

# TC-5830APU

## Pneumatic Shield Box

### Data Sheet



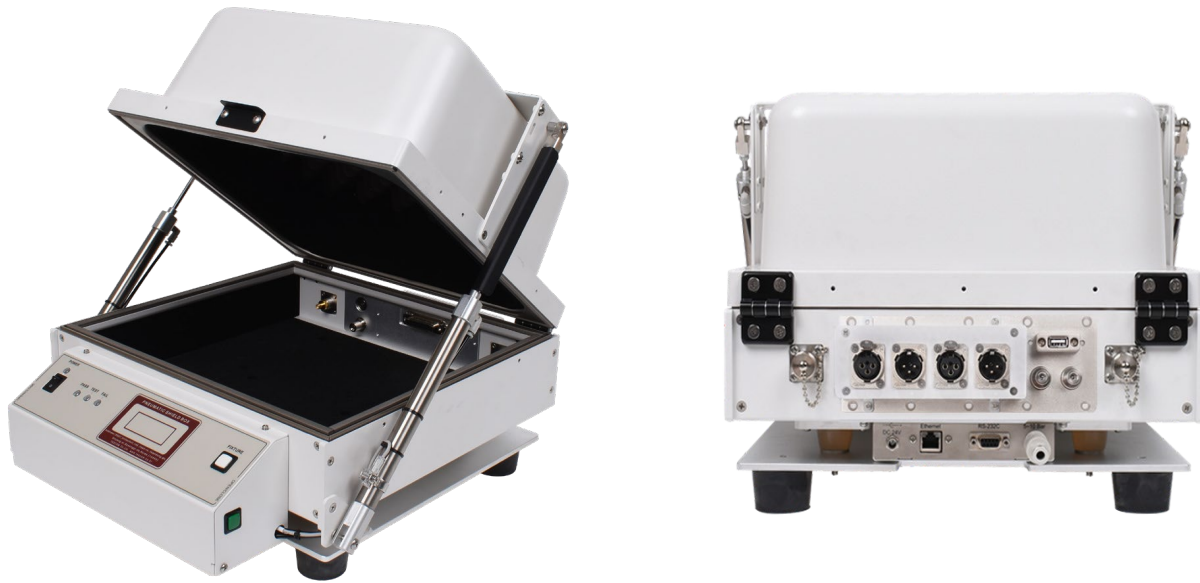
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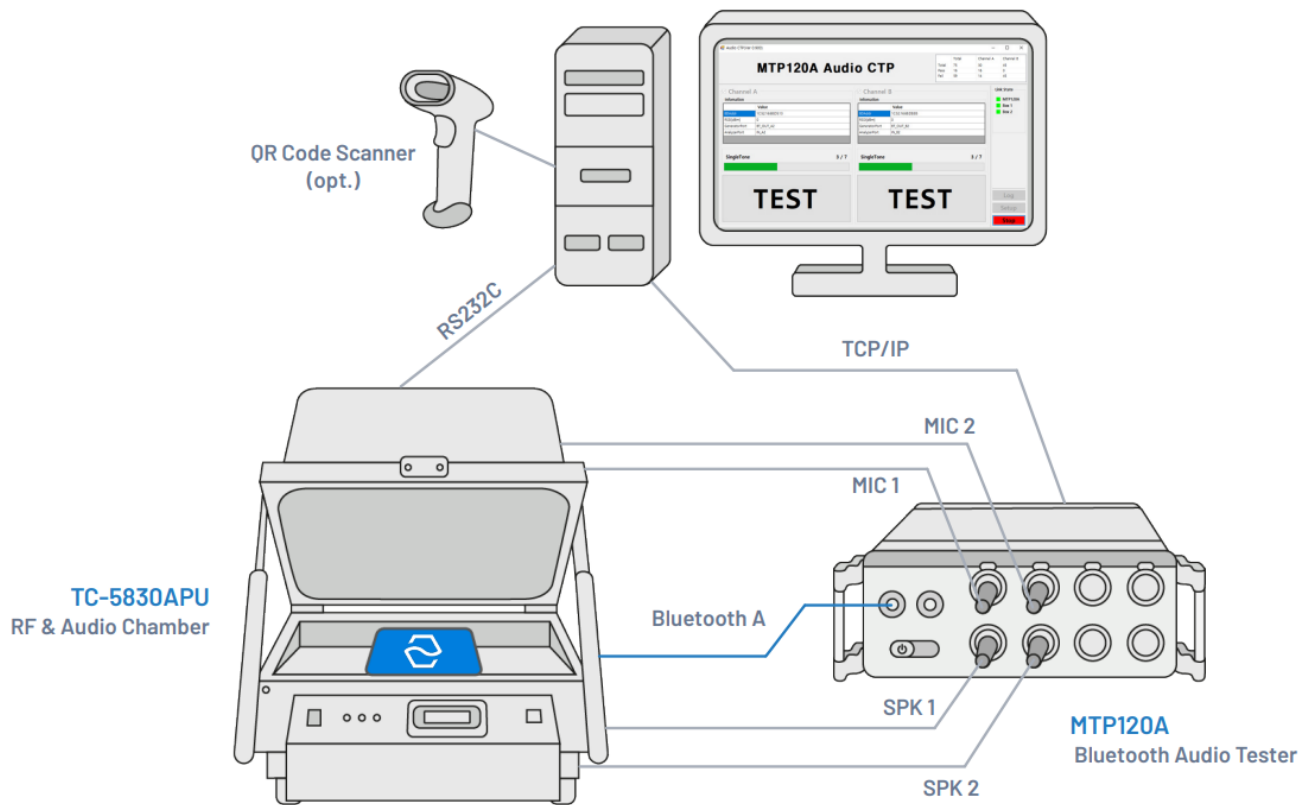


