

TC-5530AP mmWave Pneumatic Shield Box



Features

- Reliable High RF Shielding from 0.1 GHz to 67 GHz
- Designed for long life
- Specifically designed for millimeter wave test
- Pneumatic control of lid open-close
- Absorbing materials for stable measurement results
- EMI filters on all data ports and power line
- Remote operation by RS-232C

Specifications

Mechanical Specification

Basic RF connector	One(1) 1.85 mm(f) outside and 1.85 mm(f) inside
Basic Data connector	USB 2.0
Line voltage	
Input Voltage	100 ~ 240 VAC
Frequency	50/60 Hz
Power Consumption	Less than 2watt (Typical)
Remote control	RS-232C, Dual Remote Switch
Air connection	
Main connector	6 mm OD hose, one-touch fitting
Input air pressure	5 to 10 bar
Dimension	
Inside	425(W) x 374(D) x 424(H) mm
Outside	536(W) x 540(D) x 583(H) mm
Door Size	Door Closed 540(D) mm / Door Open 818(D) mm
Door Stroke(Open/Close)	176(W) x 130(H) mm
Door Stroke(Open/Close)	278mm
Weight	approx. 39 kg
*Packing	
Size	740(W) x 640(D) x 720(H) mm
Weight	approx. 48 kg

*The size or weight of a package may vary on how to pack a package.

Typical RF Shielding

The shield effectiveness below is measured when the blank panel is mounted; other I/O interface panel results a different shielding effectiveness of the shield box.

Frequency Range	Shielding Effectiveness [dB]
0.1 GHz to 30 GHz	> 70 dB
30 GHz to 67 GHz	> 60 dB

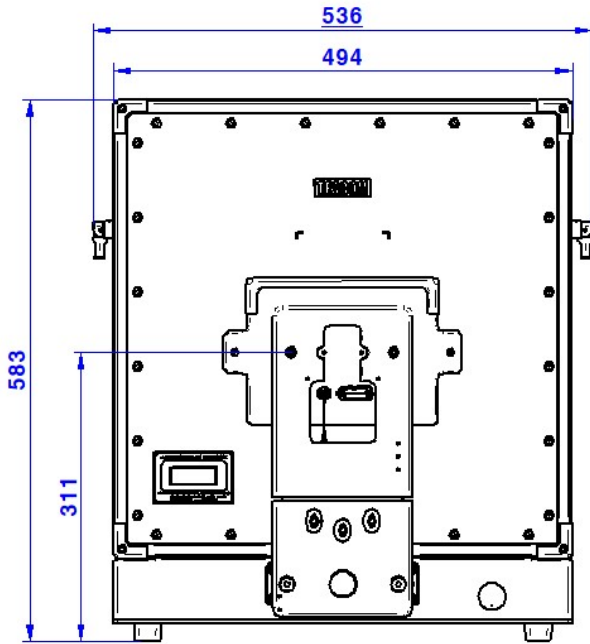
Absorber Reflectivity

Being measured based on the metal plate (0 dB @ 0.5 GHz to 67 GHz), and measures the value that is reduced when the radio wave absorber is inserted.

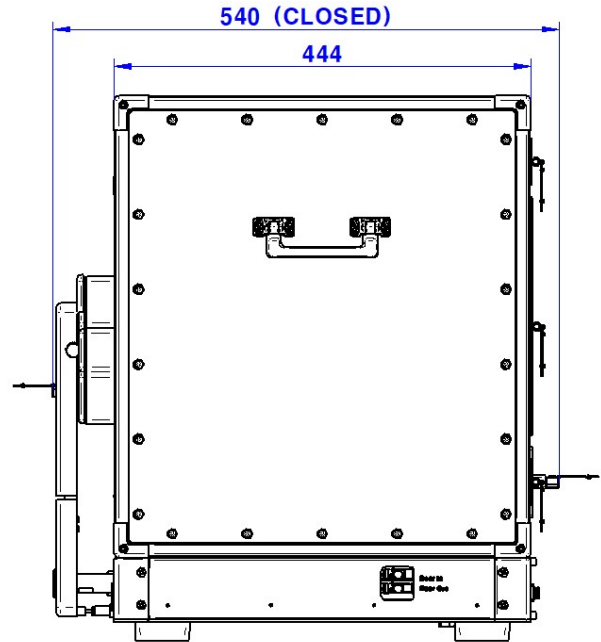
Frequency Range	Reflectivity [dB]
0.5 GHz to 2 GHz	15 dB (Typ.)
2 GHz to 67 GHz	20 dB (Typ.)

