



Concentric Technology Solutions Inc

Solutions for the Wireless Industry

TC-5820AP  **TESCOM**
WIRELESS

Pneumatic Shield Box

Data Sheet



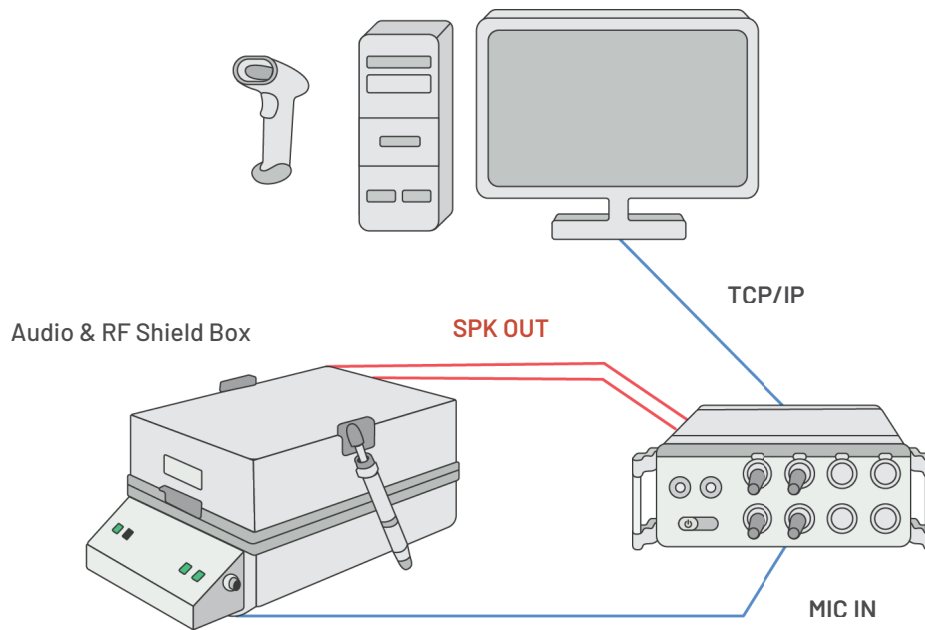
Introduction

TC-5820AP is a RF & Audio Shield Box for testing the acoustic performance of a wireless terminal as well as its RF performance within 100 MHz and 6 GHz bandwidth.

TC-5820AP is equipped with RF & audio absorber optimized for acoustic test. The absorber reduces scattering of EM wave caused by DUT or test antenna, and it also minimizes distortion of audio signal.

Features

- High durability and reliable RF-shielding
- Effective radiation testing environment with RF-absorber
- Specifically designed for various shapes of mobile phones
- Pneumatic operation of lid and fixture movements
- Remote control by RS-232C
- EMI filters on all data ports and power line
- Diverse I/O interface options



Mechanical Specifications

Basic RF Connector	Two (2) N(f) outside and SMA(f) inside
Line Voltage	24 VDC
Power Consumption	Max 1.5 W
Remote Control	RS-232C, 3 wire, DB9(s), dual remote switch
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	256 (W)x 395 (D)x 198 (H) mm
Outside	417 (W)x 601 (D)x 332 (H) mm: lid closed, 623 (H) mm: lid open
Weight	Approx. 22 kg
*Packing	
Size	560 (W)x 820 (D)x 480 (H) mm
Weight	Approx. 33 kg

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

RF Specifications

The Shielding effectiveness below is measure with blank panels. Other interface panels may result in different shielding effectiveness.

Frequency	Shielding effectiveness [dB]
100 to 2000 MHz	> 70 dB
2000 to 3000 MHz	> 70 dB
3000 to 6000 MHz	> 60 dB