### Introduction

The TC-5830APU is our compact high-performance RF audio shield box offering testing solutions for both RF and sound system devices. TC-5830APU supports a range up to 12 GHz to enable testing on forward-looking technologies such as 5G, UWB, and WIFI 6E variants. TC-5830APU can be operated remotely via remote control, while additional features like the dual pressure control lid and sensor ensure enhanced user safety. The TC-5830APU comes pre-fitted with two RF connectors with other prebuilt and custom I/O options available upon inquiry.

### Features

- High durability and reliable RF-shielding
- Effective radiation testing environment with RF-absorber
- Vibration Dampening Implementation through the Design of the Dampers
- Pneumatic operation of lid and fixture movements
- EMI filters on all data ports and power line
- Customizable I/O connections
- Red and green LED's for pass/fail indication
- Remote control by RS-232C



## Mechanical Specifications

|                            |  |
|----------------------------|--|
| Standard RF Connector      | Two (2) N(f) outside and SMA(f) inside                           |
| Line Voltage               | 24 VDC, Max. 2 A   |
| Remote Control             | RS-232C, 3 wire, DB9(s)  |
| Air Connection             |  |
| Main Connection            | 6 mm OD hose, one-touch push-on fitting                          |
| Fixture Control Connection | 4 mm OD hose, one-touch push-on fitting                          |
| Input Air Pressure         | 5 to 10 bar  |
| Dimensions                 |  |
| Inside                     | 332 (W) x 312 (D) x 161 (H) mm                                   |
| Outside                    | 420 (W) x 432 (D) x 305 (H) mm: lid closed, 460 (H) mm: lid open |
| Weight                     | Approx. 15 kg  |
| *Packing                   |  |
| Size                       | 480 (W) x 545 (D) x 410 (H) mm                                   |
| Weight                     | Approx. 17 kg  |

\* The size or weight of a package may vary depending on how the product is packed.