Dimensions

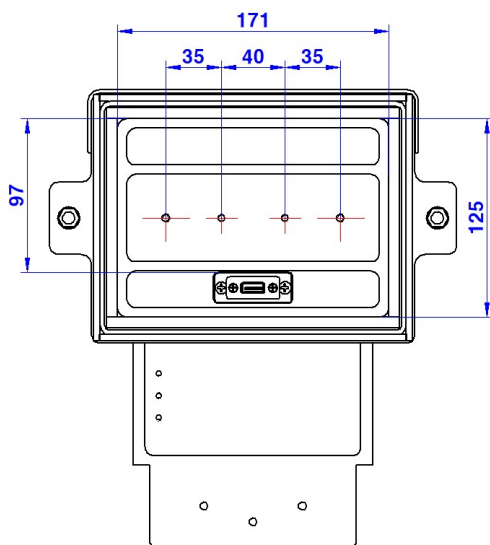
- TC-5530AP Outer Dimension (WxDxH): 536(W) x 540(D) x 583(H) mm



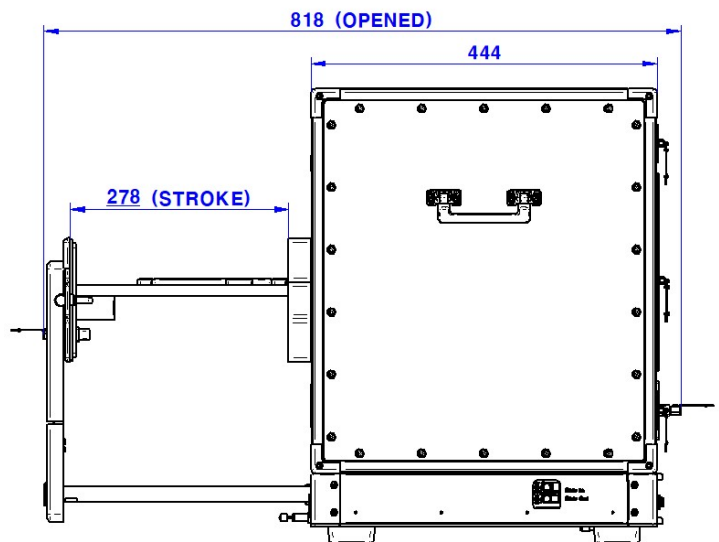
Front View



Side View(closed)

