



Concentric Technology Solutions Inc

Solutions for the Wireless Industry

TC-5534AP mmWave Pneumatic Shield Box



Features

- Reliable high RF shielding from 0.1 GHz to 67 GHz
- Designed for long life
- Specifically designed for testing in millimeter wave band
- Pneumatic control of door open/close
- Absorbing materials for stable measurement results
- EMI filters on all data ports and power line
- Remote operation by RS-232C

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Concentric Technology Solutions, Inc.

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TC-5534AP mmWave Pneumatic Box Data Sheet

Specifications

Mechanical Specification

Basic RF connector	
Rear Plate	1.85 mm connector(f)
Remote control	RS-232C, Dual Remote Switch
PLC / Standalone connection	
Rear control case	PLC-DB9 pin, Standalone – RS-232C
Air connection	
Main connector	6 mm OD hose, one-touch fitting
Input air pressure	5 to 10 bar
Line voltage	
Input Voltage	100 - 240 VAC
Frequency	50/60 Hz
Power Consumption	Less Than 2watt (Typical)
Dimension	
Outside	474(W) x 567(D) x 551(H) mm
Door Size	236(W) x 136(H) mm
Door Stroke(Open/Close)	300 mm
Weight	approx. 34 kg
*Packing	
Size	620(W) x 710(D) x 683(H) mm
Weight	approx. 39 kg

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

Typical RF Shielding

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

Frequency Range	Shielding Effectiveness [dB]
0.1 GHz to 30 GHz	> 60 dB
30 GHz to 67 GHz	> 60 dB

Absorber Reflectivity

metal plate (0 dB @ 0.5 GHz to 67 GHz), signal reduction is measured with the RF absorber inserted.

Frequency Range	Reflectivity [dB]
0.5 GHz to 2 GHz	15 dB (Typ.)
2 GHz to 67 GHz	20 dB (Typ.)

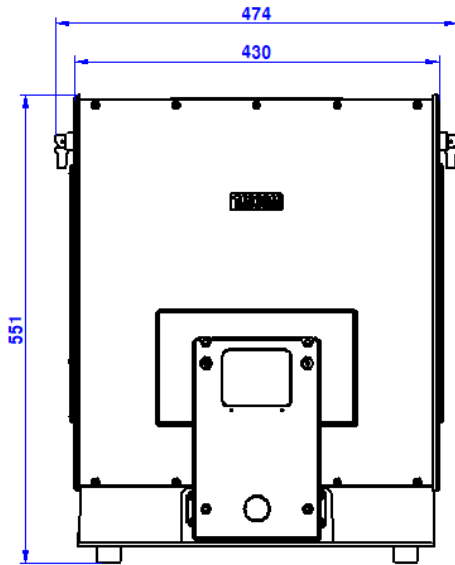
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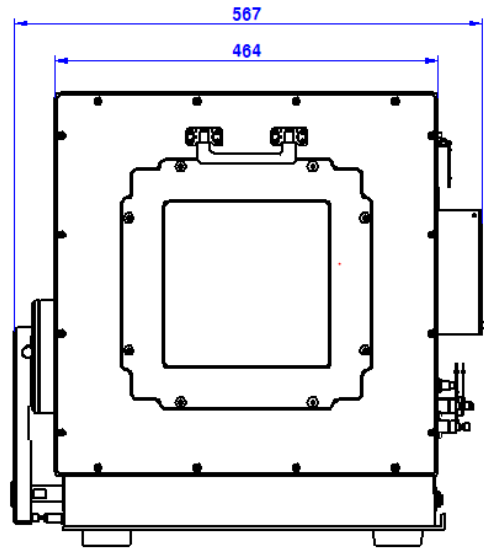
Dimensions

- TC-5534AP

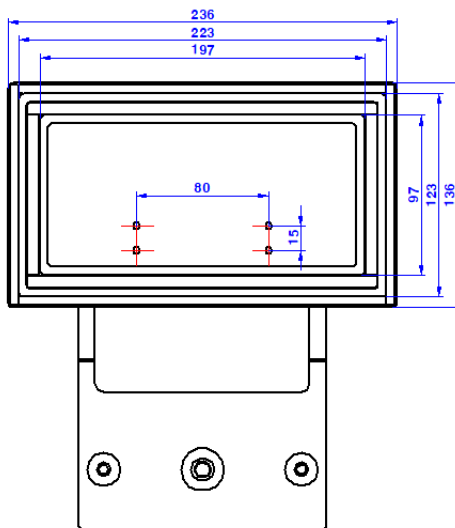
Outer Dimension (WxDxH) : 474(W) x 567(D) x 551(H) mm