## RF Specifications

\*The shielding effectiveness is measured with blank panels mounted; other I/O interface panel may result in different shielding effectiveness.

| Frequency        | Shielding effectiveness [dB] |
|------------------|------------------------------|
| 0.5 GHz to 2 GHz | > 70 dB                      |
| 2 GHz to 3 GHz   | > 70 dB                      |
| 3 GHz to 6 GHz   | > 60 dB                      |
| 6 GHz to 12 GHz  | > 60 dB                      |

## RF Absorber Performance

Rerrring to a metal plate (0 dB @ 0.5 GHz to 12 GHz), signal reduction is measured with the RF absorber inserted.

| Frequency        | Reflectivity [dB] |
|------------------|-------------------|
| 0.5 GHz to 3 GHz | 3 dB (Typ.)       |
| 3.5 GHz to 6 GHz | 6 dB (Typ.)       |
| 6 GHz to 12 GHz  | 10 dB (Typ.)      |

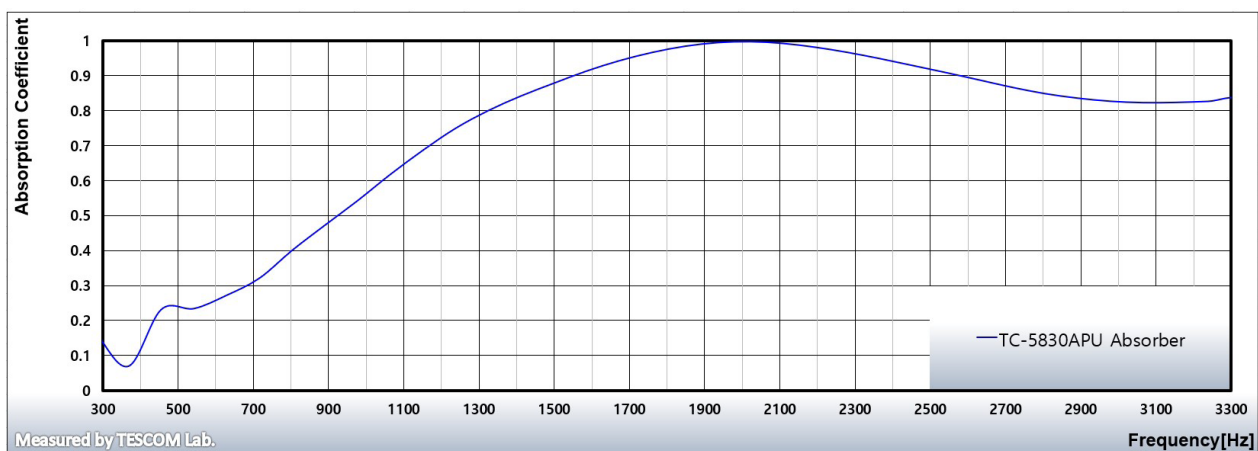
## Audio Specifications

The sound isolation below is measured with blank panels. It is measured with an audio analyzer under the condition of 1 m distance between reference speaker and microphone.

| Frequency         | Sound Isolation [dB] |
|-------------------|----------------------|
| 315 Hz to 800 Hz  | > 15 dB              |
| 800 Hz to 2.5 kHz | > 20 dB              |
| 2.5 kHz to 10 kHz | > 30 dB              |