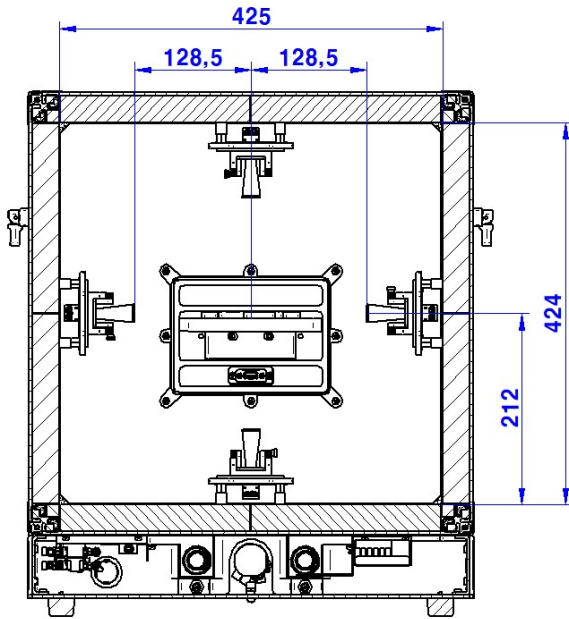


Door View

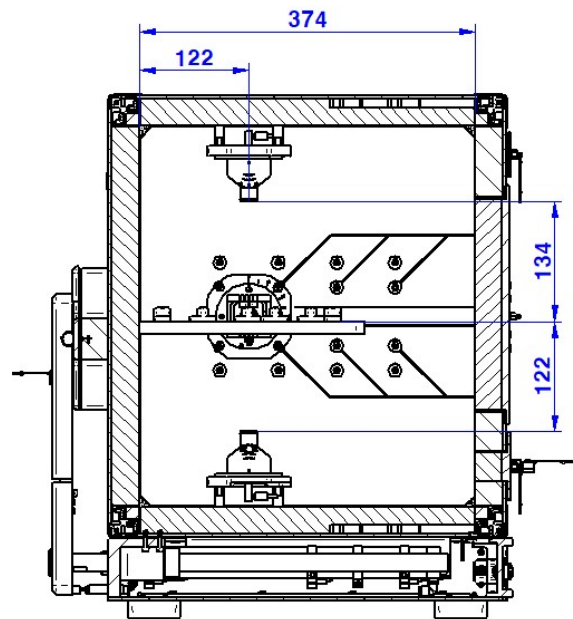


Side View (opened)

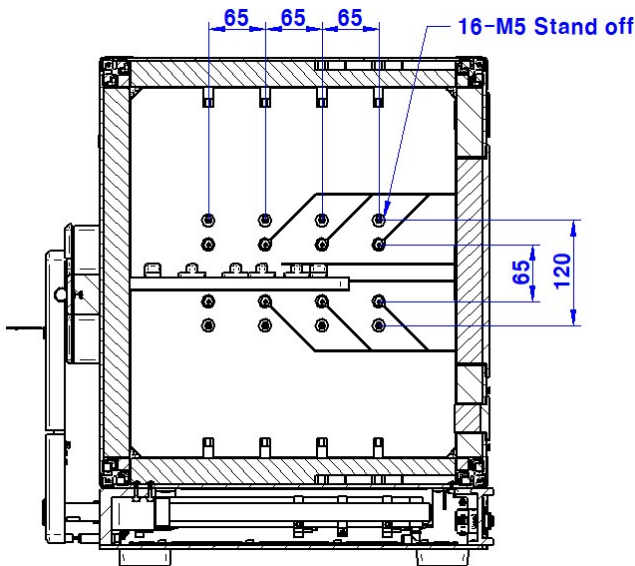
- TC-5530AP Inner Dimension (WxDxH): 425(W) x 374(D) x 424(H)