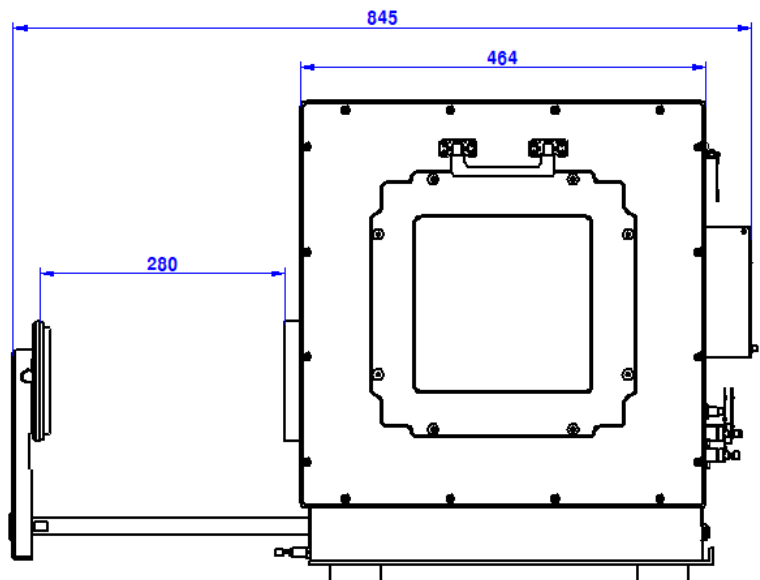
Front View



Side View(closed)



Door View



Side View(opened)

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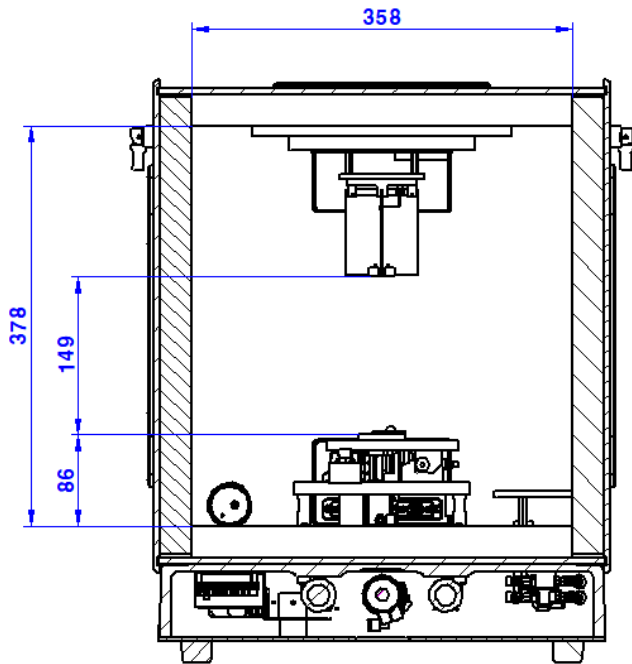
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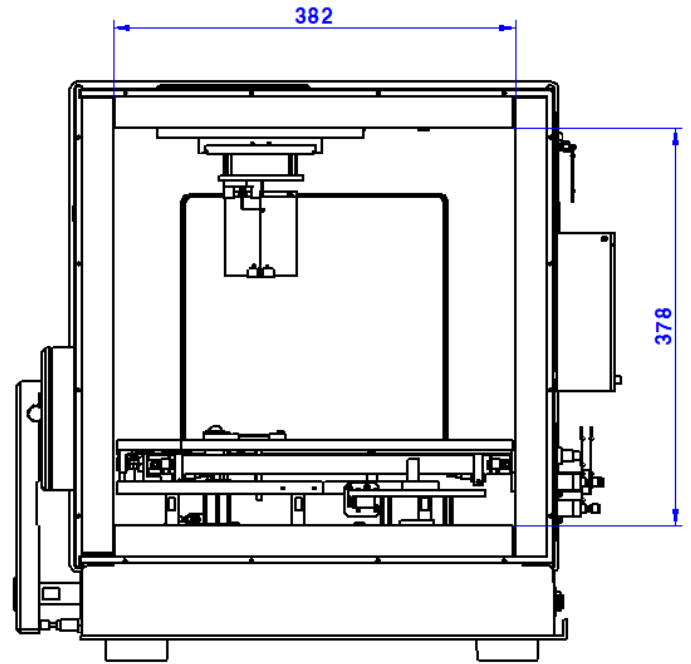