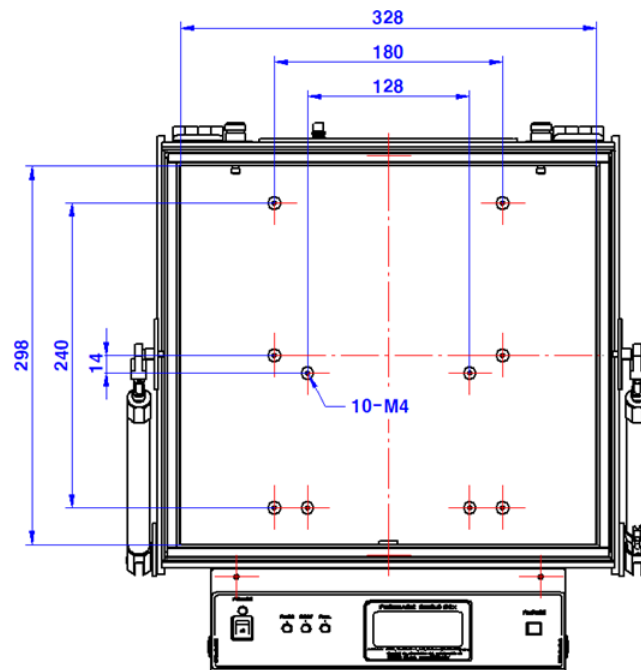
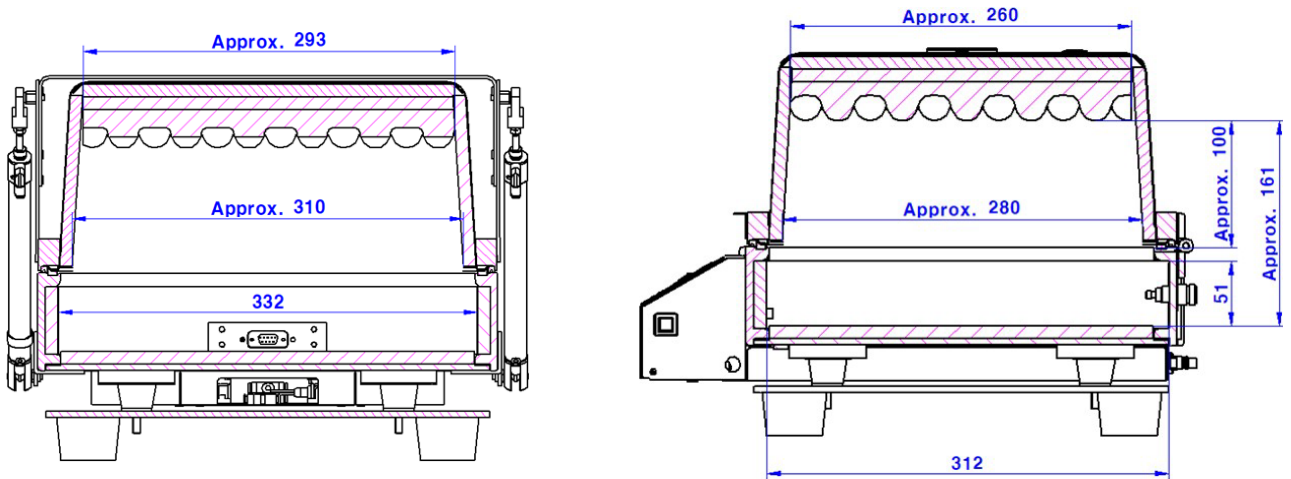
## Audio Absorber Performance

(ISO 10534-2: Impedance Tube Method)



