMA×2(back)
I/F Module	1 unit(floor surface)
Option	I/F Module

All dimensions are in mm.

MY1527

Ideal for evaluating information and communication equipment.



Outside dimensions	620(W)×740(H)×626(D)
Inside dimensions	500(W)×500(H)×500(D)
Weight	26kg
Shielding effectiveness	90dB typ@2.4GHz
Reflection loss	≧20dB(MYA-77:≧1.2GHz)
AC Fan	0.56m³/min (the maximum force of the wind)
Connectors	SMA×4(back)
I/F Module	1 unit(floor surface)
Option	・I/F Module ・Through pipe(TP-8/10) ・Additional SMA connectors (max.16, of which 4 are standard)

All dimensions are in mm.

MY1530

Large size：Type corresponding to even big EUT. Turntable can be mounted as an option.

Outside dimensions	1120(W)×705(H)×620(D)
Inside dimensions	1000(W)×500(H)×500(D)
Weight	56kg
Shielding effectiveness	70dB typ@2.4GHz
Reflection loss	≧20dB(MYA-77:≧1.2GHz)
Connectors	SMA×4 (back×2, each side×1)
I/F Module	4 units(back)
Option	・I/F Module ・Wooden Table MT105 ・Turn Table Unit MT103 ・Change of radio wave absorber ・MYA-75, MYA-79

All dimensions are in mm.

Option

I/F Module

The I/F module is a module on which AC supply, DC supply, LAN, USB, SMA, BNC, N, D-sub or through pipe connectors are mounted. The I/F modules can be selected according to the intended use.

Available for Taurus series (except MY1525)

Model	Mounting connectors
IFM1	AC(1pc)、LAN※1(1pc)、USB※3(1pc)、D-sub9※5(1pc)
IFM2	AC(1pc)、LAN※1(2pcs)、USB※3(2pcs)、D-sub9※5(1pc)
IFM3	AC(1pc)、LAN※1(2pcs)、USB※3(2pcs)、D-sub25※6(1pc)
IFM4	DC(1pc)、LAN※1(1pc)、USB※3(1pc)、D-sub9※5(1pc)、D-sub25※6(1pc)
IFM5B	SMA(4pcs)、BNC(2pcs)、N(2pcs)
IFM6-1	Through pipe(1pc)
IFM6-2	Through pipe(2pcs)
IFM7	AC(1pc)、LAN※2(1pc)、USB※4(1pc)
IFM8	DC(2pcs)、LAN※2(1pc)、USB※4(1pc)
IFM9	LAN※2(2pcs)、USB※4(2pcs)

Available for MY1525

Model	Mounting connectors
IFM10	AC(1pc)、LAN※1(1pc)、USB※3(2pcs)、D-sub9※5(1pc)
IFM11	DC(1pc)、LAN※1(1pc)、USB※3(2pcs)、D-sub9※5(1pc)

MY1520 equipped with two I/F module

※1. Cat 5e equivalent ,PoE not supported
※2. Cat 6A equivalent ,PoE+ supported
※3. USB2.0,Type-A(Inside/Outside) ,Power Delivery(PD) not supported
※4. USB3.1 Gen1,Type-A(Inside/Outside) ,Power Delivery(PD) not supported
※5. male(Inside/Outside) ,fit M2.6(metric screw threads)
※6. female(Inside/Outside) ,fit M2.6(metric screw threads)

※For more information, see the "IF Module" section on page 32.

Turn table Unit MT103

Manual Turn table unit for MY1530/1530N.

Dimensions	200mmΦ
Load	10kg
Table material	Acrylic resin
Rotation angle	360°
Rotation step	10°

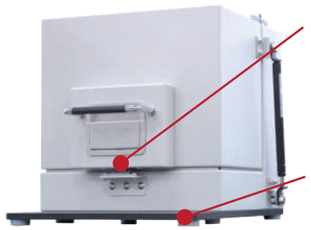
Wooden Table MT104/105

For MY1520/MY1530.
With casters.

Mode	Corresponding product	Dimensions(W×H×D)	Load
MT104	MY1520/N	600×700×600mm	100kg
MT105	MY1530/N	1220×700×720mm	100kg

MY2510

One-touch lock mechanism shortens takt time. Jig device can be installed.



One touch lock mechanism
The shield effect is maintained despite simple opening and closing motion, and the burden on the operator will be also reduced.

Safety against overturning
It can be fixed to the working desk or shelf because integrated with the pedestal.

Specifications

Outside dimensions	315(W) ×355(H) ×315(D)mm
Inside dimensions	250(W) ×250(H) ×250(D)mm
Weight	8.5kg
Structure	Double structures with radio wave absorber and aluminum plate
Shielding effectiveness	70dB typ@2.4GHz
Reflection loss	≧20dB (MYA-75: ≧2.4GHz)
Connectors	SMA(J) ×2(back)
IF Module	1 unit(back)

Option

■I/F Module

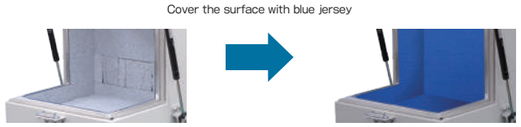
Model	Mounting connectors
IFM1	AC(1pc)、LAN※1(1pc)、USB※3(1pc)、D-sub9※5(1pc)
IFM2	AC(1pc)、LAN※1(2pcs)、USB※3(2pcs)、D-sub9※5(1pc)
IFM3	AC(1pc)、LAN※1(2pcs)、USB※3(2pcs)、D-sub25※6(1pc)
IFM4	DC(1pc)、LAN※1(1pc)、USB※3(1pc)、D-sub9※5(1pc)、D-sub25※6(1pc)
IFM5B	SMA(4pcs)、BNC(2pcs)、N(2pcs)
IFM6-1	Through pipe(1pc)
IFM6-2	Through pipe(2pcs)
IFM7	AC(1pc)、LAN※2(1pc)、USB※4(1pc)
IFM8	DC(2pcs)、LAN※2(1pc)、USB※4(1pc)
IFM9	LAN※2(2pcs)、USB※4(2pcs)

※For more information, see the "IF Module" section on page 32.

■Surface treatment of radio wave absorber

This prevents fragment of radio wave absorber from adhering to products.

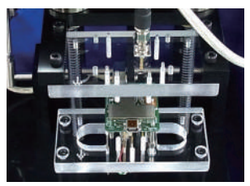
Cover the surface with blue jersey



Customizations

■Installing jigs

The specified jig is fixed in the anechoic box after processing the main body. (Only when shipping)



■Modification of rear part

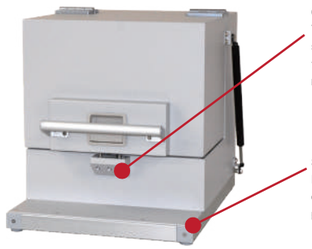
If the antenna or connector position is changed in the future, the desired panel can be installed after removing the rear panel.

The panel is removed

After installing the panel

MY2520

One-touch lock mechanism shortens takt time. Jig device can be installed. Larger than MY2510.



One touch lock mechanism
The shield effect is maintained despite simple opening and closing motion, and the burden on the operator will be also reduced.

Safety against overturning
It can be fixed to the working desk or shelf because integrated with the pedestal.

Specifications

Outside dimensions	470(W) ×520(H) ×470(D)mm
Inside dimensions	400(W) ×400(H) ×400(D)mm
Weight	20kg
Structure	Double structures with radio wave absorber and aluminum plate
Shielding effectiveness	70dB typ@2.4GHz
Reflection loss	≧20dB (MYA-75: ≧2.4GHz)
Connectors	SMA(J) ×4(back)
IF Module	2 units(back)

Option

■I/F Module

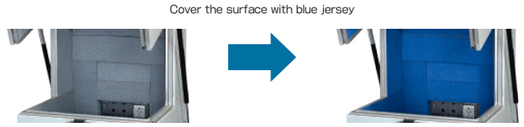
Model	Mounting connectors
IFM1	AC(1pc)、LAN※1(1pc)、USB※3(1pc)、D-sub9※5(1pc)
IFM2	AC(1pc)、LAN※1(2pcs)、USB※3(2pcs)、D-sub9※5(1pc)
IFM3	AC(1pc)、LAN※1(2pcs)、USB※3(2pcs)、D-sub25※6(1pc)
IFM4	DC(1pc)、LAN※1(1pc)、USB※3(1pc)、D-sub9※5(1pc)、D-sub25※6(1pc)
IFM5B	SMA(4pcs)、BNC(2pcs)、N(2pcs)
IFM6-1	Through pipe(1pc)
IFM6-2	Through pipe(2pcs)
IFM7	AC(1pc)、LAN※2(1pc)、USB※4(1pc)
IFM8	DC(2pcs)、LAN※2(1pc)、USB※4(1pc)
IFM9	LAN※2(2pcs)、USB※4(2pcs)

※For more information, see the "IF Module" section on page 32.

■Surface treatment of radio wave absorber

This prevents fragment of radio wave absorber from adhering to products.

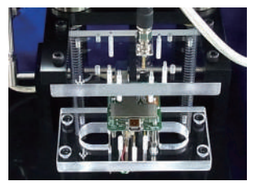
Cover the surface with blue jersey



Customizations

■Installing jigs

The specified jig is fixed in the anechoic box after processing the main body. (Only when shipping)



※The photo is MY2510.

■Modification of rear part

If the antenna or connector position is changed in the future, the desired panel can be installed after removing the rear panel.

The panel is removed

After installing the panel

MY5220

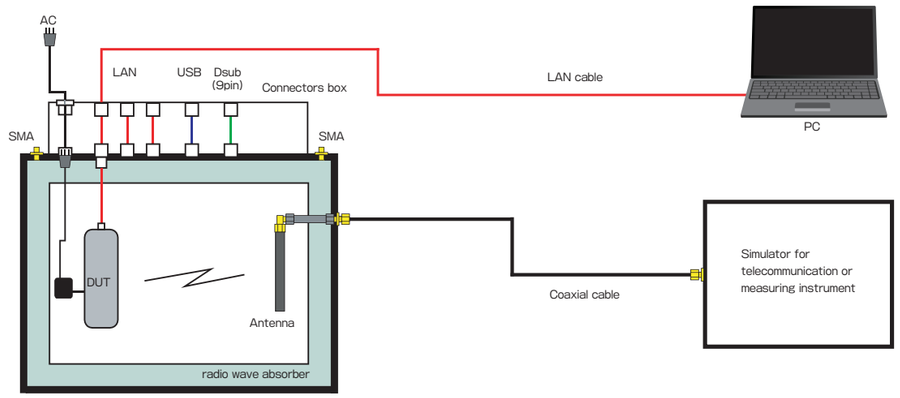
Equipped with a jig mounting base (made of resin) on the floor as standard equipment.
Size between MY2510 and MY2520.

Specifications

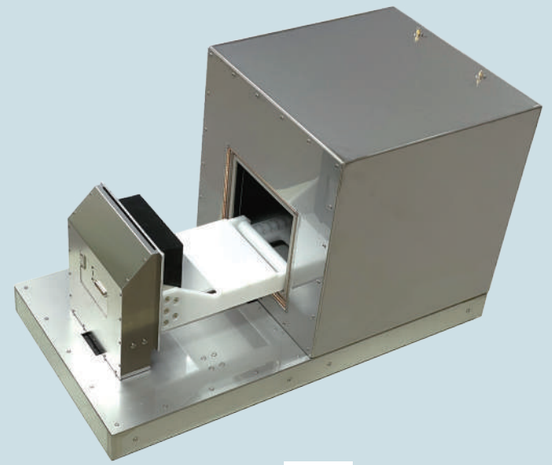
Outside dimensions	456(W)×416(H)×416(D)mm
Inside dimensions	390(W)×340(H)×340(D)mm
Weight	25kg
Jig mount base dimensions	350(W)×16(H)×300(D)mm
Structure	Double structure composed of radio wave absorber and stainless steel.
Shielding effectiveness	75dB typ@2.4GHz
Reflection loss	≧20dB(MYA-75: ≧2.4GHz)
Connectors	SMA×3 (side×1, back×2)
Option (Connectors box)	・D-sub9 pin×1 ・LAN×3 ・USB×1 ・AC power×1(with power cable)

Applications

This measuring system decreases the influences of external noise or internal multipath, so that a precise test of wireless LAN can be realized stably.
By adding connector box, many interfaces are available and the influences from /to the outside through signal lines can be decreased still more by noise filter coupled with lines.



※We also accept custom support such as changing / adding dimensions / shapes and connectors.



Click here to see it in action you can see it here (Youtube)
URL:https://youtu.be/CoCyXXPQHUs

MY4620

Automatic opening and closing type shield box (anechoic box) equipped with an electric automatic carrier.

■ The shield box can be opened and closed automatically by a control PC or PLC.If the optional control box (MY4620-CB) is used, it can be opened and closed using push buttons.

■ Compared with the air cylinder type, the positioning accuracy is higher, and the parameter setting is easier. (For parameter setting, use the TB-02 teaching box manufactured by IAI.)

■ The rear side is a full maintenance panel for easy adjustment and removal of jigs and other equipment.

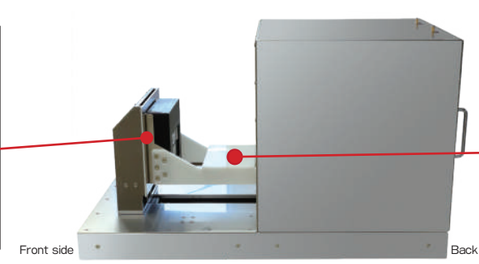
Specifications

Outside dimensions (main body)	480(W)×480(H)×486(D)mm
Inside dimensions	400(W)×400(H)×410(D)mm
Weight	47kg
Maximum outside dimensions (including the base)	480(W)×570(H)×972(D)mm
Conveyance section opening dimensions	220(W)×200(H)mm
EUT allowable dimensions	≦200(W)×140(H)×140(D)mm
EUT allowable weight	≦2kg
Main material (main body)	Stainless
Main material (EUT transfer table)	POM
Structure	Double structure of stainless-steel plate and radio wave absorber
Shielding effectiveness	≧60dB@2.4GHz
Radio wave absorber	MYA-75 (thickness approx. 3cm)
Shielding characteristics(typ)	≧20dB@2.4GHz
Connectors	SMA(J-J)×2(top surface), GND terminal×1 (back)
IF (for EUT)	D-sub25pin×1、USB2.0×1、LAN×1
Conveyance section	・Power supply：Single-phase AC100V ・Control: D-sub 15pin ・Adjustment: Mini DIN 8pin (for teaching box connection)
Option	・Radio wave absorber surface treatment (blue jersey) MY4620-BJ Prevents rags and carbon powder from sticking to the EUT ・Control Box MY4620-CB This is a controller for automatic opening and closing by push button station. 