TC-5534AP mmWave Pneumatic Box Data Sheet

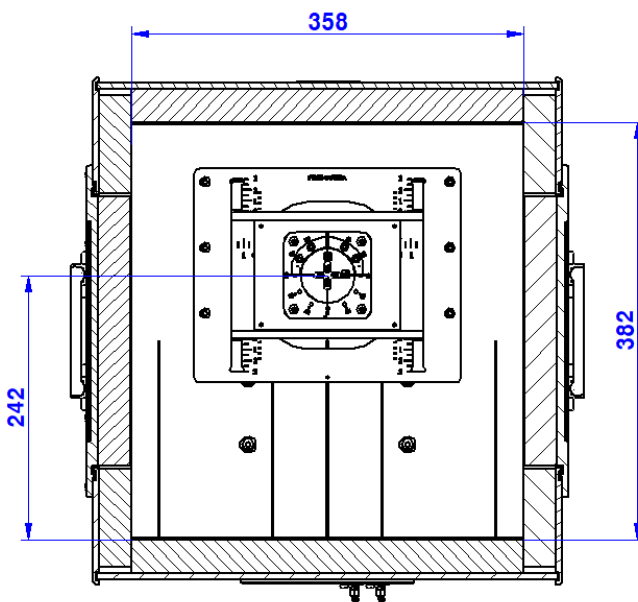
Inner Dimension (WxDxH) : 358(W) x 382(D) x 378(H) mm