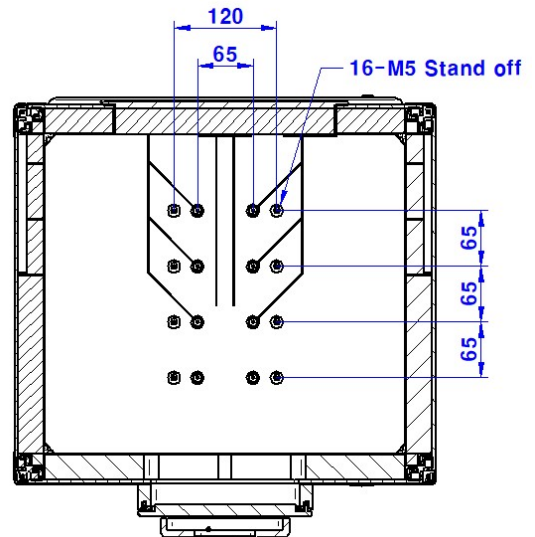
Front Inner View



Side Inner View

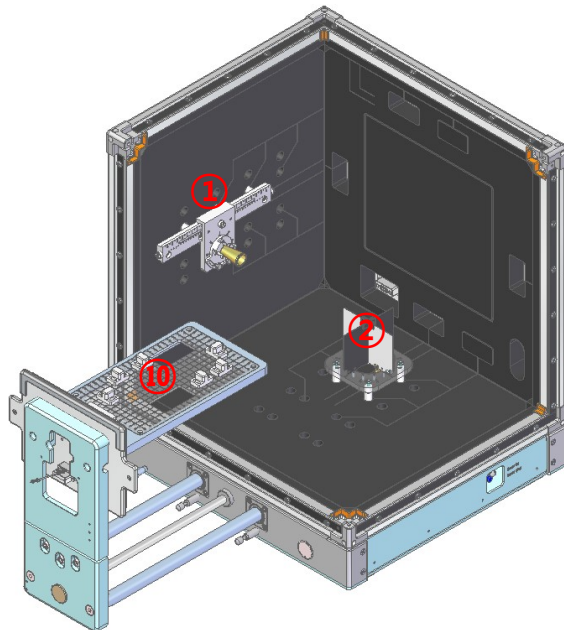


Side Inner View (Ant. Removed)

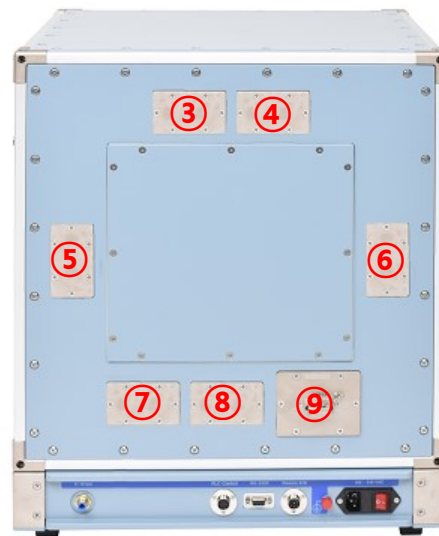


Bottom Inner View (Ant. Removed)

TC-5530AP Configuration Options



< Inner View >



< Rear View >

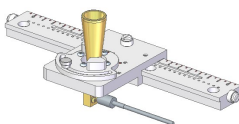
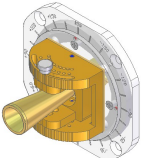
No.	Detail View	Order Number & Description
①		<ul style="list-style-type: none"> Horn Antenna Rail Fixture (Quantity and mounting position seletable) - F55305A: WR-28 Horn Antenna Fixture (26.5 GHz ~ 40 GHz)
②		<ul style="list-style-type: none"> DPV Antenna Fixture (Quantity and mounting position seletable) - F55303B: DPV Antenna Fixture (0.6 GHz ~ 7.2 GHz)
③~⑧		<ul style="list-style-type: none"> RF Connector Panel - M553002A: one(1), 2.92 mm RF Connector (DC to 40 GHz) - M553002B: one(1), 2.4 mm RF Connector (DC to 50 GHz) - M553005A: one(1), 1.85 mm RF Connector (DC to 67 GHz) - M553004A: two(2), N to SMA RF Connector (DC to 6 GHz)
⑨		<ul style="list-style-type: none"> Data Interface Panel - M5530AP03A: one(1) USB 2.0 outside and inside
⑩		<ul style="list-style-type: none"> DUT Guide Fixture - F5530AP-10: Standard DUT Cradle Fixture