■ Back side

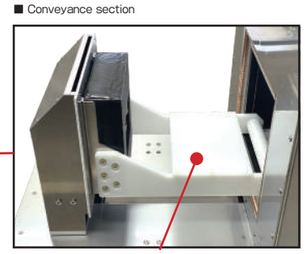
When the rear panel is removed for maintenance

inner side



Front side　Back side

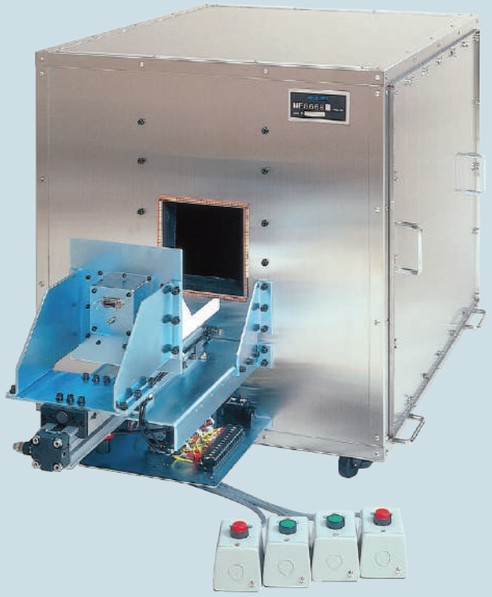
■ Conveyance section



EUT installation table

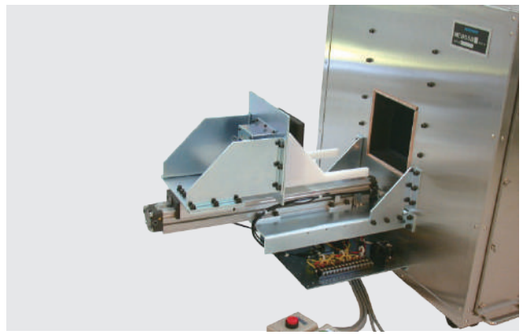
Production line series

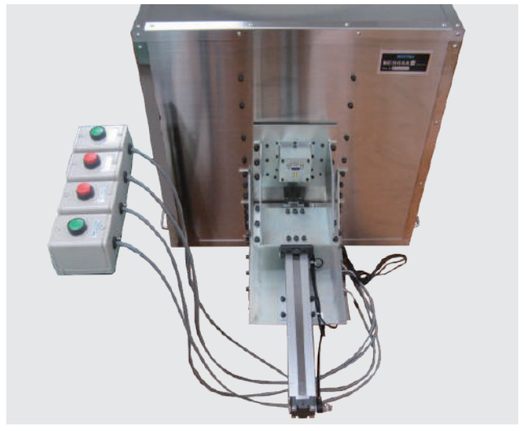
Easy to open and close. Reduce the burden on workers.

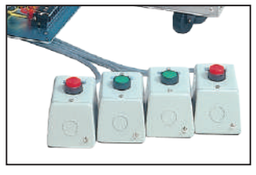


ME8668

An automatic opening/closing type shield box (anechoic box) equipped with an air cylinder type automatic conveyor.







Open and close with the attached push button.

- Simultaneous green button press: close
- Press red button at the same time: Open

Specifications

Outside dimensions	922(W)×794(H)×731(D)mm
Inside dimensions	790(W)×605(H)×605(D)mm
Weight	94kg(including the conveyor)
Automatic conveyor conveyance section dimensions	634(W)×496(H)×260(D)mm
EUT allowable dimensions	110(W)×150(H)×150(D)mm
EUT allowable weight	2kg
Structure	Double structure composed of radio wave absorber and stainless steel.
Shielding effectiveness	70dB typ@2.4GHz
Reflection loss	≧20dB(MYA77:≧1.2GHz)
Connectors	SMA×2(conveyance section×1、back×1)

Customizations

Capable of changing or adding size, connector, or function from / to above standard specifications.

- Table for DUT
- Changing DUT mounting part in conveyer
- Removing automatic conveyer
- Receiving antenna (Selection of optimum antenna suited for DUT)
- Reference antenna (Selection of optimum antenna suited for DUT)
- Door
- Adding RF connectors (N-SMA/BNC etc.)
- Adding multi pins connector(D-sub etc.)
- Changing size
- Changing shape
- Selection of radio wave absorber
- Others

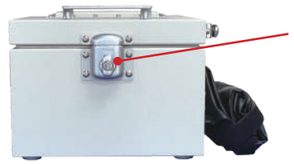
open on one side

Hand-in series

Can be operated by hand while looking inside through the window.

MY3710

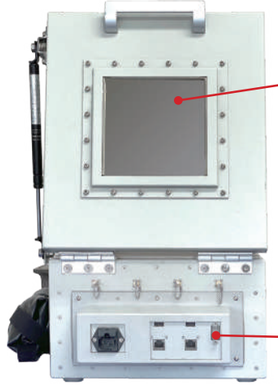
Suitable for evaluation of devices such as cellular phone, smart-phone, tablet terminal and portable game machine with wireless communication function.



Specifications

Outside dimensions	320(W)×260(H)×360(D)mm
Inside dimensions	250(W)×160(H)×290(D)mm
Weight	8kg
Structure	Double structures with radio wave absorber and aluminum plate.
Shielding effectiveness	≧60dB(600MHz to 6GHz)
Reflection loss	≧20dB(≧2.4GHz)
Shield window dimensions	140(W)×140(D)mm
Connectors	SMA×4(back)
Option	・I/F module (possible of installing one module of IFM1 to IFM9 on the back.) ・Shielded arm cover MY3700-001 (factory option *Standard is only one side.) ・Conduction arm supporter MY3700-002 ・Anechoic box stand MY3700-101 (adjustable inclination angle) ・LED light MY3700-102 (battery drive, factory option with mounting bracket) ※See “Options” on page 16 for details.

Features



Despite of use of shield window, shielding effectiveness over 60dB is ensured at frequency from 600MHz to 6GHz.
The various radio waves such as 3G/4G(LTE/WiMAX)/5G/ Wi-Fi(2.4GHz & 5GHz bands) which are a mainstream in communication system of mobile terminal will be blocked off.
This performance is realized by our own technology regarding shield window.

One I/F module can be attached to the back.

Despite its small size and light weight, one or both hands (option: when MY3700-001 is installed) can be inserted, and the DUT can be operated with bare hands. A 10-inch tablet terminal can be inserted.
Since it is possible to operate directly with bare hands, poor reaction of touch panel by using the glove type will be eliminated and the fine operation will be able to be done.

Shielded arm cover
MY3700-001
※Factory option

MY3710HS

High shield performance type of MY3710. (≧80dB)
Suitable for weak electric field resistance test, out-of-service test or digital forensics for mobile phone, smart phone, or tablet terminal.

Specifications

Outside dimensions	320(W)×260(H)×360(D)mm
Inside dimensions	250(W)×145(H)×290(D)mm
Weight	9kg
Structure	Double structures with radio wave absorber and aluminum plate.
Shielding effectiveness	≧80dB(600MHz to 6GHz)
Reflection loss	≧20dB(≧2.4GHz)
Shield window dimensions	140(W)×140(D)mm
Connectors	SMA×4(back)
Option	・I/F module (possible of installing one module of IFM1 to IFM9 on the back.) ・Shielded arm cover MY3700-001 (factory option, *Standard is only one side.) ・Conduction arm supporter MY3700-002 ※See “Options” on page 16 for details.

Features

Despite of use of shield window, shielding effectiveness over 80dB is ensured at frequency from 600MHz to 6GHz.
The various radio waves such as 3G/4G(LTE/WiMAX)/5G/Wi-Fi(2.4GHz & 5GHz bands) which are a mainstream in communication system of mobile terminal will be blocked off.
This performance is realized by our own technology regarding shield window.

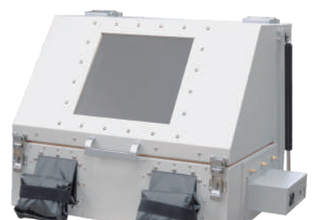
By exchanging the optional I/F module, the various interfaces can be used.
Since the noise filter is inserted in almost these interfaces, the influence of noise entering from the cable will be reduced.

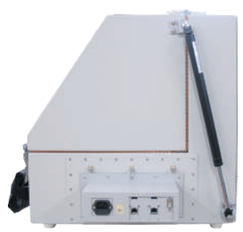
Despite its small size and light weight, one or both hands (option: when MY3700-001 is installed) can be inserted, and the DUT can be operated with bare hands. A 10-inch tablet terminal can be inserted.
Since it is possible to operate directly with bare hands, poor reaction of touch panel by using the glove type will be eliminated and the fine operation will be able to be done.

Shielded arm cover MY3700-001
※Factory option

MY3720

The larger interior space enables weak field and out-of-range testing of large tablet terminals, mobile PCs, stationary game consoles with wireless communication functions, etc.

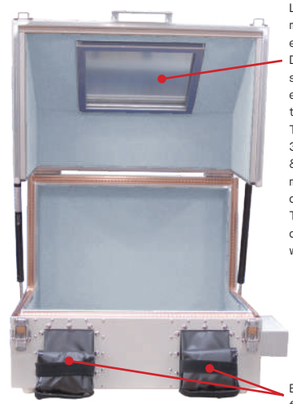




Specifications

Outside dimensions	615(W)×515(H)×518(D)mm
Inside dimensions	550(W)×450(H)×450(D)mm
Weight	21kg
Structure	Double structures with radio wave absorber and aluminum plate.
Shielding effectiveness	≧60dB(600MHz to 6GHz)
Reflection loss	≧20dB(≧2.4GHz)
Shield window dimensions	275(W)×255(D)mm
Connectors	SMA×6(each side×3)
Option	・I/F module (possible of installing one module of IFM1 to IFM9 on the back.) ・Conduction arm supporter MY3700-002 ・LED light MY3700-102 (2 can be attached, battery drive, factory option with mounting bracket) ※See “Options” on page 16 for details.

Features



Large shield window of 275 × 255 mm. It has a large viewing angle and is easy to see on a large display.
Despite of use of shield window, shielding effectiveness over 60dB is ensured at frequency from 600MHz to 6GHz.
The various radio waves such as 3G/4G (LTE/WiMAX)/Wi-Fi(2.4GHz & 5GHz bands) which are a mainstream in communication system of mobile terminal will be blocked off.
This performance is realized by our own technology regarding shield window.

Both hands can be inserted from the front

Since it is possible to operate directly with bare hands, poor reaction of touch panel by using the glove type will be eliminated and the fine operation will be able to be done.

A 21.5-inch-wide monitor size DUT can be inserted.

One I/F module can be installed on each side.

Option

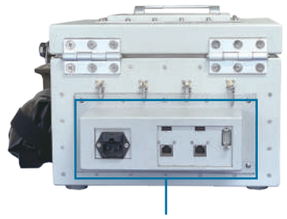
I/F Module

The I/F module is a module on which AC supply, DC supply, LAN, USB, SMA, BNC, N, D-sub or through pipe connectors are mounted. The I/F modules can be selected according to the intended use.

■Available for Taurus, MY2500 and MY3700 series (except MY1525)

Model	Mounting connectors
IFM1	AC(1pc)、LAN※1(1pc)、USB※3(1pc)、D-sub9※5(1pc)
IFM2	AC(1pc)、LAN※1(2pcs)、USB※3(2pcs)、D-sub9※5(1pc)
IFM3	AC(1pc)、LAN※1(2pcs)、USB※3(2pcs)、D-sub25※6(1pc)
IFM4	DC(1pc)、LAN※1(1pc)、USB※3(1pc)、D-sub9※5(1pc)、D-sub25※6(1pc)
IFM5B	SMA(4pcs)、BNC(2pcs)、N(2pcs)
IFM6-1	Through pipe(1pc)
IFM6-2	Through pipe(2pcs)
IFM7	AC(1pc)、LAN※2(1pc)、USB※4(1pc)
IFM8	DC(2pcs)、LAN※2(1pc)、USB※4(1pc)
IFM9	LAN※2(2pcs)、USB※4(2pcs)

※For more information, see the "IF Module" section on page 32.



MY3710 with I/F module

※1, Cat 5e equivalent ,PoE not supported
※2, Cat 6A equivalent ,PoE+ supported
※3, USB2.0,Type-A(Inside/Outside) ,Power Delivery(PD) not supported
※4, USB3.1 Gen1,Type-A(Inside/Outside) ,Power Delivery(PD) not supported
※5, male(Inside/Outside) ,fit M2.6(metric screw threads)
※6, female(Inside/Outside) ,fit M2.6(metric screw threads)

Shielded arm cover MY3700-001

※For MY3710/HS only

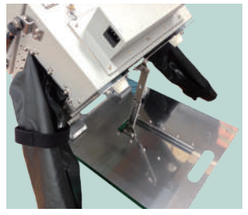
Item	Model	Features
Shielded arm cover	MY3700-001	This option is required when inserting both hands into the MY3710/HS. ※Factory option. Standard equipment only on one side.

Conduction arm supporter MY3700-002

Item	Model	Features
Conduction arm supporter	MY3700-002	This increases the conductivity between the shield arm cover because conductive material is used. Also protects the shielded arm cover.

Anechoic box stand MY3700-101

For MY3710 only



With an inclination angle adjustment function. Convenient for sitting work.

When the Anechoic box Stand is fixed (0°)

When the Anechoic box Stand is fixed (35°)

When the Anechoic box Stand is fixed (45°)

LED light MY3700-102

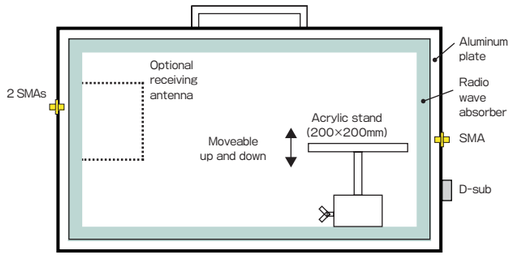
Battery powered LED light. The visibility inside the electromagnetic anechoic box will be improved.
※Factory option. With mounting bracket.
※For MY3710 and MY3720 only.

ME8661A

Medium-sized Electromagnetic anechoic box compatible with 1.2GHz and above.