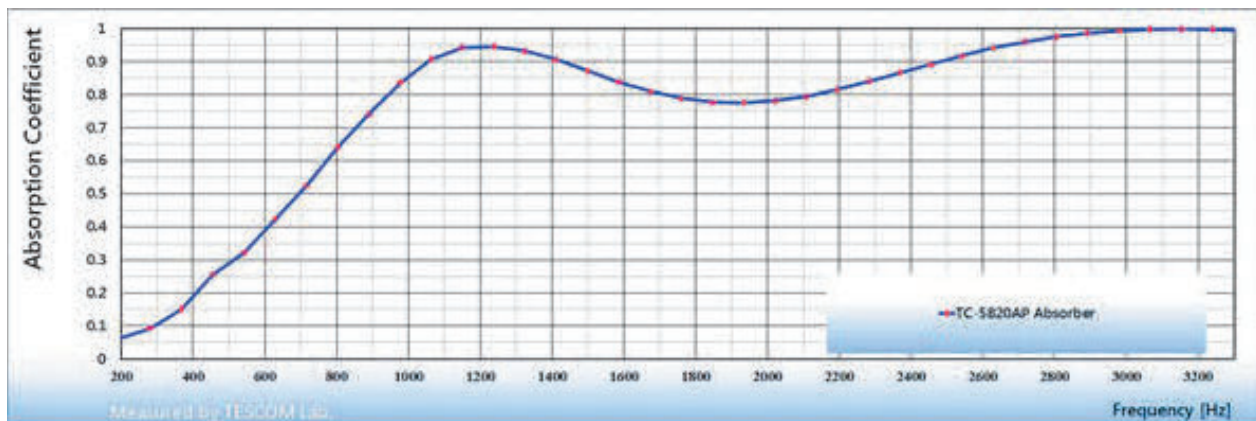
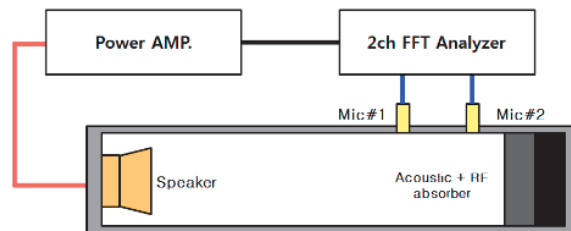
Typical Sound Isolation

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]
200 to 400 MHz	> 15 dB
400 to 2000 MHz	> 25 dB
2000 to 10000 MHz	> 30 dB

Audio Absorber Performance

(ISO 10534-2: Impedance Tube Method)



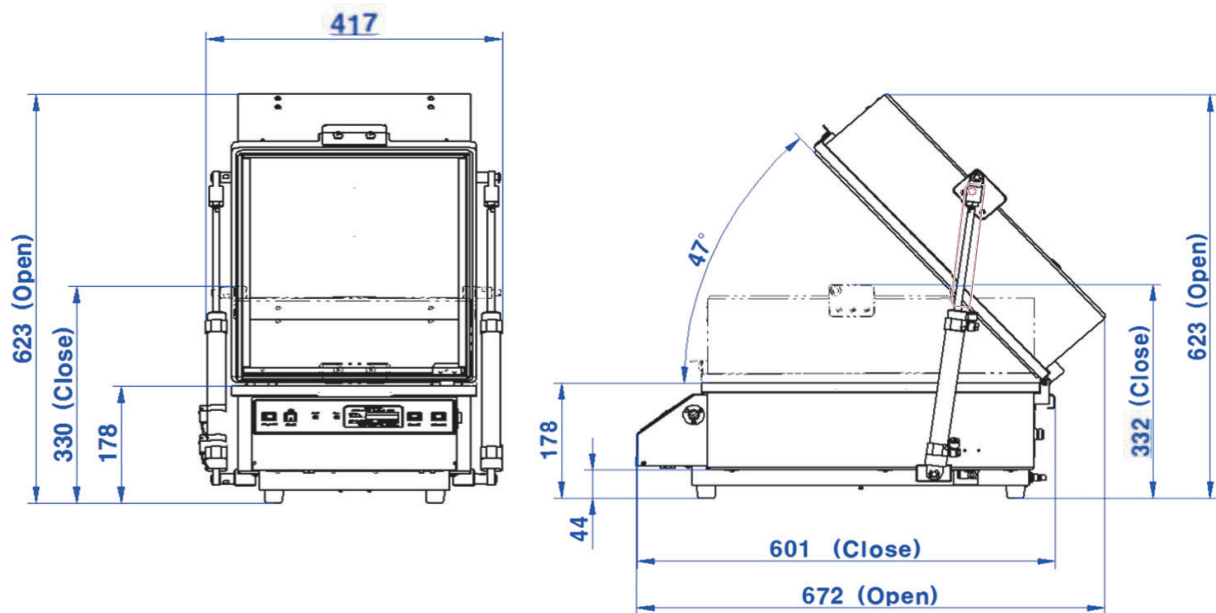
RF Absorber Performance

In reference to metal plate (0 dB @ 0.5 ~ 6 GHz), signal reduction is measured with the RF absorber inserted.

Frequency	Reflectivity [dB]
0.5 GHz to 3.5 GHz	10 dB (Typ.)
3.5 GHz to 6 GHz	15 dB (Typ.)

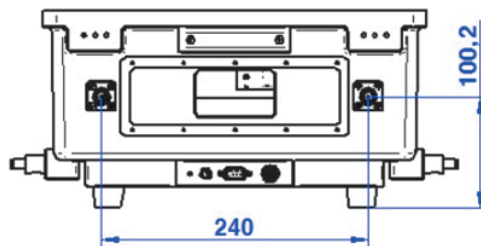
Outer Dimensions

TC-5820AP Inner Dimensions: 417(W) x 601(D) x 332(H) mm: lid closed, 623(H) mm : lid opened.