Ordering Information

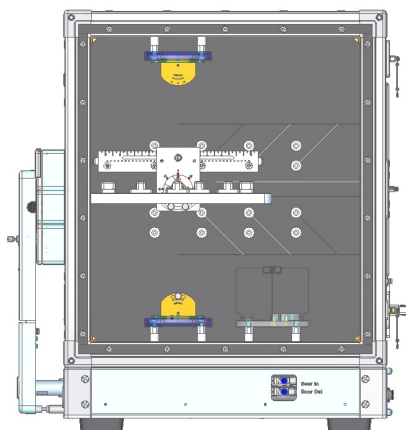
Order Number	Description
	mmWave Pneumatic Shield Box (including accessories below)
	Test Report
	Air coupler, 1 pc
TC-5530AP	Power Cable, 220 V, 1 pc
	Remote Switch, 2 m, 1 pc
	USB to RS-232(Male) Converter, 2 m, 1pc
	8Pin PLC Cable, 2m, 1pc

Optional Antenna Fixture

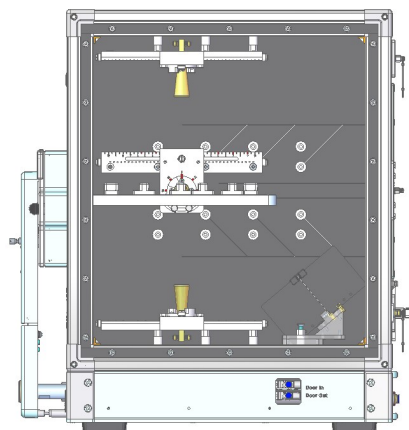
■ Horn Antenna Fixture

Antenna Fixture	Order Number	Configuration
 <p>Horn Antenna Rail Fixture</p>	F55305A	<ul style="list-style-type: none"> WR-28 Horn Antenna Rail Fixture - Frequency Range: 26.5 GHz ~ 40 GHz - Horn Antenna:TC-93471A - Waveguide: TC-93480A - RF Connector type: 2.92 mm (K-Type) Female - Azimuth rotation angle: 90° (45° increments)
 <p>Hron Antenna Fixture</p>	F55301A	<ul style="list-style-type: none"> WR-28 Horn Antenna Fixture - Frequency Range: 26.5 GHz ~ 40 GHz - Horn Antenna:TC-93471A - Waveguide: TC-93480A - RF Connector type: 2.92 mm (K-Type) Female - Azimuth rotation angle: 90° (15° increments)

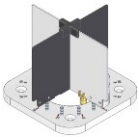

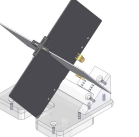
< Example Config. 1 >



< Example Config. 2 >

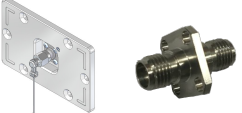
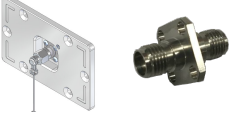




■ DPV Antenna Fixture

Antenna Fixture	Order Number	Configuration
 DPV Antenna Fixture	F55303A	<ul style="list-style-type: none"> DPV Antenna Fixture - Frequency Range: 0.7 GHz ~ 6.0 GHz - DPV Antenna:TC-93076A - RF Connector type: SMA Female * Can not be mounted with F55305A Rail Fixture
 DPV Antenna Fixture	F55303B	<ul style="list-style-type: none"> DPV Antenna Fixture - Frequency Range: 0.6 GHz ~ 7.2 GHz - DPV Antenna:TC-93083A - RF Connector type: SMA Female * Can not be mounted with F55305A Rail Fixture
 DPV Antenna Fixture	DPVA Angle Fixture	<ul style="list-style-type: none"> DPV Antenna Fixture (Angle Type) - Frequency Range: 0.6 GHz ~ 7.2 GHz - DPV Antenna:TC-93076A or TC-93083A - RF Connector type: SMA Female * See Example Config. 2