A simple anechoic box that can be used in the installed state. It has a double structure of radio wave absorber and aluminum plate and covers the frequency band from low frequency to 18GHz.
An acrylic stand for placing the DUT is installed, and the structure is such that the optional receiving antenna can be easily attached.

■Structure



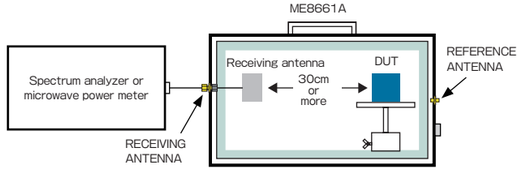
820(W)×608(H)×503(D)mm

Specifications

Outside dimensions	820(W)×608(H)×503(D)mm
Inside dimensions	690(W)×380(H)×380(D)mm
Weight	38kg
Structure	Double structure of radio wave absorber and aluminum plate
Shielding effectiveness	65dB type@2.4GHz
Reflection loss	≧20dB(MYA-77:≧1.2GHz)
Acrylic table dimensions	200×200mm
Connectors	・SMA×3(reference side×1, reception side×2) ・25 pins D-sub
Option	Receiving spiral antenna
	Standard spiral antenna (With antenna gain and RF coupling data)
	Receiving horn antenna
	Standard horn antenna (With antenna gain and RF coupling data)
	Microwave coaxial cable (0.5m, 3m, 4m)
	Microwave fixed attenuator(1 to 10,12,13,15,20dB)
	50Ω Terminator(SMA)
	Turn table (Manual)
	Caster

Applications

■1. Wireless system test



The following wireless system tests can be performed in free space close to the actual usage conditions of mobile phones, ETC on-board units, wireless LAN, wireless communication devices, etc. Tests of power transmission, transmission frequency, spurious, occupied bandwidth, power leakage during carrier off, modulation index, transmission eye aperture ratio, etc.

■2：Antenna test

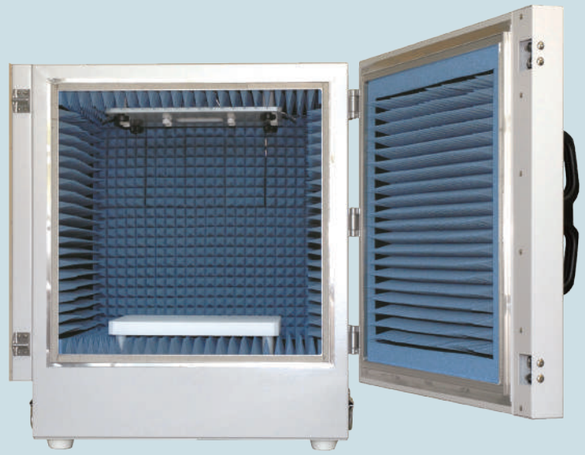
By connecting the signal source to the connector for the reference antenna and connecting the measuring instrument to the connector for the receiving antenna, the characteristic data of the antenna can be obtained.

■3：As an electromagnetic anechoic box

It can be used as a mere electromagnetic anechoic box without attaching an antenna. It is most suitable for a simple preliminary experiment of EMC test or when you want to shield from the external electromagnetic field.

ME8661B

Large Electromagnetic anechoic box compatible with 600MHz and above.



MY6520

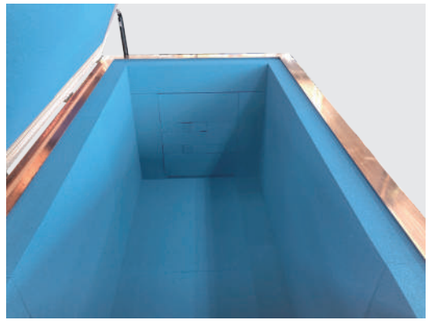
Suitable for simple OTA examinations (protocol function, throughput) such as 5G NR Mobile Device, chip set.

Size comparison with ME8661A

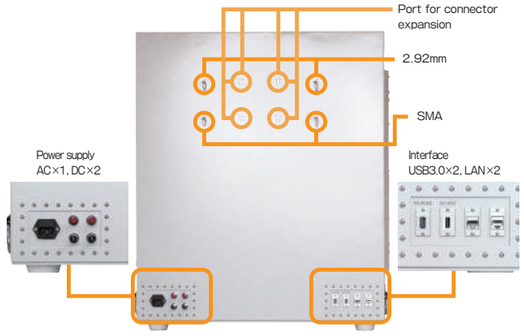
Specifications

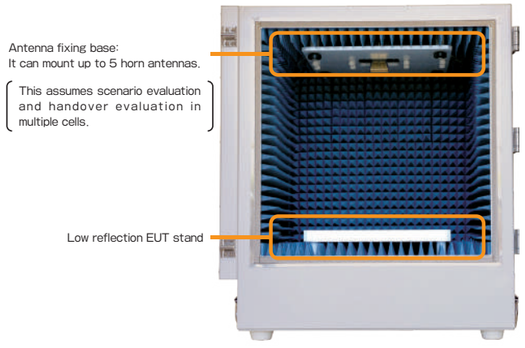
Outside dimensions	1520(W)×1100(H)×900(D)mm
Inside dimensions	1200(W)×600(H)×600(D)mm
Weight	230kg
Structure	Double structure of radio wave absorber and aluminum plate
Shielding effectiveness	65dB typ@2.4GHz
Reflection loss	≧20dB(MYA-79:≧600MHz)
Connectors	・SMA×3(reference side×1, reception side×2) ・25 pins D-sub
Option	Receiving spiral antenna
	Standard spiral antenna (With antenna gain and RF coupling data)
	Receiving horn antenna
	Standard horn antenna (With antenna gain and RF coupling data)
	Microwave coaxial cable (0.5m, 3m, 4m)
	Microwave fixed attenuator(1 to 10,12,13,15,20dB)
	50Ω Terminator(SMA)
	Turn table (Manual)

Inside



- Small, lightweight, and low price electromagnetic anechoic box specialized for protocol function tests.
- Internal reflection is reduced due to the characteristics of the pyramid type radio wave absorber.
- Equipped with low reflection EUT stand and antenna fixing base.
- With the factory option, can be changed additional RF connectors and Interface specifications.
- One touch lock mechanism (with key)
- Customization available





Specifications

Outside dimensions	743(W)×830(H)×721(D)mm
Inside dimensions	500(W)×500(H)×500(D)mm
Weight	33kg(Main part)
Shielding effectiveness	≧60dB@700MHz to 6GHz @20GHz to 30GHz
Radio Wave absorber reflection loss (representative value)	Pyramid urethane type 25dB@3GHz, 35dB@5GHz, 40dB@10GHz, 45dB@15GHz, ≧50dB@24GHz
RF connectors(back)	2.92mm(J-J)×2、SMA(J-J)×2
Interface(back)	・AC×1(100V, single-phase two-wire system + ground wire.) ・DC×2(Johnson terminal 4poles) ・USB3.0 TypeA×2(With polarity:Outside Device-In side Host ×1, Outside Host-In side Device×1) ・LAN×2(Cat.6A, PoE not supported)
Main material	Aluminum
Other	・Low reflection EUT stand@inside bottom ・Antenna fixing base@inside upper
Option (factory options)	■ Adding RF connectors (MY6500-K/MY6500-SMA) ・2.92mm(K)connector or SMA connector can be expanded up to a total of four. ■ Interface(customize) ・Can be changed from USB3.0 to USB2.0(No polarity) ・Change the polarity (Device/Host) of USB3.0 ・Combination of USB and LAN can be changed(ex :USB×4, etc.)

Option

■Horn antenna

- **MY6500-01**
  Linear polarization. Frequency range：26GHz to 40GHz
- **MY6500-02E**
  Covers both horizontal and vertical polarization.
  Frequency range：5GHz to 50GHz

MY6500-01　MY6500-02E

■Adapter

- **MY6500-A1**：
  Adapter (2.92mm, P-J)
- **MY6500-A2**
  Conversion adapter (2.4mm to 2.92mm, P-J)

■Coaxial cable (Shield box to Antenna)

- **MY6500-C061**：Length:61cm(2.92mm, P-P)

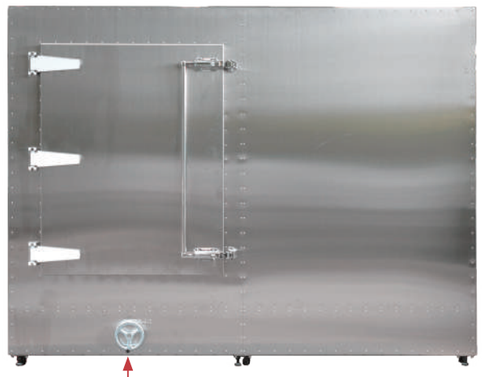
■Add RF connectors (factory option)

- **MY6500-K**
  2.92mm Connectors
- **MY6500-SMA**
  SMA Connectors

Manual turntable included

MY5630

Suitable for developing antennas and evaluating communication characteristics such as wireless devices.

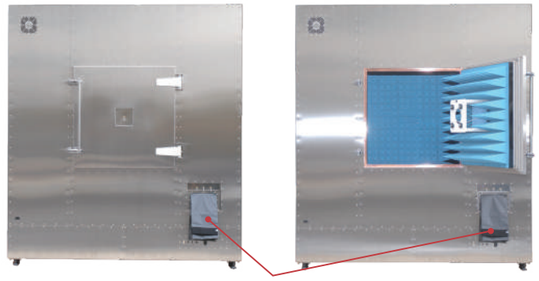


Knobs for manual turntables

Specifications

Model	MY5630
Outside dimensions	2504(W)×1704(D)×1921.5(H)mm
Inside dimensions	2010(W)×1210(D)×1140(H)mm
Weight	750kg
Structure	・Exterior: Stainless steel, Double thin plates ・Frame: Stainless steel, 40mm square tube
Radio wave absorber	Pyramid urethane type 8inch
Shielding effectiveness	≧80dB@800MHz-12GHz(typ) (When using shield sheet, ≧60dB)
Reflection loss	30dB@1GHz, 40dB@3GHz, 50dB@5GHz(typ)
Front door	Door opening dimensions 900(W)×1150(H)mm
Maintenance door	Door opening dimensions 675(W)×675(H)mm Installing antenna fixing base made of resin
Turntable	Manual
	500mm in diameter/30kg in load Uniform static load @center of table Structure POM(White)
Exhaust fan and intake	・Intake (Below left side) ・Exhaust fan (Upper right side, AC inlet below right side)
Interface	USB×2, LAN×2, Power supply×1※, D-sub9pin×1, Shield sheet×1, SMA(J)×5 (※Select either AC 100V or DC.)
Option	・Double Ridge Horn Antenna Set: MY5630-01 ・Log Periodic Antenna Set: MY5630-02 ・Shield Sheet (Maintenance door side): MY5630-03 ・Wooden Base: MY5630-04

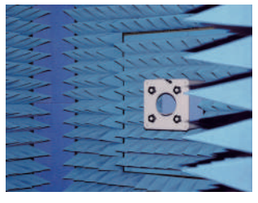
■Maintenance door(Right side)



When shield sheet MY5630-03(option) is installed

■Left side

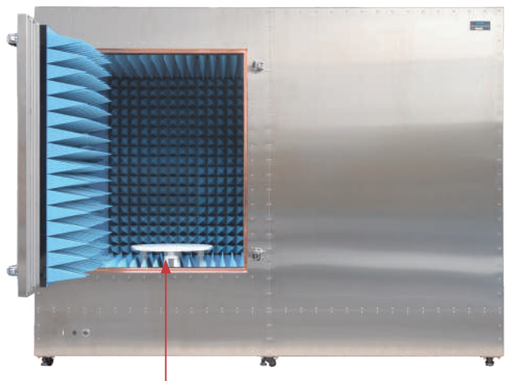
■Antenna fixing base



Electric turntable included

MY5630ET

Suitable for developing antennas and evaluating communication characteristics such as wireless devices. Automatic measurement is possible with an electric turntable.

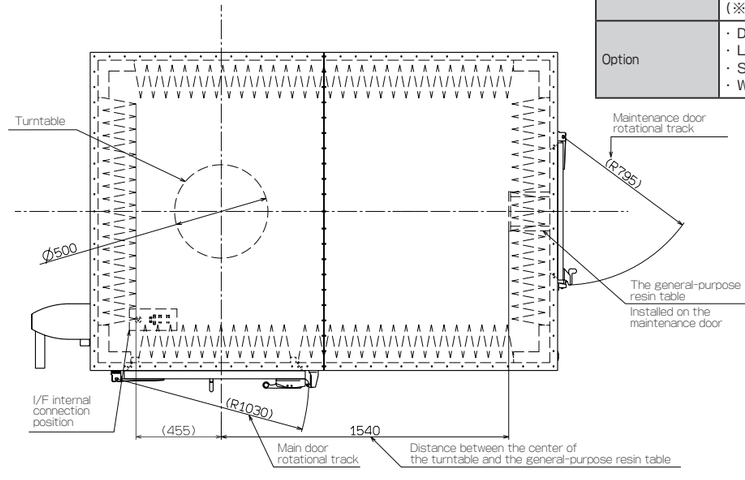


Electric turntable

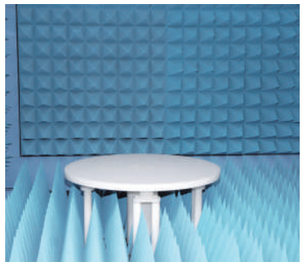
Specifications

Model	MY5630ET
Outside dimensions	2504(W)×1704(D)×1921.5(H)mm
Inside dimensions	2010(W)×1210(D)×1140(H)mm
Weight	765kg
Structure	・Exterior: Stainless steel, Double thin plates ・Frame: Stainless steel, 40mm square tube
Radio wave absorber	Pyramid urethane type 8inch
Shielding effectiveness	≧80dB@800MHz-12GHz(typ) (When using shield sheet, ≧60dB)
Reflection loss	30dB@1GHz, 40dB@3GHz, 50dB@5GHz(typ)
Front door	Door opening dimensions 900(W)×1150(H)mm
Maintenance door	Door opening dimensions 675(W)×675(H)mm Installing antenna fixing base made of resin
Turntable	Automatic
	500mm in diameter/30kg in load Uniform static load @center of table Structure POM(White)
Exhaust fan and intake	・Intake (Below left side) ・Exhaust fan (Upper right side, AC inlet below right side)
Interface	USB×2, LAN×2, Power supply×1※, D-sub9pin×1, Shield sheet×1, SMA(J)×5 (※Select either AC 100V or DC.)
Option	・Double Ridge Horn Antenna Set: MY5630-01 ・Log Periodic Antenna Set: MY5630-02 ・Shield Sheet (Maintenance door side): MY5630-03 ・Wooden Base: MY5630-04

■Flat Pattern of MY5630ET



■Electric turntable



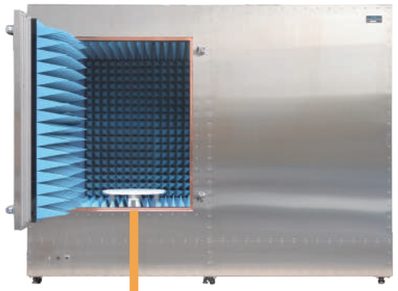
Large-sized type

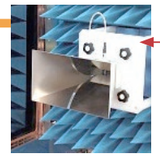
Large anechoic box ideal for measuring radiation patterns.