[Front View]

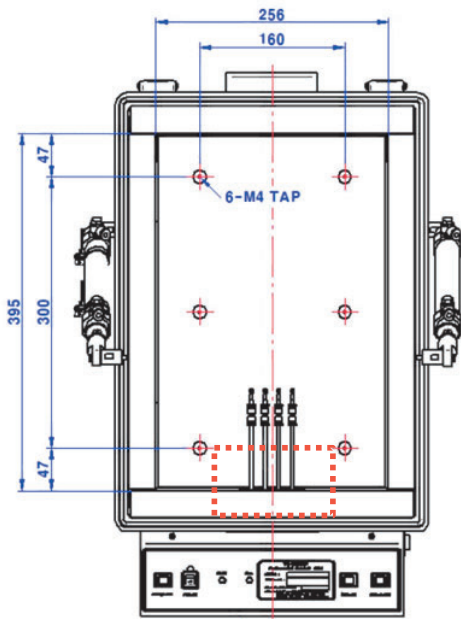
[Side View]



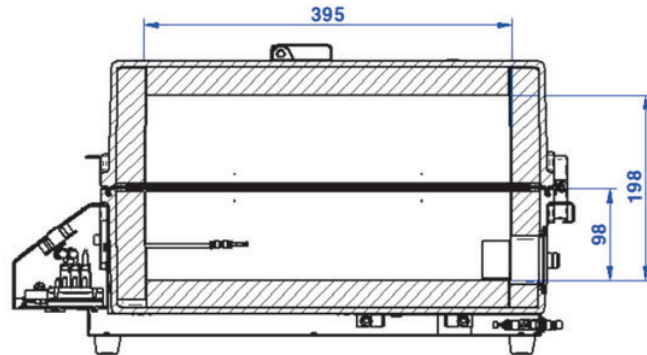
[Rear View (Without Lid)]

Inner Dimensions

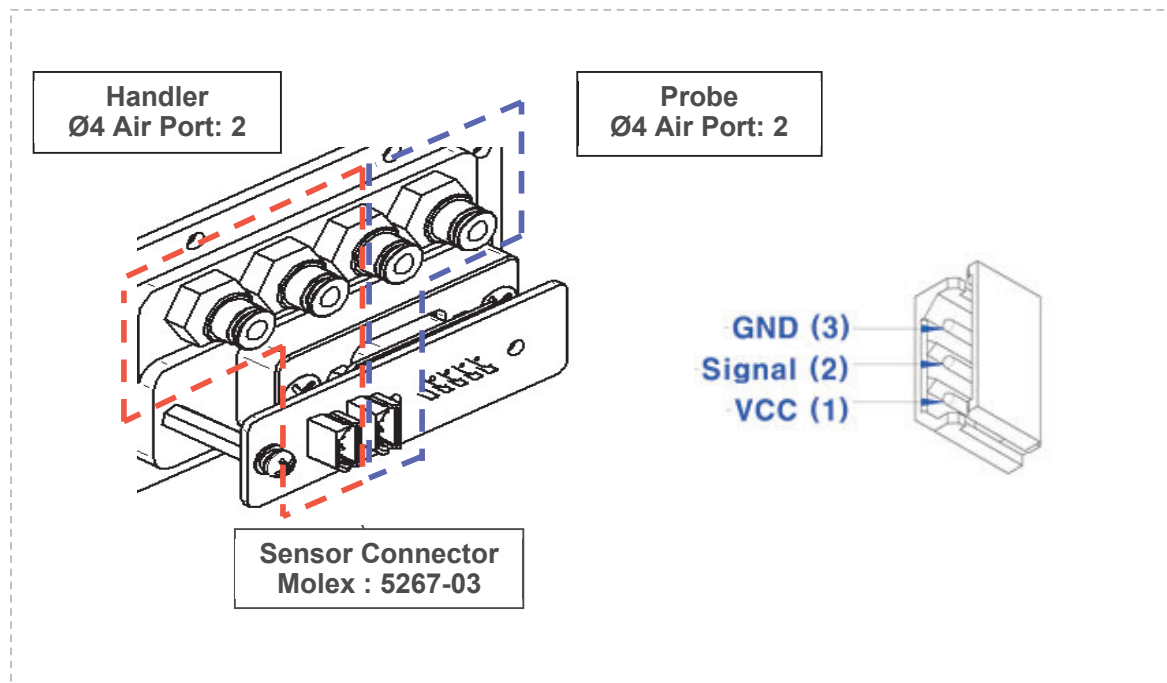
TC-5820AP Outer Dimensions : 256 (W) x 395 (D) x 198 (H) mm, lid closed. 460 (H), lid opened.