## Inner Dimensions

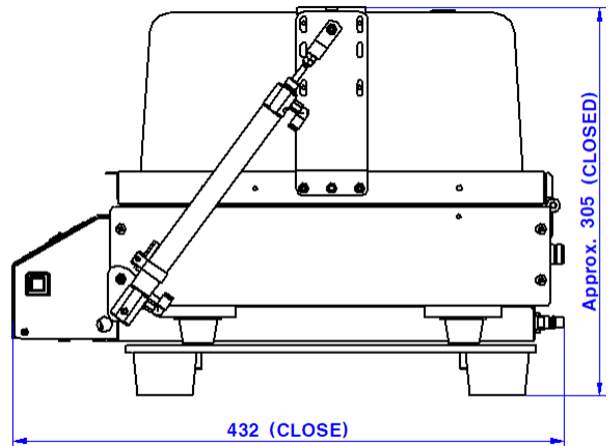
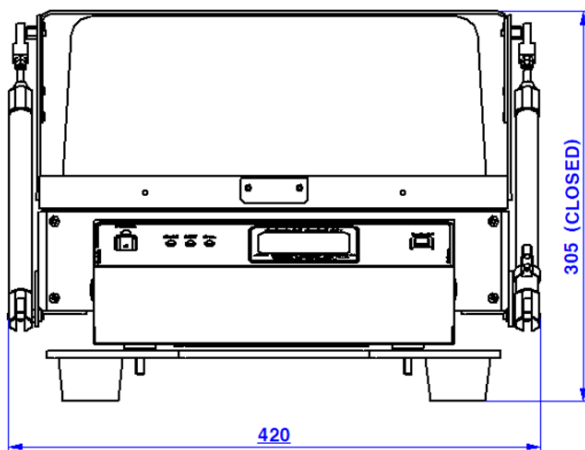
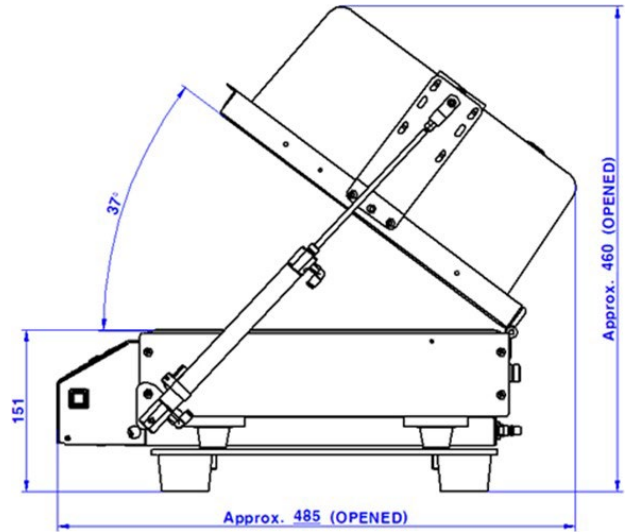
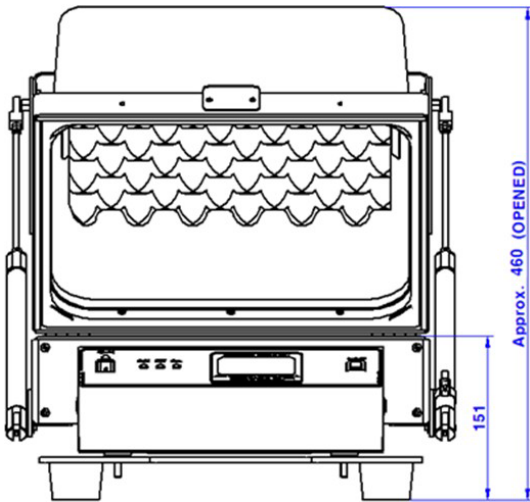
TC-5830APU Inner Dimensions (WxDxH): 332(W) x 312(D) x 161(H) mm



## Outer Dimensions

TC-5830APU Outer Dimensions (WxDxH):

420(W) x 432(D) x 305(H) mm, lid closed. 460 (H), lid opened.





## Ordering Information

| Order Number | Product              |
|--------------|----------------------|
| TC-5830APU   | Pneumatic Shield Box |


## Standard Accessories

| Product                | Description               |
|------------------------|---------------------------|
| Switching Power Supply |                           |
| Power Cable            | 220V, 1.5m                |
| RS-232 Cable           | DB 9 (p) to DB9 (s), 2m   |
| RF Cable               | SS-402, N (m) to N (m) 1m |
| Air Coupler            |                           |
| Bracket                |                           |
| Test Report            |                           |

## Optional Accessories

| Product   | Code       | Configuration                          |
|---|------------|--|
|  | 4410-1131  | Canare L-2E5 Cable 30cm, DB9 connector |
|   | 4410-1161  | Canare L-2E5 Cable 60cm, DB9 connector |
|  | 4410-2021A | RG174 Coax Cable 20cm, BNC connector   |
|   | 4410-2031A | RG174 Coax Cable 30cm, DB9 connector   |
|   | 4410-2061A | RG174 Coax Cable 60cm, DB9 connector   |

## Pre-configured I/O Interface Panels

| Product   | Code    | Configuration   |
|---|---------|---|
| <br>Data Interface Panel | M06026A | Two (2) XLR (p), Two (2) XLR (s) outside DB25 (s) inside, 1000 pF Pi filter<br>Two (2) DC Power Jack outside and inside One<br>(1) USB 2.0 outside and inside |

Customized I/O Interface Panel is available by selecting below I/O Filters and combine.  
Please contact Tescom sales team or your local distributor.