MY5630／MY5630ET Features

- The inside size is wide as 2m, considering the measurement of large DUT.
- Reinforced body with high shielding performance (more than 80dB).
- Owing to the characteristics of the pyramidal radio wave absorber, the internal reflection is prevented.
- Maintenance door is installed to reduce the burden of mounting the fixed base.
- A special cable can be drawn in the box through the shield sheet.
- Heat dissipation measures using intake and exhaust mechanisms are provided.
- Automatic creation of antenna pattern measurement can be also customized.

With shield seat MY5630-03 installed

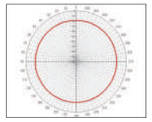


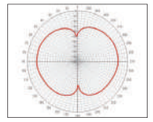


Maintenance door：Work efficiency improves when changing the antenna.

Antenna fixing base：Optional antenna set can be attached.(Photo：MY 5630-01)
【Ex.】Rotation mechanism：Measurement in horizontal/vertical direction
(Photo：MY 5630-02)

Electric turn table：Rotate the DUT and measure the antenna pattern.





For details on system upgrade, see "Electromagnetic wave radiation pattern measurement system MRP770" on page 40.

MY5630／MY5630ET Option

■Double ridge horn antenna set

Model	MY5630-01
Type	Double ridge horn
Frequency	1 to 18GHz
Connectors	SMA(J)
Other	One set of fixing jig※1
Features	・Small antenna suitable for broadband measurement with sharp directivity. ・Mounted on a fixed base, and receive and measure in horizontal / vertical plane using rotating mechanism. ・ Antenna evaluation such as mobile phone, wireless LAN terminal, base station

■Log periodic antenna set

Model	MY5630-02
Type	Log periodic dipole array
Frequency	700MHz to 6GHz
Connectors	SMA(J)
Other	One set of fixing jig※1
Features	・Correspond to high gain, wide bandwidth and high power output. ・Mounted on a fixed base, receive in horizontal/vertical plane using rotating mechanism and then measure. ・Combined with SG and high-frequency amplifier, enable to evaluate radiation immunity. ・It is possible to evaluate receiving characteristics of base station and 4K broadcasting equipment.

※1.Include connecting cables and connectors inside shield box.

■Shield Sheet (Maintenance door side)

Model	MY5630-03
Features	・Same as shield sheet equipped on the left side of main body. ・Set on the maintenance door side. ・For drawing IF and coaxial, optical fiber and special cable.

■Wooden Base

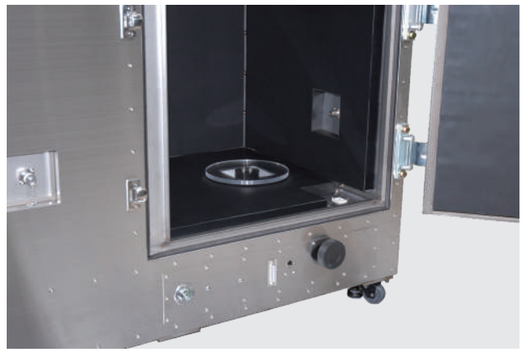
Model	MY5630-04
Features	・Attach around the turntable and prevent interference of cables during rotation. ・Since DUT can be placed once on wooden base between door and turntable, the burden of installation is reduced. ・The surface of wooden base is 5mm lower than the surface of turntable.

Medium-sized type

General-purpose medium-sized type using ferrite absorber.

MY5305

An electromagnetic anechoic box compatible with 35MHz to 2.2GHz that uses a flat tile type ferrite radio wave absorber. Ideal for use in the UHF band and sub-giga band.



Manual turntable

Dimensions	200mmϕ
Load	10kg

※Factory options

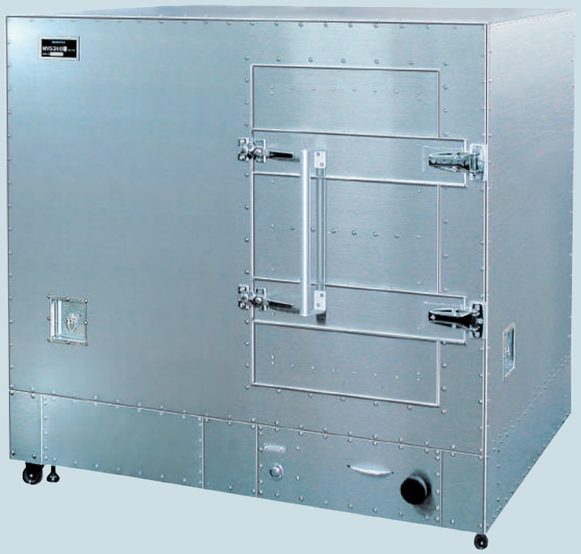
Specifications

Outside dimensions	1150(W)×765(H)×635(D)mm
Inside dimensions	1000(W)×500(H)×500(D)mm
Weight	195kg
Door opening dimensions	500(W)×500(H)mm
Structure	Double structure of radio wave absorber and stainless-steel plate
Shielding effectiveness	75dB typ@300MHz
Reflection loss	≧20dB@35MHz to 2.2GHz
Connectors	・N×2(front left×1、right side×1) ・D-sub25pin×1 ・LAN×1 ・AC×1

Customizations

Capable of changing or adding size, connector, or function from / to above standard specifications.

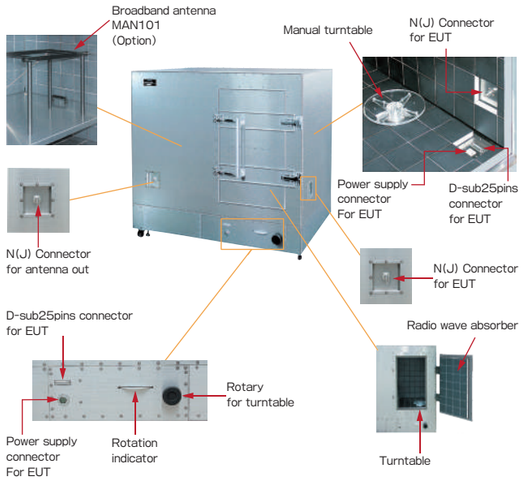
- Table for DUT
- Turntable
- Receiving antenna (Selection of optimum antenna suited for DUT)
- Reference antenna (Selection of optimum antenna suited for DUT)
- Door
- Adding RF connectors
- Adding multi pins connector
- Others



MY5310

The most suitable electromagnetic anechoic box for EMI test. For small EUT and equipped with a turntable of 220mm in diameter / 10kg in load.

Structure



Specifications

Outside dimensions	1340(W)×1210(H)×1030(D)mm
Inside dimensions	1230(W)×915(H)×915(D)mm
Weight	460kg
Door opening dimensions	410(W)×710(H)mm
Turntable dimensions	ϕ220mm
Turntable load capacity	10kg in load
Coaxial connectors	· N(J)×1(Bottom left of the front/For antenna) · N(J)×1(Right side bottom)
I/F	· D-sub25pins×1(female) · LAN×1 · AC×1(250Vmax/10A) ※When electric-powered turntable is attached, AC100V
Shielding effectiveness	70dB typ@2.2GHz
Radio wave absorber	Ferrite tile structured double
Reflection loss	≧20dB@35MHz to 2GHz
Option	· Broadband antenna MAN101 · Electric turntable MT106

Option

Broadband antenna MAN101

Frequency range	30MHz to 1GHz
Polarization	Linear
Impedance	50Ω (nominal)
Antenna type	Transformational Y character monopole antenna
Element dimensions	578(W)×332(H)×500(D)mm
Ground plate dimensions	700(W)×900(D)mm
Weight	5.3kg

Electric turntable MT106

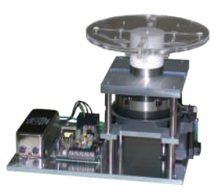
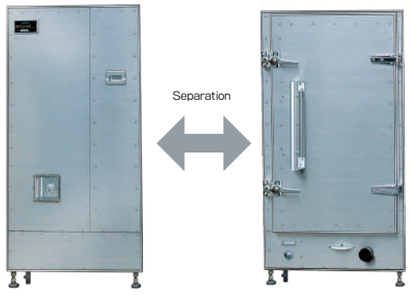


Table diameter	220mm ϕ
Table material	Resin
Load capacity	15kg

MY5310S

An electromagnetic anechoic box ideal for EMC testing. Ideal for installation in narrow spaces such as office buildings.



Specifications

Outside dimensions	1350(W)×1220(H)×1080(D)mm
Inside dimensions	1230(W)×915(H)×915(D)mm
Weight	460kg
Door opening dimensions	510(W)×920(H)mm
Turntable dimensions	ϕ220mm
Turntable load capacity	10kg in load
Coaxial connectors	· N(J)×1(Bottom left of the front/For antenna) · N(J)×1(Right side bottom)
I/F	· D-sub25pins×1 · LAN×1 · AC×1(250Vmax/10A) ※When electric-powered turntable is attached, AC100V
Shielding effectiveness	70dB typ@2.2GHz
Radio wave absorber	Ferrite tile structured double
Reflection loss	≧20dB@35MHz to 2.2GHz
Option	· Broadband antenna MAN101 · Electric turntable MT106

①It becomes easy and convenient to carry MY5310S in such small place as office building because it can be carried after divided into two.
②It is possible to carry MY5310S by using a general size elevator with a capacity of 11 or more persons.
③MY5310 adopts a structure for which the work for separation and assembly can be done without any special tool and knowledge. Therefore, there is such a flexibility as being able to move MY5310S to another place again.
④Optimum for EMI test.

Dimensions after divided

Width	680mm
Depth	1080mm
Height	1220mm

Dimensions of elevator of 11 capacity

Doorway width	800mm
Depth	1350mm
Height	2300mm

(Depending on JIS A4301)

Option

Broadband antenna MAN101

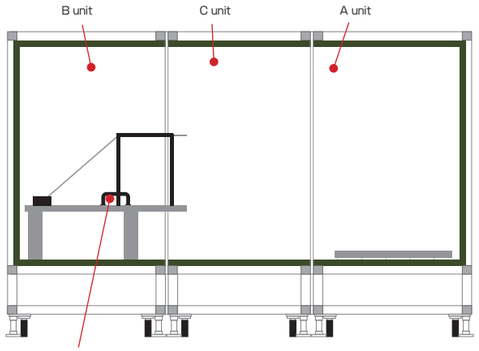
Frequency range	30MHz to 1GHz
Polarization	Linear
Impedance	50Ω (nominal)
Antenna type	Transformational Y character monopole antenna
Element dimensions	578(W)×332(H)×500(D)mm
Ground plate dimensions	700(W)×900(D)mm
Weight	5.3kg

Electric turntable MT106

Table diameter	220mm ϕ
Table material	Resin
Load capacity	15kg

MY5310SU

An electromagnetic anechoic box suitable for EMI testing. It can be carried in three sections, making it easy to carry into office buildings.



Broadband antenna MAN101 (Option)

Broadband antenna MAN101 (Option)

Specifications

Outside dimensions	1960(W)×1320(H)×1140(D)mm
Inside dimensions	1840(W)×915(H)×915(D)mm
Gross weight	650kg
Door opening dimensions	510(W)×920(H)mm
Turntable	ϕ500mm／Load capacity50kg／Manual operation
Coaxial connectors	N×2(Right side×1, Front left×1)
I/F	・AC×1(250V 10Amax) ※When electric-powered turntable is attached, AC100V ・LAN×1 ・D-sub25pins×1
Shielding effectiveness	70dB typ@2.2GHz
Radio wave absorber	Ferrite tile structured double
Reflection loss	≧20dB@35MHz to 2.2GHz
Option	・Add door to B unit ・Broadband antenna MAN101 ・Electric turntable MT106B

①Can be carried in separately
It can be carried in three pieces, making it easy to carry into office buildings.
②Can be carried in by elevator
It can be carried in by an 11-passenger elevator, which is common in office buildings.
③Easy to install without special tools or knowledge.
The structure allows for division and assembly without the need for special tools or expertise.As a result, the system can be flexibly relocated after installation.

Dimensions after divided

Width	680mm
Depth	1140mm
Height	1320mm

Dimensions of elevator of 11 capacity

Doorway width	800mm
Depth	1350mm
Height	2300mm

(Depending on JIS A4301)

Option

Broadband antenna MAN101

Frequency range	30MHz to 1GHz
Polarization	Linear
Impedance	50Ω (nominal)
Antenna type	Transformational Y character monopole antenna
Element dimensions	578(W)×332(H)×500(D)mm
Ground plate dimensions	700(W)×900(D)mm
Weight	5.3kg

Electric turntable MT106B

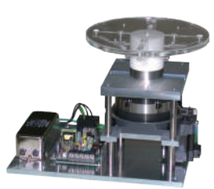


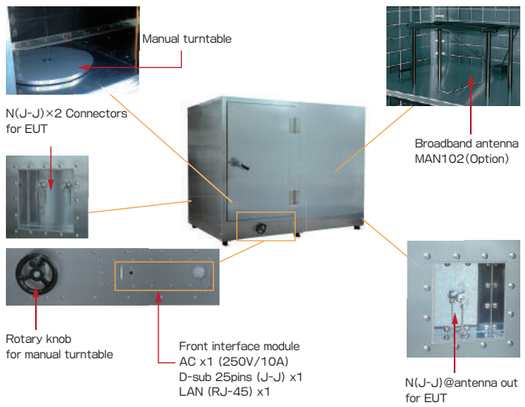
Table diameter	500mm ϕ
Table material	Metal
Load capacity	50kg

The photo is MT106 (for MY5310).

MY5410

An electromagnetic anechoic box suitable for ultra-large EMC tests. A manual turntable with a diameter of 756 mm and a load capacity of 100 kg is standard equipment for large EUTs.