Optional RF Connector Panel

■ Pre-Configured RF Connector Panel

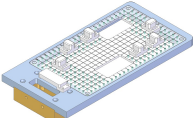
I/O Interface Panel	Order Number	Configuration
 2.92mm RF Connector	M553002A	<ul style="list-style-type: none"> one(1) 2.92mm(f) outside and 2.92mm (f) inside - Frequency Range: From DC to 40 GHz - Impedance: 50 Ω - VSWR: 1.3 max
 2.4mm RF Connector	M553002B	<ul style="list-style-type: none"> one(1) 2.4mm(f) outside and 2.4mm (f) inside - Frequency Range: From DC to 50 GHz - Impedance: 50 Ω - VSWR: 1.3 max
 1.85mm RF Connector	M553005A	<ul style="list-style-type: none"> one(1) 1.85mm(f) outside and 1.85mm (f) inside - Frequency Range: From DC to 67 GHz - Impedance: 50 Ω - VSWR: 1.3 max
 N to SMA RF Connector	M553004A	<ul style="list-style-type: none"> Two(2) two(2) N (f) outside and SMA(f) inside - Frequency Range: From DC to 6 GHz - Impedance: 50 Ω - VSWR: 1.15 max

■ Custom RF Connector Panel

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

RF Connector	Description / Order Number	Frequency Range / Impedance / V.S.W.R
	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 Connector / 3408-0038	From DC to 6 GHz / 50 Ω / 1.15 max
	RF, SMA-SMA Connector / 3408-0039	From DC to 8 GHz / 50 Ω / 1.15 max

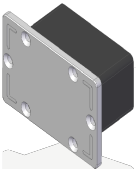
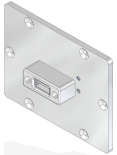
Optional DUT Fixture

Fixture	Order Number	Configuration
	F5530AP-10	<ul style="list-style-type: none"> • DUT Guide Fixture - Grid Fixture Type

DUT Guide Fixture

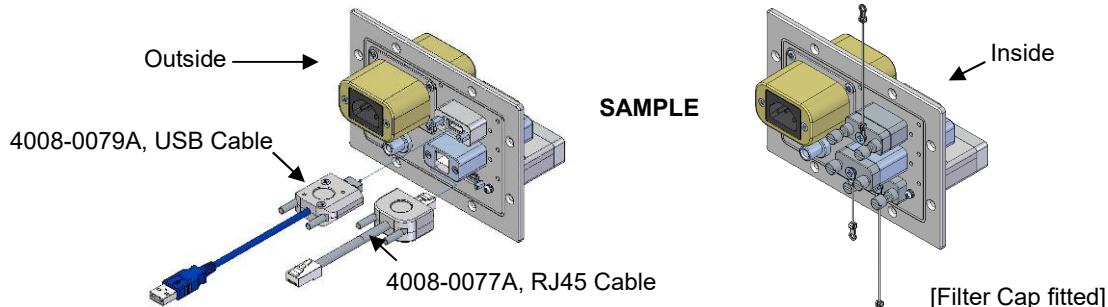
Optional I/O Interface Panel

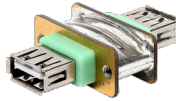




■ Pre-Configured RF Connector Panel

I/O Interface Panel	Order Number	Configuration
	M5530AP01A	<ul style="list-style-type: none"> • Blank Panel (Absorber)
	M5530AP03A	Data Interface Panel <ul style="list-style-type: none"> • one(1) USB 2.0 outside and inside

■ Custom I/O Interface Panel

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



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 3.0 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 / 3409-0022A ^(b)	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
	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)
- ^(b) : Exclusive cables should be used.
(RJ-45 Cable, 4008-0077A, 2 M, RJ-45(M) – RJ-45(M), Housing: Aluminum)
- ^(*) : 1) Shielding effectiveness is measured when each I/O interface panel, which is shown above, is mounted.
2) Above data was measured by Tescom, The Shielding Effectiveness might be different based on the measuring method and condition.
3) This data has been measured under the condition that the cables are not connected to each filters.
When the cables are connected it can affect the shielding performance.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT PRIOR NOTIC

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