[Top View]



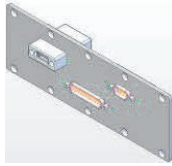
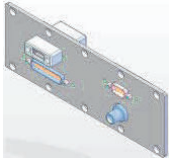
[Side View]





Ordering Information

Order Number	Description
TC-5820AP	<p>Pneumatic Shield Box (including accessories below)</p> <p>Test Report</p> <p>Power Cable, 220V, 1.5 m, 1 pc</p> <p>Switching Power Supply, 1 pc</p> <p>SS-402, N(m)-N(m), 1 m, 1 pc</p> <p>RS-232 Cable, DB9(p) to DB9(s), 2 m, 1 pc</p> <p>Air Coupler, 1 pc</p> <p>Remote Switch Cable, 2 m, 1 pc</p>

Pre-Configured I/O Interface Panels

I/O Interface Panel	Order Number	Configuration
 <p>Data Interface Panel</p>	M591602A	<ul style="list-style-type: none"> • One (1) DB25 (p) outside and DB25 (s) inside, 1000Pi filter • One (1) DB9 (p) outside and DB9 (s) inside, 100 pF Pi filter
 <p>Data Interface Panel</p>	M591605A	<ul style="list-style-type: none"> • One (1) DB25 5(p) outside and DB25 (s) inside, 1000 pF Pi filter • One (1) DB9 (p) outside and DB9 (s) inside, 100 pF Pi filter • One (1) USB 2.0 outside and inside • One (1) DC Power Jack outside and inside

Optional Accessories

Product	Code	Configuration
 <p>Microphone</p>	3101-0009A	Canare L-2E5 Cable 30cm, RCA connector
	3101-0010A	Canare L-2E5 Cable 60cm, RCA connector
	3101-0033A	Canare L-2E5 Cable 35cm, DB9 connector
 <p>Speaker</p>	3101-0011A-1	RG174 Coax Cable 76cm, RCA connector
	3101-0024A	RG174 Coax Cable 35cm, DB9 connector

Custom I/O Interface Panels

I/O Filters	Code	Description	*Typical Shielding
	3409-0009-1 DB25, 1000pF pi Filter	3 Mbps / 100 VDC 5 Amps max	>70 dB from 0.5 to 2 GHz >80 dB from 2 to 3 GHz >70 dB from 3 to 6 GHz
	3409-0014-1 DB25, 100pF pi Filter	10 Mbps / 100 VDC 5 Amps max	>50 dB from 0.5 to 2 GHz >60 dB from 2 to 3 GHz >60 dB from 3 to 6 GHz
	3409-0008-1 DB9, 1000pF pi Filter	3 Mbps / 100 VDC 5 Amps max	>70 dB from 0.5 to 2 GHz >80 dB from 2 to 3 GHz >70 dB from 3 to 6 GHz
	3409-0010-1 DB9, 100pF pi Filter	10 Mbps / 100 VDC 5 Amps max	>50 dB from 0.5 to 2 GHz >60 dB from 2 to 3 GHz >60 dB from 3 to 6 GHz
	3409-0018A-3 USB 2.0 Filter	480 Mbps / 5 V, 500 mA Max Current: 5 A	>60 dB from 0.5 to 2 GHz >70 dB from 2 to 3 GHz >70 dB from 3 to 6 GHz
	3409-0042A-2 USB 3.0 Filter (Active)	5000 Mbps/ 5 V, 600 mA Max Current: 1.5 A	>80 dB from 0.5 to 2 GHz >80 dB from 2 to 3 GHz >75 dB from 3 to 6 GHz
	3409-0046A USB 3.2 Gen 2 Type C Adapter (Active)	10 Gbps / 4 - 22V Max Current: 5 A	>70 dB from 0.5 to 2 GHz >70 dB from 2 to 3 GHz >70 dB from 3 to 6 GHz
	3409-0022A RJ-45 Filter	1 Gbit/s Copper-Line Ethernet (1000 BASE-T)	>60 dB from 0.5 to 2 GHz >70 dB from 2 to 3 GHz >70 dB from 3 to 6 GHz
	3406-0004A DC Power Adaptor	50 VDC 3 Amps max	>70 dB from 0.5 to 2 GHz >80 dB from 2 to 3 GHz >80 dB from 3 to 6 GHz
	3406-0005A (Black) 3406-0006A (White) DC Power Adaptor (Banana Jack Type)	50 VDC 10 Amps max	>70 dB from 0.5 to 2 GHz >80 dB from 2 to 3 GHz >80 dB from 3 to 6 GHz
	3103-0009A AC Power Adaptor	250 VAC 7 Amps max	>70 dB from 0.5 to 2 GHz >80 dB from 2 to 3 GHz >80 dB from 3 to 6 GHz
	3408-0038 RF, N-SMA Connector	From DC to 6 GHz 50 Ω / 1.15 max	N/A
	408-0039 RF, SMA-SMA Connector	From DC to 8 GHz 50 Ω / 1.15 max	N/A