Structure



Specifications

Outside dimensions	2364(W)×1902(H)×1424(D)mm
Inside dimensions	2170(W)×1450(H)×1230(D)mm
Weight	1100kg
Door opening dimensions	940(W)×1440(H)mm
Turntable dimensions	ϕ756mm
Turntable load capacity	100kg in load
Coaxial connectors	・N(J)×2(Bottom left side) ・N(J)×1(Bottom right side/for antenna)
I/F	・D-sub25pins×1(female) ・LAN×1 ・AC×1(250Vmax/10A) ※When electric-powered turntable is attached, AC100V
Shielding effectiveness	65dB typ@2.2GHz
Radio wave absorber	Ferrite tile structured double
Reflection loss	≧20dB@35MHz to 2GHz
Option	・Broadband antenna MAN102 ・Electric turntable MT106C

Option

Broadband antenna MAN102

Frequency range	30MHz to 1GHz
Polarization	Linear
Impedance	50Ω (nominal)
Antenna type	Transformational Y character monopole antenna
Element dimensions	628(W)×332(H)×500(D)mm
Ground plate dimensions	800(W)×950(D)mm
Weight	6kg

Electric turntable MT106C

Table diameter	756mm ϕ
Table material	Metal
Load capacity	100kg

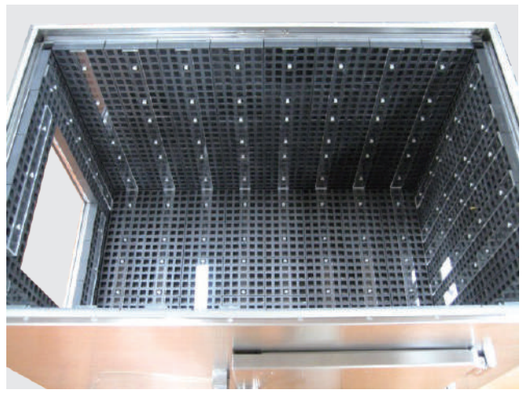
The photo is MT106 (for MY5310).

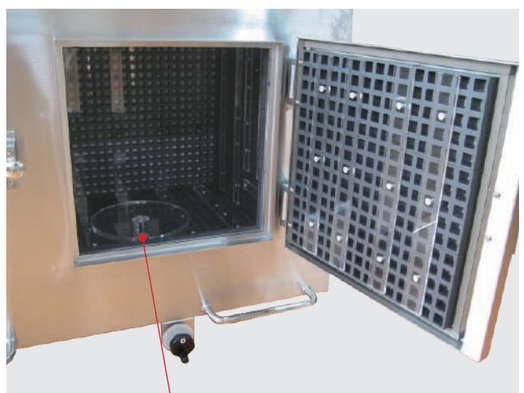
Medium-sized type

General-purpose medium-sized type using ferrite absorber.

ME8669

An electromagnetic anechoic box compatible with 50 to 800 MHz that uses a grid-type ferrite radio wave absorber. Suitable for use with specific low power radios and weak radios.





Turntable (customized)

Specifications

Outside dimensions	910(W)×650(H)×610(D)mm
Inside dimensions	800(W)×495(H)×495(D)mm
Weight	205kg
Door opening dimensions	290(W)×290(H)mm
Structure	Double structure composed of radio wave absorber and stainless steel
Shielding effectiveness	70dB typ@300MHz
Reflection loss	≧20dB@50MHz to 800MHz
Connectors	SMA×2(Left and right sides x each 1)
I/F	D-sub25pins×1

Customizations

Capable of changing or adding size, connector, or function from / to above standard specifications.

- Table for DUT
- Turntable
- Receiving antenna (Selection of optimum antenna suited for DUT)
- Reference antenna (Selection of optimum antenna suited for DUT)
- Door
- Adding RF connectors
- Adding multi pins connector
- Changing size
- Changing shape
- Selection of radio wave absorber
- Others

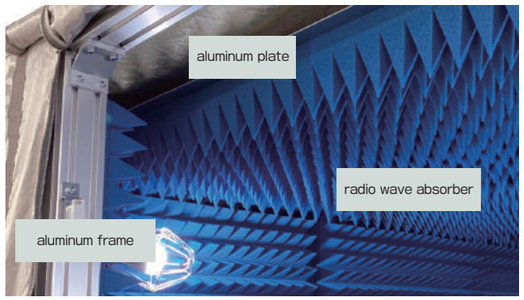
Simple anechoic chamber

Easy construction of an anechoic chamber.

MY5700

A simple electromagnetic anechoic chamber that can be widely used for 5G OTA, radio law measures, EMC tests, etc.
We have eight selections of sizes.

This electromagnetic wave shield tent type simple anechoic box can easily and inexpensively construct an anechoic chamber like a small electromagnetic anechoic box. Especially for radio law countermeasures, simple EMC test, OTA test (protocol, function, interoperability test, etc.), it is suitable for cases where ultra-high accuracy RF characteristic test and antenna evaluation are not performed. It is the best product for the needs such as not needing a full-scale electromagnetic anechoic chamber but wanting a simple electromagnetic anechoic chamber.



Front door shield tent when closed

Front door when installed

Front door when detached

Air intake (When blower is installed)

Cable feed port

Specifications

Electromagnetic shield tent	double-woven fabric
Exit and entrance	Door dimensions:0.9m(W)×1.6m(H) One front location, Double-layered curtain type structure
Cable feed port	ϕ50mm×4(optional)
Shielding effectiveness	1-6GHz@60dB, 28GHz@70dB
Radio wave absorber	・Urethane pyramid type:10cm MYA-V010 used ・Flame resistance：Aluminum plate treatment on the reverse side (except for floor surface)
Reflection loss	1.4GHz@20dB, 1.9GHz@30dB, >3.5GHz@40dB
Air intake and exhaust	Available (with blower)
Interior floor treatment	Punch carpet
Lighting	LED clip lamps×4

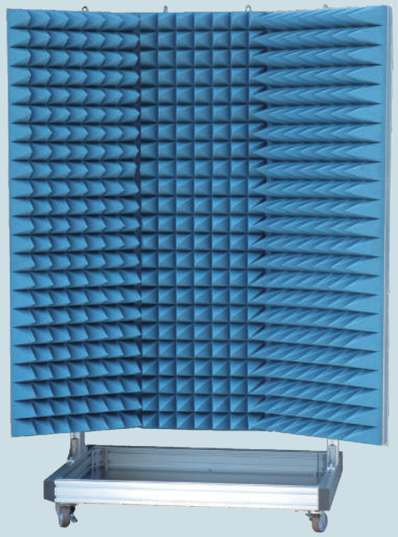
※AC100V power supply is required to operate the blower and LED clip light.

- The radio wave absorber is fixed to the aluminum plate. Since it is different from corrugated plastic bonding, even if the tent shakes due to wind pressure, it will not be affected by reflection.
- Since the radio wave absorber panel is fixed to the aluminum frame, it is possible to secure a large internal effective dimension.
- The shield tent material is a double layer of high-density fabric and has high shielding performance.
- If you purchase only the shield tent first, it will be possible to upgrade to an electromagnetic anechoic chamber in the future.

Size lineup (8 types)

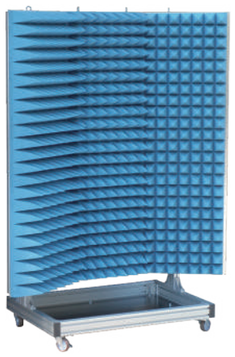
Model	External Dimensions(W×H×D)	Internal dimensions(W×H×D)	Weight
MY5722	2m×2m×2m	1.67m×1.73m×1.67m	170kg
MY5723	2m×2m×3m	1.67m×1.73m×2.67m	280kg
MY5724	2m×2m×4m	1.67m×1.73m×3.67m	335kg
MY5725	2m×2m×5m	1.67m×1.73m×4.67m	420kg
MY5732	3m×2m×2m	2.67m×1.73m×1.67m	255kg
MY5733	3m×2m×3m	2.67m×1.73m×2.67m	355kg
MY5734	3m×2m×4m	2.67m×1.73m×3.67m	425kg
MY5735	3m×2m×5m	2.67m×1.73m×4.67m	525kg

- The standard price includes 6 radio wave absorbers.
- The radio wave absorber on the floor is not fixed.
- The internal height when the absorber is removed is about 1.83m.
- In addition to the standard price, there will be costs for material delivery and worker transportation expenses.
- These prices do not include tax. Tax will be added to these prices.



MY5505

A 600MHz to millimeter wave compatible radio wave absorption partition aimed at absorbing and shielding interference radio waves from the other side in the evaluation and testing of radio wave propagation.

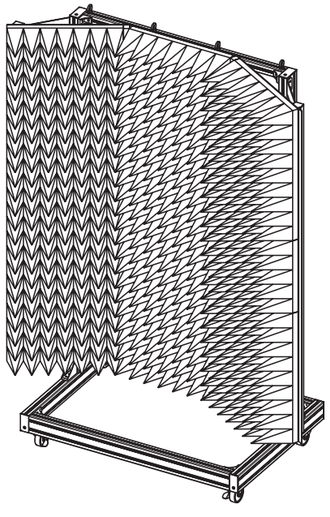


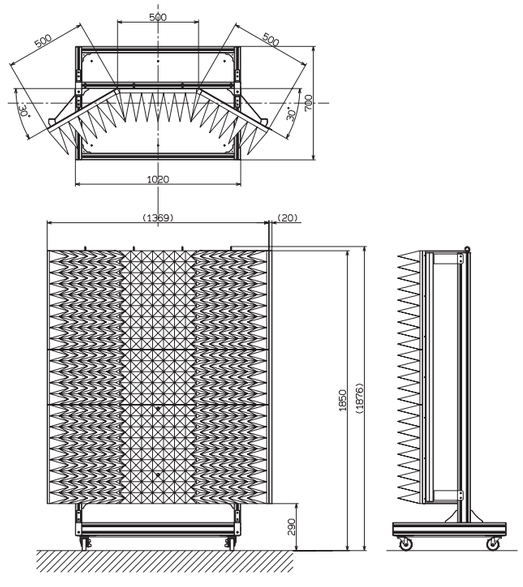
Specifications

Outside dimensions	1370(W)×1850(H)×700(D)mm
Weight	55kg (excluding weight plate)
Material	Aluminum board
Casters	Flexible casters (with stopper) ×4
Other	Eyebolt, protective cap (edge measures)

- Suitable for simple measurement for mobile phone, GPS, wireless LAN, 5G and millimeter wave.
- Casters type that is convenient for movement.
- Customizable according to required size and target frequency band.

The radio wave absorption partition (self-standing type) MY5505 is a movable partition used for performing radio wave tests in a relatively small room or space with the radio wave absorber attached to the frame. If a shield room or tent is already used, the reflection of radio waves inside can be further reduced. The target frequency is 600MHz or more. It can be used for various tests such as mobile phone, GPS, wireless LAN, 5G and millimeter wave.
MY5505 can be customized according to the target frequency at the time of measurement. In addition, we can also prepare custom-made products according to the desired test, size, jig device, etc.





Both sides face 30 ° inward, suppressing radio wave reflection from the back robe and side lobes. The flexible casters make it easy to move and install.

Taurus N series

Taurus N

Shield box type without radio wave absorber. Suitable for applications where internal reflection is not a concern.

MY1510N

Small size：Portable and light weight type.

Outside dimensions	380(W)×165(H)×380(D)mm
Inside dimensions	375(W)×160(H)×375(D)mm
Weight	1.9kg
Shielding effectiveness	60dB typ@2.4GHz
Reflection loss	Not covered with an radio wave absorber
Connectors	SMA×2(back)
I/F Module	1 unit(back)
Option	I/F Module

MY1520N

Medium size：The most general and universal type.The front opening makes it very easy to work with.

Outside dimensions	520(W)×520(H)×520(D)mm
Inside dimensions	515(W)×515(H)×515(D)mm
Weight	12.3kg
Shielding effectiveness	60dB typ@2.4GHz
Reflection loss	Not covered with an radio wave absorber
Connectors	SMA×2(back)
I/F Module	2 units(back)
Option	・I/F Module ・Wooden Table MT104

MY1530N

Large size：Type corresponding to even big EUT . Turntable can be mounted as an option.

Outside dimensions	1120(W)×705(H)×620(D)mm
Inside dimensions	1115(W)×615(H)×615(D)mm
Weight	42kg
Shielding effectiveness	60dB typ@2.4GHz
Reflection loss	Not covered with an radio wave absorber
Connectors	SMA×4 (2 on the back, 1 on each side)
I/F Module	4 units(back)
Option	・I/F Module ・Wooden Table MT105 ・Turn Table Unit MT103

I/F Module

The I/F module is a module on which AC supply, DC supply, LAN, USB, SMA, BNC, N, D-sub or through pipe connectors are mounted. The I/F modules can be selected according to the intended use.

Available for Taurus, MY2500 and MY3700 series (except MY1525)

Model	Mounting connectors
IFM1	AC(1pc)、LAN※1(1pc)、USB※3(1pc)、D-sub9※5(1pc)
IFM2	AC(1pc)、LAN※1(2pcs)、USB※3(2pcs)、D-sub9※5(1pc)
IFM3	AC(1pc)、LAN※1(2pcs)、USB※3(2pcs)、D-sub25※6(1pc)
IFM4	DC(1pc)、LAN※1(1pc)、USB※3(1pc)、D-sub9※5(1pc)、D-sub25※6(1pc)
IFM5B	SMA(4pcs)、BNC(2pcs)、N(2pcs)
IFM6-1	Through pipe(1pc)
IFM6-2	Through pipe(2pcs)
IFM7	AC(1pc)、LAN※2(1pc)、USB※4(1pc)
IFM8	DC(2pcs)、LAN※2(1pc)、USB※4(1pc)
IFM9	LAN※2(2pcs)、USB※4(2pcs)

MY1520 equipped with two I/F module

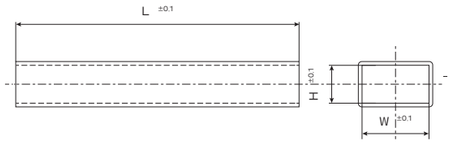
Install one or two IFM6 through pipes from the following five types. Inserting a substance containing an electric conductor inside the through pipe may reduce the shielding performance.