## I/O Filters

| I/O Filters   | Code   | Description                                    | *Typical Shielding  |
|---|--|--|---|
|    | <b>3409-0009-1</b><br>DB25, 1000pF pi Filter   | 3 Mbps / 100 VDC<br>5 Amps max                 | >70 dB from 0.5 to 2 GHz<br>>80 dB from 2 to 3 GHz<br>>70 dB from 3 to 6 GHz                            |
|    | <b>3409-0014-1</b><br>DB25, 100pF pi Filter  | 10 Mbps / 100 VDC<br>5 Amps max                | >50 dB from 0.5 to 2 GHz<br>>60 dB from 2 to 3 GHz<br>>60 dB from 3 to 6 GHz                            |
|    | <b>3409-0008-1</b><br>DB9, 1000pF pi Filter  | 3 Mbps / 100 VDC<br>5 Amps max                 | >70 dB from 0.5 to 2 GHz<br>>80 dB from 2 to 3 GHz<br>>70 dB from 3 to 6 GHz                            |
|    | <b>3409-0010-1</b><br>DB9, 100pF pi Filter   | 10 Mbps / 100 VDC<br>5 Amps max                | >50 dB from 0.5 to 2 GHz<br>>60 dB from 2 to 3 GHz<br>>60 dB from 3 to 6 GHz                            |
|    | <b>3409-0018A-3<sup>(*)</sup></b><br>USB 2.0 Filter  | 480 Mbps / 5 V, 500 mA<br>Max Current: 5 A     | >60 dB from 0.5 to 2 GHz<br>>70 dB from 2 to 3 GHz<br>>70 dB from 3 to 6 GHz<br>>70 dB from 6 to 12 GHz |
|   | <b>3409-0042A-2<sup>(*)</sup></b><br>USB 3.2 Gen 1,<br>Type A Filter (Active)                    | 5000 Mbps / 5 V, 600 mA<br>Max Current: 1.5 A  | >80 dB from 0.5 to 2 GHz<br>>80 dB from 2 to 3 GHz<br>>75 dB from 3 to 6 GHz<br>>55 dB from 6 to 12 GHz |
|  | <b>3409-0046A</b><br>USB 3.2 Gen 2,<br>Type C Filter (Active)                                    | 10 Gbps / 4 - 22V Max<br>Current: 5 A          | >70 dB from 0.5 to 2 GHz<br>>70 dB from 2 to 3 GHz<br>>70 dB from 3 to 6 GHz<br>>70 dB from 6 to 12 GHz |
|  | <b>3904-0022A</b><br>RJ-45 Filter  | 1 Gbit/s Copper-Line<br>Ethernet (1000 BASE-T) | >60 dB from 0.5 to 2 GHz<br>>70 dB from 2 to 3 GHz<br>>70 dB from 3 to 6 GHz<br>>60 dB from 6 to 12 GHz |
|  | <b>3406-0004A</b><br>DC Power Adaptor  | 50 VDC<br>3 Amps max                           | >70 dB from 0.5 to 2 GHz<br>>80 dB from 2 to 3 GHz<br>>80 dB from 3 to 6 GHz<br>>70 dB from 6 to 12 GHz |
|  | <b>3406-0005A</b> (Black)<br><b>3406-0006A</b> (White)<br>DC Power Adaptor<br>(Banana Jack Type) | 50 VDC<br>10 Amps max                          | >70 dB from 0.5 to 2 GHz<br>>80 dB from 2 to 3 GHz<br>>80 dB from 3 to 6 GHz<br>>70 dB from 6 to 12 GHz |
|  | <b>3103-0009A</b><br>AC Power Adaptor  | 250 VAC<br>7 Amps max                          | >70 dB from 0.5 to 2 GHz<br>>80 dB from 2 to 3 GHz<br>>80 dB from 3 to 6 GHz<br>>70 dB from 6 to 12 GHz |
|  | <b>3408-0100</b><br>RF, N-SMA Connector  | From DC to 18 GHz<br>50 Ω / 1.3 max            | N/A   |





**3408-0101**  
RF, SMA-SMA Connector

From DC to 18 GHz  
50 Ω / 1.3 max

N/A

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\*Typical Shielding is an estimated value with I/O interface applied.

\*\* Exclusive cables should be used. (USB Cable, 4008-0079A, 2 M, USB 3.0 A(M) - USB 3.0 A(M), Housing: Aluminum)

The data above were measured by TESCO standards, and they may be different depending on the measuring method and environment.

Each shielding effectiveness is measured without any cable, so it will be likely affected when a cable is connected.

Also, it may vary depending on the type of cable.



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