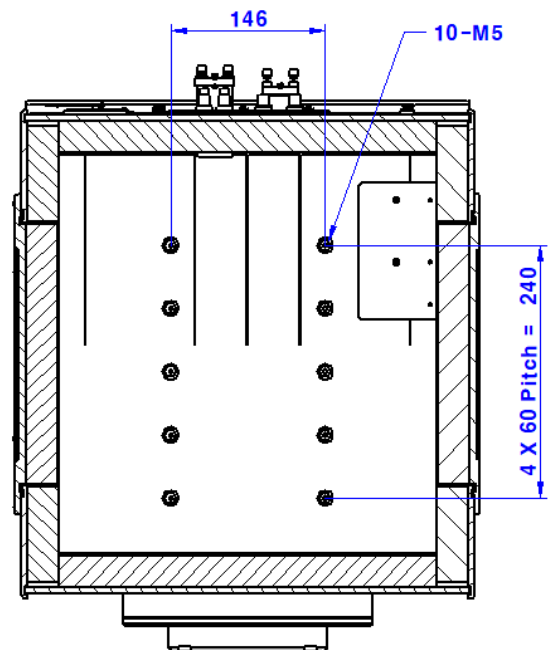
Front View



Side View



Top View

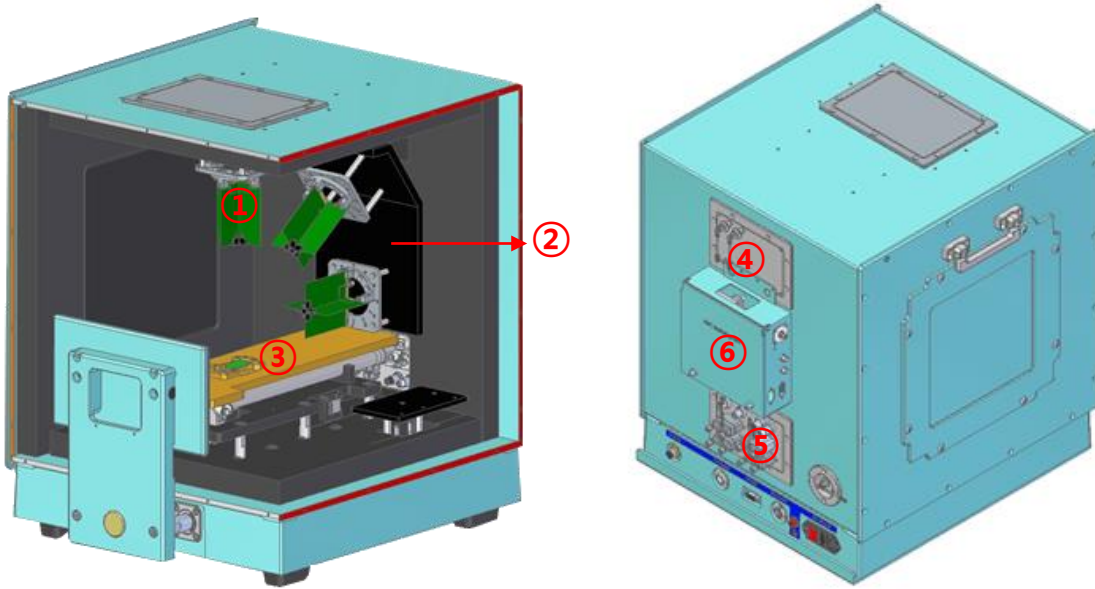


Bottom View (FIXTURE. Removed)

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TC-5534AP Configuration Example



No.	Detailed View	Order Number & Description
①		<ul style="list-style-type: none"> F5534AP02A, Top Antenna Fixture - Antenna : TC-93177A (6 GHz ~ 12 GHz)
②		<ul style="list-style-type: none"> F5534AP04A, Rear Antenna Fixture (Antenna quantity and mounting position selectable) - Antenna : TC-93177A (6 GHz ~ 12 GHz)
③		<ul style="list-style-type: none"> Custom DUT Fixture
④, ⑤		<ul style="list-style-type: none"> Custom I/O Interface Panel
⑥		<ul style="list-style-type: none"> RF Switch Box


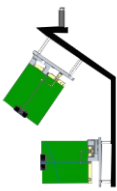
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Ordering Information

Order Number	Description
	Shield Box (including accessories below)
	Test Report
	Air coupler, 1 pc
	Remote switch Cable, 2m, 1 pc
TC-5534AP	Power Cable, 220 V, 1 pc
	USB A(p) - USB A(p), 1m, 3 pc
	USB to RS-232C Converter, 2m, 1 pc
	SMA(M) to SMA(M), 1.5m, 1 pc
	DC JACK TO BANANA , 1pc

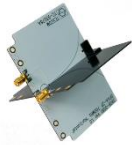
Optional Antenna Fixture

Antenna Fixture	Order Number	Configuration
	F5534AP02A	<ul style="list-style-type: none"> • Top Antenna Fixture - DPV Antenna:TC-93177A - Frequency Range: 6 GHz ~ 12 GHz - RF Connector Type: SMA Female
Top Antenna Fixture		
	F5534AP04A	<ul style="list-style-type: none"> • Rear Antenna Fixture - DPV Antenna:TC-93177A - Frequency Range: 6 GHz ~ 12 GHz - RF Connector Type: SMA Female
Rear Antenna Fixture		

■ Optional Antenna

Antenna	Order Number	Configuration
	C93177A	<ul style="list-style-type: none"> • TC-93177A DPV Antenna - Antenna Type : DPVA(Dual Polarized Vivaldi Antenna) - Frequency Range: 6 GHz ~ 12 GHz - RF Connector : 2ea, SMA(f) Type - Terminal : 50 ohm - VSWR < 3.3
DPV Antenna		
	C93084A	<ul style="list-style-type: none"> • TC-93084A DPV Antenna - Antenna Type : DPVA(Dual Polarized Vivaldi Antenna) - Frequency Range: 2 GHz ~ 8 GHz - RF Connector : 2ea, SMA(f) Type - Terminal : 50 ohm - VSWR < 3.0
DPV Antenna		

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DPV Antenna

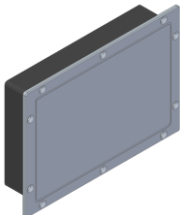
C93076A

• **TC-93076A DPV Antenna**

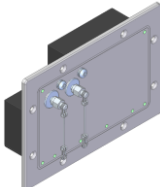
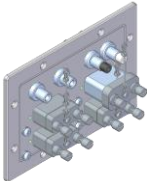
- Antenna Type : DPVA(Dual Polarized Vivaldi Antenna)
- Frequency Range: 0.7 GHz ~ 7.5 GHz
- RF Connector : 2ea, SMA(f) Type
- Terminal : 50 ohm
- VSWR < 3.2