Model	Pipe Inner dimensions	Pipe Length	Applicable frequency	Shielding effectiveness
TP-5	47.6(W)×22.2(H)mm	170mm	Up to 2GHz	60dB
TP-6	40.4(W)×20.2(H)mm	170mm	Up to 3GHz	60dB
TP-7	34.9(W)×15.8(H)mm	150mm	Up to 3.5GHz	60dB
TP-8	28.5(W)×12.6(H)mm	150mm	Up to 4GHz	60dB
TP-10	22.8(W)×10.1(H)mm	150mm	Up to 4.5GHz	60dB

Available for MY1525

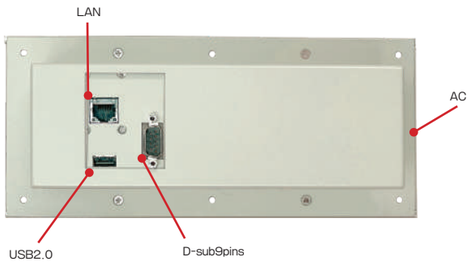
Model	Mounting connectors
IFM10	AC(1pc)、LAN※1(1pc)、USB※3(2pcs)、D-sub9※5(1pc)
IFM11	DC(1pc)、LAN※1(1pc)、USB※3(2pcs)、D-sub9※5(1pc)

IFM6 Through pipe

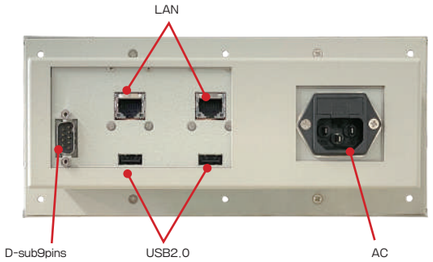


※1, Cat 5e equivalent ,PoE not supported
※2, Cat 6A equivalent ,PoE+ supported
※3, USB2.0,Type-A(Inside/Outside) ,Power Delivery(PD) not supported
※4, USB3.1 Gen1,Type-A(Inside/Outside) ,Power Delivery(PD) not supported
※5, male(Inside/Outside) ,fit M2.6(metric screw threads)
※6, female(Inside/Outside) ,fit M2.6(metric screw threads)

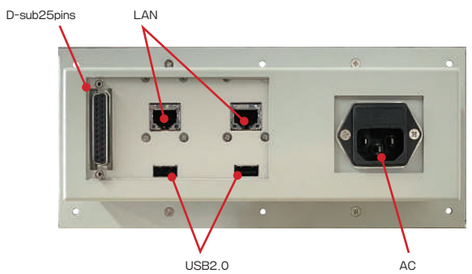
IFM1



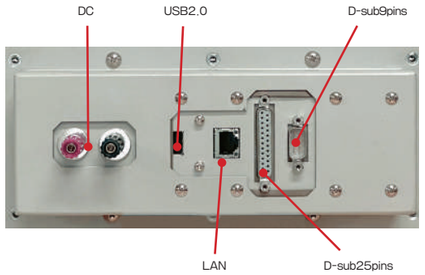
IFM2



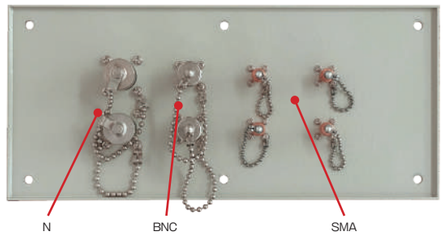
IFM3



IFM4

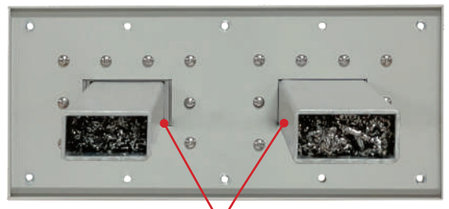


IFM5B



IFM6-1

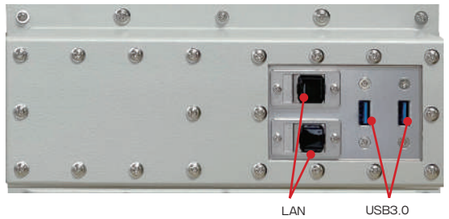
IFM6-2



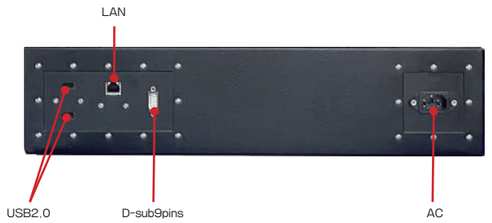
IFM7

IFM8

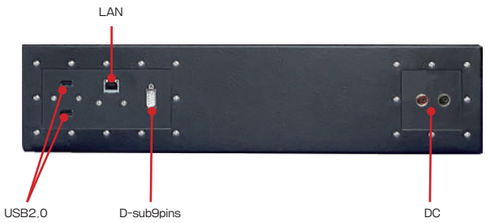
IFM9



IFM10



IFM11



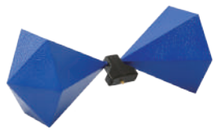
Antenna

Log periodic antenna M213/213R

This is a linear polarization antenna with frequency band from 700MHz to 5GHz. The reference antenna (M213R) comes with gain and VSWR data.

■Frequency range:700MHz to 5GHz

Biconical antenna MAN150/MAN150B



Suitable for simple measurement of radiated emissions.

Model	MAN150	MAN150B
Frequency range	20MHz to 3GHz	30MHz to 1GHz
Gain	-45dBi to +1dBi(nominal)	-31dBi to +1dBi(nominal)
Antenna factor	20 to 51dB/m	17 to 31dB/m
Max. transmission power	1W	
Connectors	SMA(J)	
Dimensions	350(L)×160(W)×140(D)mm	540(L)×225(W)×225(D)mm
Weight	350g	1150g

Log periodic antenna MAN160A/160B

■ **Components**

- Antenna body
- Grip
- Antenna data
- Hard case

Model	MAN160A	MAN160B
Frequency range	700MHz to 4GHz	700MHz to 6GHz
Max. power	100W(At CW and 400MHz)	
Impedance	50Ω(nominal)	
VSWR	<2.0以下(Typical)	
Gain	4dBi(Typical)	5dBi(Typical)
Antenna factor	23 to 38dB/m	26 to 41dB/m
Connectors	SMA(J)	
Dimensions	340(L)×200(W)×25(D)mm	
Weight	270g	250g

Horn antenna MY6500-01

Model	MY6500-01
Shape	Standard gain horn
Frequency range	26GHz to 40GHz
Gain	18 to 21dBi(typ)
VSWR	1.3(typ)
Connectors	2.92mm(J)
Dimensions	44.0(W)×34.0(D)×71.0 (L)mm
Features	Linearly polarized pyramidal horn antenna

Horn antenna MY6500-02E

Model	MY6500-02E
Shape	Quad ridged horn
Frequency range	5GHz to 50GHz
Gain	4 to 14dBi(typ)
VSWR	2.5(typ)
Connectors	2.4mm(J)
Dimensions	45(W)×45(D)×85(L)mm
Features	Covers both horizontal and vertical polarization

Portable antenna M301 to M310

Antenna for measuring electric field strength.

■ Connectors :SMA(P)

Model	Frequency range
M301	0.8 to 1GHz
M302	1.25 to 1.65GHz
M303	1.7 to 2.2GHz
M304	2.25 to 2.65GHz
M305	300 to 500MHz
M306	4.8 to 6.2GHz
M307	470 to 770MHz
M308	3.6 to 4.2GHz
M309	4.4 to 4.9GHz
M310	5.9 to 7.2GHz

Table

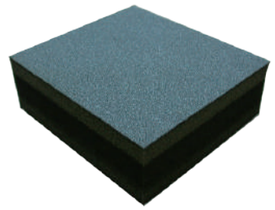
Electric turntable MT107

Suitable for evaluation of small antennas and wireless devices.
A radio wave absorber is sandwiched between the acrylic stand and the case.

Model	Radio wave absorber
MT107-MYA75	MYA-75
MT107-MYA77	MYA-77

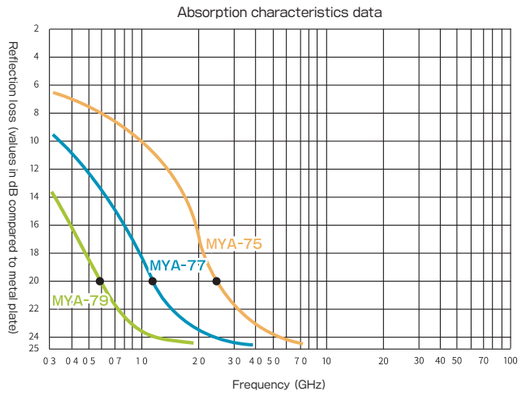
Urethane radio wave absorber

Flat type

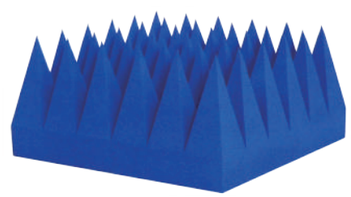


Model		MYA-75	MYA-77	MYA-79
Thickness		30mm	60mm	120mm
Frequency range		≧2.4GHz	≧1.2GHz	≧0.6GHz
Reflection Loss	10dB	1GHz	350MHz	250MHz
	15dB	1.9GHz	700MHz	370MHz
	20dB	2.4GHz	1.2GHz	600MHz
	24dB	≧5.6GHz	≧2.5GHz	≧1.2GHz

■**Characteristics data**



Pyramidal type



Height		4-inch(10cm)	8-inch(20cm)
Reflection loss	30dB	3GHz	1GHz
	40dB	5GHz	3GHz
	50dB	>15GHz	>5GHz

Ferritic radio wave absorber

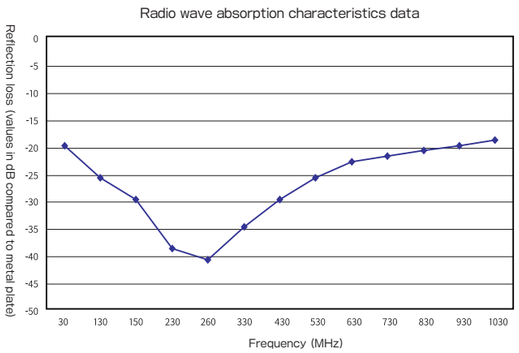
Flat tile type

Thickness	28mm
Reflection loss	・≧20dB@35MHz to 2.2GHz ・17dB@30MHz ・≧10dB@2.2 to 2.7GHz

Grid type

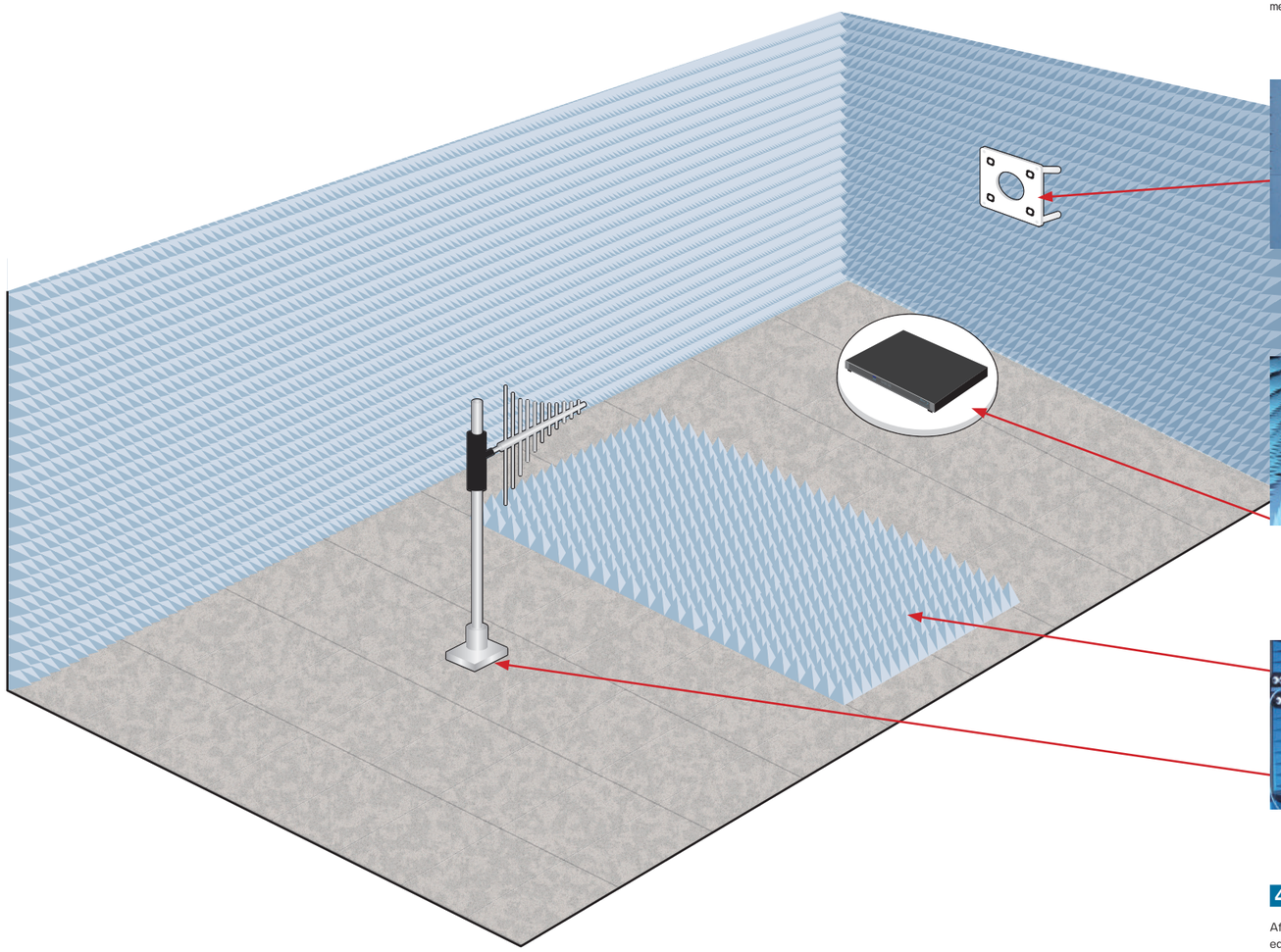
Thickness	19mm
Frequency range	50MHz to 800MHz
Reflection loss	・20dB@30MHz ・30dB@150MHz ・40dB@260MHz ・30dB@430MHz ・20dB@930MHz

■**Characteristics data**



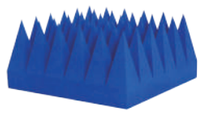
1 System integration

With the spread of IoT (Internet of Things), the development of low-priced and low-cost devices compatible with LPWA such as LoRa and Wi-SUN is progressing, while simulation during wide area communication is becoming an issue. In addition, in measurement methods for high-speed, large-capacity communication such as millimeter waves and 5G standards, adjustment of the positions of the transmitter side (TX) and communication device (RX) is more severely required than in conventional measurements. When verifying each standard, as components other than the shielding effect required at the time of measurement, selection of a radio wave absorber that suppresses radio wave reflection, including the case material of the test piece, and operation of the jig device are major issues. Based on the characteristics of the radio wave absorber selected according to each test standard, our radio wave absorption equipment will consider together with the customer how to use the measurement space efficiently from zero design under limited conditions.