Pre-Configured I/O Interface Panel


■ Top I/O Interface Panel

I/O Interface Panel	Order Number	Configuration
	M5534AP01A	<ul style="list-style-type: none"> • Blank Panel (Absorber)

■ Rear I/O Interface Panel

I/O Interface Panel	Order Number	Configuration
	M5570A28A	<ul style="list-style-type: none"> • 2 X SMA(F-Male)-SMA(F-Male)
	M5570A29A	<ul style="list-style-type: none"> • 1 X BANANA-JACK • 2 X DC-JACK • 3 X USB 2.0 • 1 X RJ 45

Optional DUT Fixture

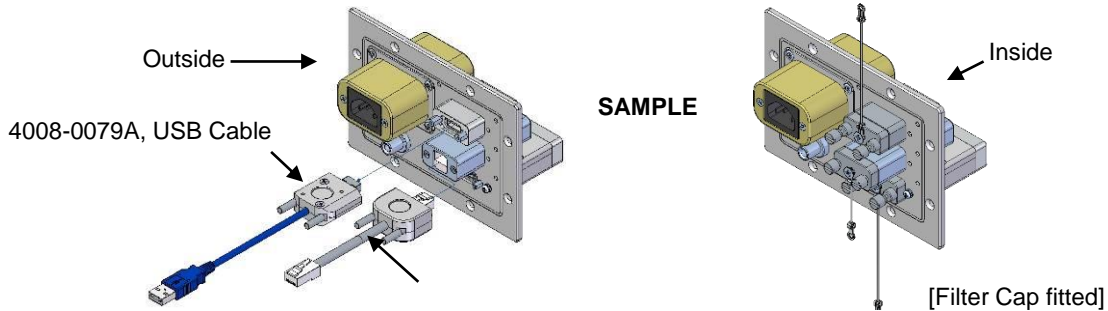
Fixture	Order Number	Configuration
	F5534AP01A	<ul style="list-style-type: none"> • DUT Guide Fixture - Grid Fixture Type

DUT Guide Fixture



Custom I/O Interface Panel

- Custom I/O interface panels are available by selecting and combining I/O interfaces below.









■ RF Connectors

- Custom RF Connector Panel is available by selecting or combining the below RF Connectors.

	RF, 2.92 mm Thru Adapter / 3407-0024	From DC to 40 GHz, 50 Ω, 1.3 max
	RF, 2.4 mm Thru Adapter / 3407-0027	From DC to 50 GHz, 50 Ω, 1.3 max
	RF, 1.85 Thru Adapter / 3412-0001	From DC to 67 GHz, 50 Ω, 1.5 max
	RF, N-SMA 4H Type Connector / 3408-0038	From DC to 18 GHz / 50 Ω / 1.3 max
	RF, SMA-SMA 4H Type Connector / 3408-0039	From DC to 18 GHz / 50 Ω / 1.3 max



Data & Power Interfaces

I/O Interface	Description / Order Number	Typical Data Rate / Line Voltage	Typical Shielding ^(*)
	USB 2.0 Filter / 3409-0018A-3 ^(a)	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 >70 dB from 6 to 67 GHz
	USB 3.1 Gen 1 Filter (Active) / 3409-0042A-2 ^(a)	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 >55 dB from 6 to 67 GHz
	RJ-45 Filter / 3904-0296A	RJ45 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 >60 dB from 6 to 67 GHz
	DC Power Adaptor / 3406-0004A	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 >70 dB from 6 to 67 GHz
	DC Power Adaptor (Banana Jack Type) 3406-0005A-1 (Black) 3406-0006A-1 (White)	50 VAC, 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 >70 dB from 6 to 67 GHz
	AC Power Adaptor / 3103-0009A	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 >70 dB from 6 to 67 GHz

- ^(a) : Exclusive cables should be used.
(USB Cable, 4008-0079A, 2 M, USB 3.0 A(M) - USB 3.0 A(M), Housing: Aluminum)
- ***Typical Shielding** is an estimated value with I/O interface applied.
- The data above were measured by internal 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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