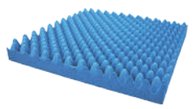


2 Absorbent for radio wave absorption equipment (Reflection loss ≧-20dB、600㎜×600㎜/sheet)

After investigating the existing equipment in advance, we will proceed with the equipment based on the concrete introduction effect such as the outline design of the radio wave absorption equipment and the arrangement of the radio wave absorption partition after processing. In order to consider the equipment according to your budget, we are preparing the following radio wave absorbers that are different for each frequency.



MYA-10 to 60



MYB-30 to 75

[200MHz to]Urethan pyramid type/ Flame-resistant urethane pyramid type (Compatible with test standard UL94 V-0)

Model	Height	Weight	Applicable Frequency※	Typical application note
MYA-10 (MYA-V010)	10cm	0.7kg	1.4GHz to	Various radars, satellites, mobile phones (5G), wireless LAN, TV (BS4K)
MYA-20 (MYA-V020)	20cm	1.2kg	600MHz to	TV (25-52CH), mobile phone, RFID, specified low power(920MHz), smart meter
MYA-30 (MYA-V030)	30cm	1.7kg	500MHz to	TV (18-52CH), mobile phone
MYA-45 (MYA-V045)	45cm	2.1kg	400MHz to	Specified low power (420MHz), amateur radio (430MHz), TV (13-52CH)
MYA-60 (MYA-V060)	60cm	2.5kg	200MHz to	Digital firefighting, railroads, ships, mili-tary air band (222-399MHz)

[3.5GHz to]Urethan wave type

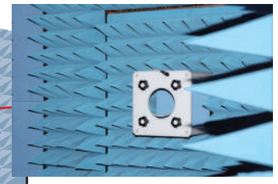
Model	Height	Weight	Applicable Frequency※	Typical application note
MYB-30	3cm	0.3kg	10GHz to	Ultra-wideband radio system, earth exploration satellite, ITS, aeronautical radionavigation
MYB-50	5cm	0.4kg	4GHz to	Weather radar, robot radio, ISM, DSRC
MYB-75	7.5cm	0.6kg	3.5GHz to	Mobile phone(5G), wireless LAN (5GHz band), TV(BS4K)

※Radio wave absorption performance ≧ -20dB, each application depends on or includes the lower limit of the applicable frequency.

Radio wave absorption equipment

3 Jig devices

When considering the measurement space, a device that assists the measurement is required to ensure the reproducibility of the test. In addition to physical differences in size, weight, etc. of the object to be measured, it is necessary to consider how to follow the directivity of the antenna to be measured, the arrangement or movement of cables.
In our radio wave absorption equipment, to meet various needs, we will utilize the know-how of measurement technology cultivated over many years to propose jig devices unique to RF measuring instrument manufacturers.

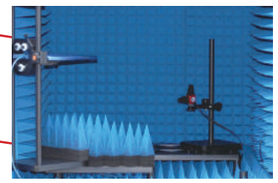


Antenna Fixing Base

Attach the attachment type folder shape to the pedestal of transparent material on the wall panel. It enables flexible measurement according to the target scene, such as changing the plane of polarization and measuring with multiple antennas.

Turntable

In simple emission tests, communication tests, etc., the directivity of the object to be measured placed on the table is confirmed from different angles.
Especially in a shielded environment, it is effective for cost consideration when darkening a conventional shielded room, such as measuring various antenna patterns.



Electric field strength measuring device

Automatic measurement of radiated electric field strength is performed using an antenna or electric field probe. It is effective for interference wave measurement, proximity immunity test, etc.

4 Flow until delivery

After confirming the necessary equipment, etc., we will check the work process and create equipment approval drawings, etc. after a preliminary inspection of the site. After the installation is completed, the required tests will be performed, and the product will be delivered. The following documents will be attached when the absorber of the radio wave absorption equipment is delivered.

① Design drawings	Approval diagram (including content such as cutting), test report
② Radio wave absorber report	Dimensional tolerance sampling inspection (width direction, 10% of the total number), radio wave absorber model number, and specifications such as the presence or absence of a specific solvent at the time of manufacture

6 Service and support

① Reliable support service

- Free warranty period 1 year
  ※A fee will be charged for malfunctions and consumables caused by handling errors, negligence, or force majeure such as natural disasters and fires.
- Radio wave absorber replacement service (charged)

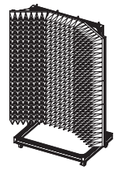
② Product update service

- When the target measurement content such as measurement frequency band and conformity test changes, we propose to review the radio wave absorption equipment that has already been introduced.

5 Product examples

① Radio wave absorption partition (stand itself) MY5505

■ Single unit



Image

■ 2units

When connected･front

When connected･back

■ Specifications

Outside dimensions	1370(W)×1850(H)×700(D)mm
Weight	55kg (excluding weight plate)
Material	Aluminum board
Casters	Flexible casters (with stopper) ×4
Other	Eyebolt, protective cap (edge measures)

② Simple anechoic chamber(Shield tent type) series

■ Specifications

Electromagnetic shield tent	double-woven fabric
Exit and entrance	Door dimensions:0.9m(W)×1.6m(H) One front location、Double-layered curtain type structure
Cable feed port	ϕ50mm×4(optional)
Shielding effectiveness	1-6GHz@60dB, 28GHz@70dB
Radio wave absorber	・Urethane pyramid type:10cm MYA-V010 used ・Flame resistance:Aluminum plate treatment on the reverse side (except for floor surface)
Reflection loss	1.4GHz@20dB, 1.9GHz@30dB, >3.5GHz@40dB
Air intake and exhaust	Available (with blower)
Interior floor treatment	Punch carpet
Lighting	LED clip lamps×4

Model	External Dimensions	Internal dimensions	Weight
MY5722	2m×2m×2m	1.67m×1.73m×1.67m	170kg
MY5723	2m×2m×3m	1.67m×1.73m×2.67m	280kg
MY5724	2m×2m×4m	1.67m×1.73m×3.67m	335kg
MY5725	2m×2m×5m	1.67m×1.73m×4.67m	420kg
MY5732	3m×2m×2m	2.67m×1.73m×1.67m	255kg
MY5733	3m×2m×3m	2.67m×1.73m×2.67m	355kg
MY5734	3m×2m×4m	2.67m×1.73m×3.67m	425kg
MY5735	3m×2m×5m	2.67m×1.73m×4.67m	525kg

※Dimensions (W×H×D)

We manufacture electromagnetic anechoic boxes (shield boxes) at our own factories in Japan with high reliability and reliable technology, which are compatible with various applications and applications that are becoming more diverse and sophisticated.
In addition to selling the products listed in the catalog (standard lineup), we also manufacture custom-made products and modify standard products to meet the needs of our customers. Please feel free to contact us.

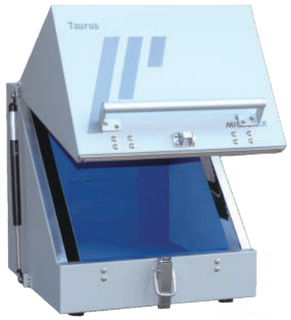
e.g.1:New design

Main purpose	Receiving sensitivity test of GNSS terminal
Features	・The vertically long shape allows installation in a narrow space while ensuring the distance between antennas. ・Equipped with a resin antenna and EUT fixing base. ・Equipped with a shield sheet (general-purpose through hole), it supports the passage of special connectors. ・Equipped with an exhaust fan and an intake port, considering measures against heat.
Outside dimensions	1155(W)×1500(H)×1025(D)mm
Inside dimensions	600(W)×900(H)×600(D)mm
Weight	160kg
Shielding effectiveness	≧65dB@1 to 3GHz
Reflection loss	≧30dB@1GHz
Connectors	SMA×2
I/F	DC, LAN, USB2.0, D-sub9pins, D-sub25pins, 1 each

e.g.2:New design

Main purpose	Shipment inspection of information and communication equipment (wireless system)
Features	・A transparent resin stand that matches the EUT shape is installed. ・Enhanced durability against repeated opening and closing operations. ・The size of the case has been reduced to the limit so that it can be installed in a limited space.
Outside dimensions	350(W)×205(H)×399(D)mm
Inside dimensions	279(W)×147(H)×269(D)mm
Shielding effectiveness	≧70dB@900MHz to 6GHz
Reflection loss	≧20dB@5GHz
Connectors	SMA×4
I/F	USB2.0×2

e.g.3:Customization based on standard products



Main purpose	Shipment inspection of wireless communication module (wireless system)
Features	・Customized and optimized the standard product MY1520 for the production line of Wi-SUN equipment. ・A large catch clip is used to improve opening and closing workability. ・Abrasion prevention processing is applied to the absorber.
Outside dimensions	590(W)×560(H)×658(D)mm
Inside dimensions	400(W)×400(H)×400(D)mm
Weight	20kg
Shielding effectiveness	80dB typ@900MHz to 6GHz
Reflection loss	≧20dB@1.2GHz
Connectors	SMA×2
I/F	Taurus IF modules ×2

e.g.4:New design of IF module

The standard electromagnetic anechoic box is used, and only the optional interface module is newly designed. Corresponds to the configuration according to the test application.

Part 1

Maximize the number of USB ports for multi-hop testing with a USB dongle. USB x 12 ports.

Part 2

AC and DC are mounted in one module, and both powers can be supplied even in a small electromagnetic anechoic box. AC, DC, USB, LAN, 1 each.

Part 3

Equipped with an air terminal block, it enables air supply inside the electromagnetic anechoic box. Φ 4 fitting, 2 systems, solenoid valve bracket.

The antenna gain measurement method by the standard antenna method

Introducing the antenna gain measurement method by the standard antenna method using an electromagnetic anechoic box and a spectrum analyzer.

Application

An electromagnetic anechoic chamber or a calibrated standard antenna is usually required to evaluate the antenna gain, but it can be evaluated simply by using a spectrum analyzer with a tracking generator and an electromagnetic anechoic box.

- Obtain the EUT gain by comparing it with the reference antenna (antenna with a known gain).
- As for the measurement environment, the measurement is performed in the electromagnetic anechoic chamber (anechoic box) as in the case of radiation pattern measurement.
- Mainly use dipoles and log periodic antennas in the MHz band, and horn antennas in the GHz band.

Solution

Measurement procedure

①Set the center frequency and span of the spectrum analyzer according to the band you want to measure.

②Measure the tracking generator output at the reference antenna end. [Fig.1]
Let the result be "A (dBm)".

③Prepare a receiving antenna and a reference antenna (Tx) and install them in the electromagnetic anechoic box at a certain distance.

④Close the door of the electromagnetic anechoic box and execute the measurement. [Fig.2]
Let the result be "X (dBm)"

⑤Take out the reference antenna (Tx) and install the EUT at the same position.

⑥Close the door of the anechoic box and execute the measurement. [Fig.3]

⑦If the maximum radiation direction of the EUT is unknown, rotate the turntable and look for the peak gain. Let the result be "Y (dBm)"

⑧Calculate EIRP $_{EUT}$ (dBm) from the following formula.
EIRP $_{Tx}$ (dBm) = A(dBm) + Gain $_{Tx}$ (dBi)
EIRP $_{EUT}$ (dBm) = Y(dBm) − X(dBm) + EIRP $_{Tx}$ (dBm)

⑨Calculate EUT gain from the following formula.
Gain $_{EUT}$ (dBi) = EIRP $_{EUT}$ (dBm) − EUTtransmission power(dBm)

※EIRP:Equivalent isotropic radiant power
※If the EUT transmission power and gain cannot be separated, such as when the EUT antenna is integrated, EIRP will be the final result.

Fig.1

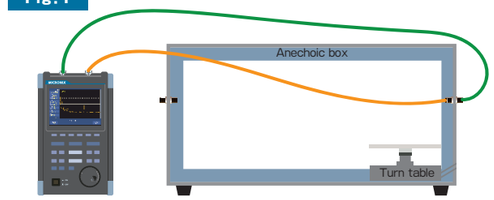


Fig.2

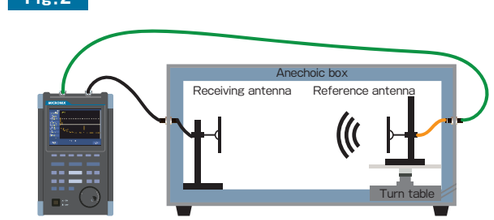
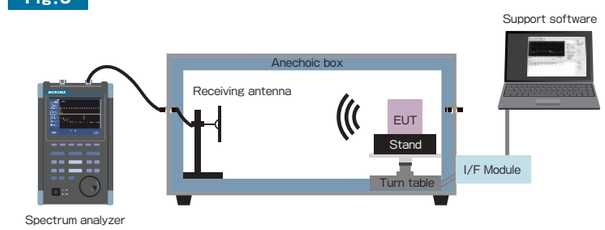


Fig.3



System structure

Product	Notes
Anechoic box (With manual or electric turntable)	
Antenna (reference and reception)	※Dipole, horn, log periodic antenna and etc.
Spectrum analyzer (With tracking generator)	※MSA438TG or MSA538TG
Others, cable stands and various options	

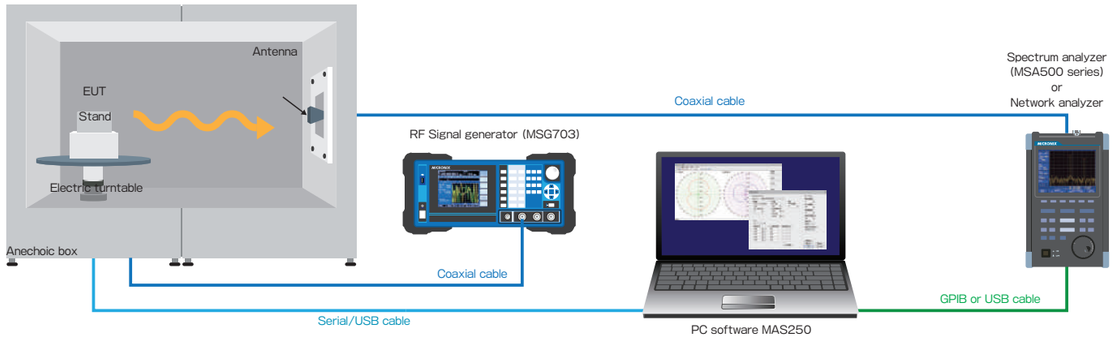
Electromagnetic wave emission pattern measurement system MRP770

We provide inexpensive electromagnetic wave emission pattern measurement system which space-saving and installation work not necessary.

Suitable for developing small wireless devices, information communication devices, and antennas.

The electromagnetic radiation pattern measurement system MRP770 is a system for measuring the radiation pattern of small wireless devices, information communication devices, antennas, etc.
With the rapid progress of IoT, wireless modules are installed in various terminals, and it is becoming more important to understand the antenna performance. This system is a material that introduces an example.

System diagram



Measuring instrument

Spectrum analyzer

Measure the signal that is actively radiated from the EUT.
It is mainly used for measuring wireless modules.

Network analyzer

Input a signal to the EUT and measure the signal radiated from the antenna.
Mainly used to measure passive sources such as antennas.

Signal generator

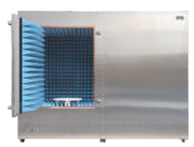
Input a signal to the EUT and measure the signal radiated from the antenna with a spectrum analyzer.
Mainly used to measure passive sources such as antennas.

※Please contact us for compatible models.

Anechoic box

MY5630ET

A large anechoic box with excellent versatility, mainly for the sub-GHz to millimeter wave band.



Outside dimensions	2504(W)×1922(H)×1704(D)mm
Inside dimensions	2010(W)×1140(H)×1210(D)mm
Weight	765kg
Radio wave absorber	Pyramidal absorber 8 inch
Reflection loss	30dB@1GHz 40dB@3GHz 50dB@5GHz ※Typical
Shielding effectiveness	≧80dB@1 to 6GHz※Typical (when using shield sheet≧60dB)
Front door	900(W)×1150(H)mm
Maintenance door	675(W)×675(H)mm
Turn table	・ϕ500mm/30kg in load(center of table) ・Structure POM
Air intake and exhaust tube	Included
Interface	USB, LAN×each 2pcs Power supply(AC or DC) , D-sub25, D-sub9, Shield sheet×each 1pc SMA(J)×5(left side×3, right side×2)

MY5310SU-UP

A horizontally long anechoic box mainly for the 2 GHz band to the millimeter wave band (5G).Three-part structure.

Outside dimensions	1963(W)×1323(H)×1140(D)mm
Inside dimensions	1710(W)×775(H)×775(D)mm
Weight	500kg
Radio wave absorber	Pyramidal absorber 4 inch
Reflection loss	20dB@1GHz 30dB@3GHz 40dB@5GHz ※Typical
Shielding effectiveness	≧65dB@1 to 6GHz ※Typical
Front door	516(W)×926(H)mm ※same for both sides
Turn table	・ϕ500mm/30kg in load(center of table) ・Structure metal
Air intake and exhaust tube	Not included
Interface	AC outlet, DC power terminal block(3P), LAN D-sub25× each 1pc N(J)×2(left/right side ×each 1pc)

MY5310S-UP

A space-saving anechoic box mainly for the 2.4 GHz to 5 GHz band.Two-part structure.

Outside dimensions	1345(W)×1323(H)×1140(D)mm
Inside dimensions	1107(W)×775(H)×775(D)mm
Weight	350kg
Radio wave absorber	Pyramidal absorber 4 inch
Reflection loss	20dB@1GHz 30dB@3GHz 40dB@5GHz ※Typical
Shielding effectiveness	≧65dB@1 to 6GHz ※Typical
Front door	516(W)×926(H)mm
Turn table	・ϕ220mm/10kg in load(center of table) ・Structure acrylic
Air intake and exhaust tube	Not included
Interface	AC outlet, LAN×each 1pc USB×2 SMA(J)×8(left/right side ×each4)

PC software MAS250

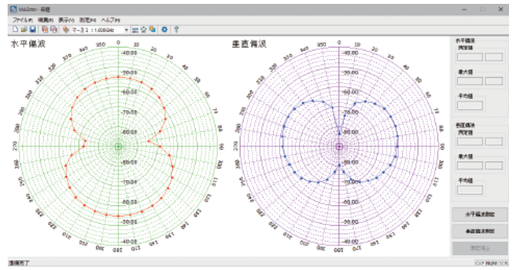
PC software for automatically measuring the radiation pattern of horizontal or vertical polarization.

Setting screen

Set the spectrum analyzer, network analyzer, and electric turntable. You can also save and read the set values.

Measurement screen

Turn the turntable to the specified angle and perform sweep measurement with the spectrum analyzer. Automatically plot the signal level at the specified frequency on the polar graph.



Calibration example of the EIRP

① Antennas with known gains measure in the boresight direction.

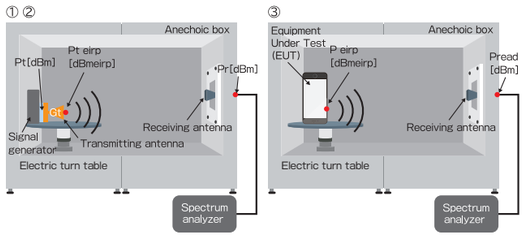
Pt[dBm]	Effective radiated power (ERP)
Gt[dB]	Antenna gain
Pt eirp[dBmeirp]	Equivalent isotropically radiated Pt[dBm]＋Gt[dB]
Pr[dBm]	Received power of RF connector part of Electromagnetic anechoic box through receiving antenna ＋ coaxial cable

②Find the degree of antenna coupling.

K[dB]	Pt eirp[dBmeirp]－Pr[dBm]

③ A be measured radiation electricity of measured device (EUT) in reception system same as calibration.

P eirp[dBmeirp]	Pread[dBm]＋K[dB]



System configuration

Example of wireless module measurement from 1GHz to 8.5GHz

Product Name	Model	Quantity
Electromagnetic anechoic box (Built-in Electric turn table)	MY5630ET	1
Shield sheet (Maintenance door side)	MY5630-03	1
Wooden base	MY5630-04	1
Double Ridge Horn Antenna Set (1 to 18GHz)	MY5630-01	1
Spectrum analyzer	MSA558	1
USB Cable	MI400	1
Coaxial cable (0.5m, Receiving antenna to Electromagnetic anechoic box)	MC201	1
Coaxial cable (4m, Electromagnetic anechoic box to Spectrum analyzer)	MC203	1
Conversion adapter	MA306	1
PC software	MAS250	1
PC for Measurement		1
Serial/USB cable		1
Calibration Kit		
SI costs (comprehensive testing, coupling measurement, etc.)		
Carry-in costs (transportation, carry-in, installation, etc.)		

Option (Example of anechoic box MY5630ET)

Doubleridge horn antenna set

Model	MY5630-01
Type	Doubleridge horn
Frequency	1 to 18GHz
Connectors	SMA(J)
Other	One set of fixing jig (Include connecting cables and connectors inside shield box.)
Features	・ Small antenna suitable for broadband measurement with sharp directivity. ・ Mounted on a fixed base, and receive and measure in horizontal / vertical plane using rotating mechanism. ・ Antenna evaluation such as mobile phone, wireless LAN terminal, base station.

Log periodic antenna set

Model	MY5630-02
Type	Log periodic dipole array
Frequency	700MHz to 6GHz
Connectors	SMA(J)
Other	One set of fixing jig (Include connecting cables and connectors inside shield box.)
Features	・ Correspond to high gain, wide bandwidth and high power output. ・ Mounted on a fixed base, receive in horizontal / vertical plane using rotating mechanism and then measure. ・ Combined with SG and high-frequency amplifier, enable to evaluate radiation immunity. ・ It is possible to evaluate receiving characteristics of base station and 4K broadcasting equipment.

Shield sheet (Maintenance door side)

Model	MY5630-03
Features	・ Same as shield sheet equipped on the front of main body. ・ Set on the maintenance door side. ・ For drawing IF and coaxial, optical fiber and special cable.

Wooden stand

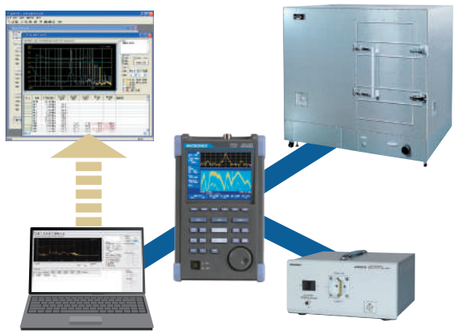
Model	MY5630-04
Features	・ Attach around the turntable and prevent interference of cables during rotation. ・ Since DUT can be placed once on wooden base between door and turntable, the burden of installation is reduced. The surface of wooden base is 5mm lower than the surface of turntable.

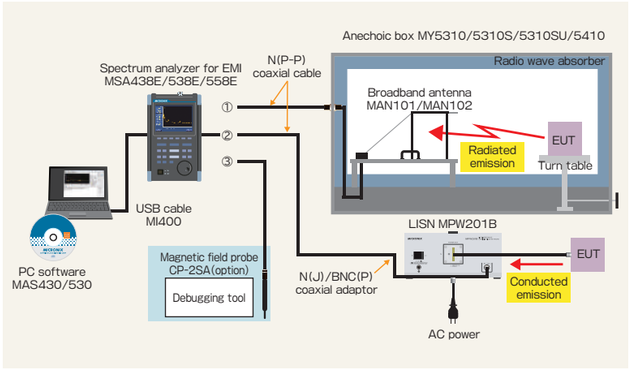
※Please contact us for details and combination of the system.

EMI test system MR2300

Suitable for "Pre-compliance" preliminary conformance test of EMI official test.

An integrated system that combines our spectrum analyzer technology, anechoic box technology, and antenna technology.



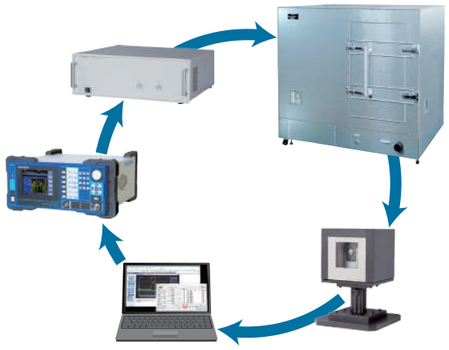


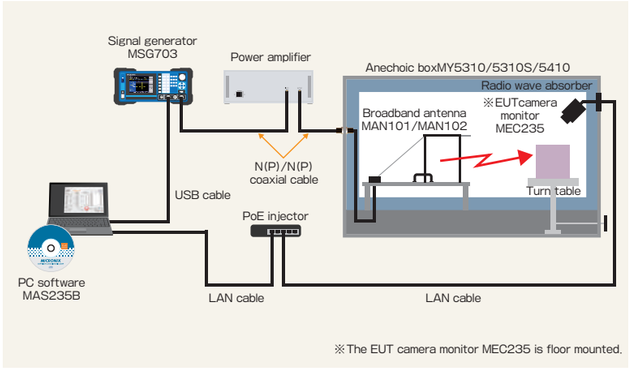
MR2300 is an EMI total test system for Pre-compliance for measuring radiated emission and conducted emission. The system has been downsized with the in-house developed ultra-compact, wideband antenna MAN101/102. The entire system has been calibrated.
In addition, four types of anechoic boxes are available according to the EUT.

EMS test system MR2350

Pre-compliance system for radiated immunity testing (IEC / EN61000-4-3)

The malfunction of the EU by the electromagnetic radiation can be observed by a camera put in the anechoic box.





4 types of anechoic boxes can be combined.


MY5310


MY5310S


MY5310SU

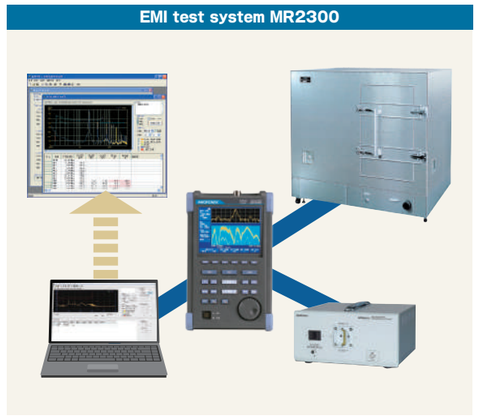

MY5410

	MY5310	MY5310S	MY5310SU	MY5410
EUT size	20cm	20cm	50cm	70cm
EUT weight	10kg	10kg	50kg	100kg
Structure	Integrated type	2-split type	3-split type	Integrated type

EMI+EMS test system MR2400

This system combining the EMI test system MR 2300 and the EMS test system MR 2350.

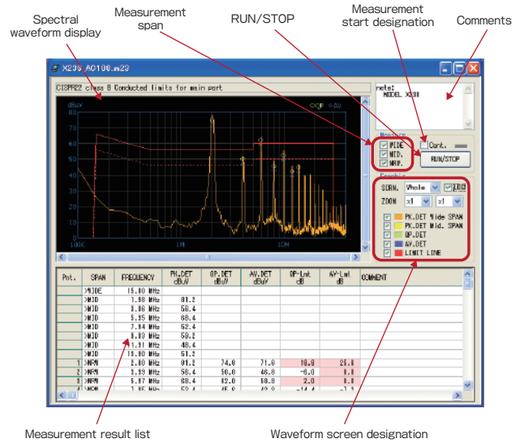
The price of MR2400 becomes much lower than purchasing MR2300 and MR2350 separately because the anechoic box MY5310/5310S/5410 and the broadband antenna MAN101/102 are common to two systems.



EMI+EMStest system MR2400

Automatic measurement

Spectrum analyzer settings and typical EMI standard values are preset for easy use even if you are unfamiliar with spectrum analyzer operation and EMI standards.
An automatic measurement mode is provided to simplify the procedure for searching for out-of-specification spectra and measuring their QP or AV detection values.
The measured value of radiated emission is converted to the 3 metric system.



※ Dimensions exclude protrusions, etc. Weights do not include IF modules. Dimensions and weight are approximate.
※ MICRONIX Corporation reserves the right to make changes in design, specifications and other information without prior notice.

AGENCY

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