

Shielded Tent

The TBST-120/60/60/2 is a shielded tent, designed to suppress interference from ambient noise during EMC pre-compliance measurements. With a size of 120 cm x 60 cm x 60 cm, it can accommodate any Tekbox pre-compliance test equipment such as LISNs or TEM-cells. The shielded tent is composed of two layers of conductive fabrics. It is supported by rigid aluminium profiles. The filter panel at the side provides a 240V/10A AC filter, two 240V/10A DC filter and four coaxial feed through adapters with screw caps. The access opening is sealed with conductive Velcro tape.



Picture 1: shielded tent with closed opening



Picture 2: shielded tent with access opening

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Picture 3: side view with filter panel

1 Specification

Outer dimensions:	120 cm x 60 cm x 60 cm
Opening dimensions:	85 cm x 35 cm
Frame:	20 mm x 20mm extruded aluminium profiles
Shielding:	2 layers of conductive fabrics
Seal:	conductive Velcro tape
Suspension:	Velcro stripes
Filter panel:	1 x 240V/10A AC filter; IEC socket 2 x 240V/10A DC filter; cables with female Banana couplers 3 x N- female feed through connector with screw caps 1 x BNC-female feed through connector
Attenuation:	>58 dB in the range DC to 1.5 GHz
Weight:	10.8 kg

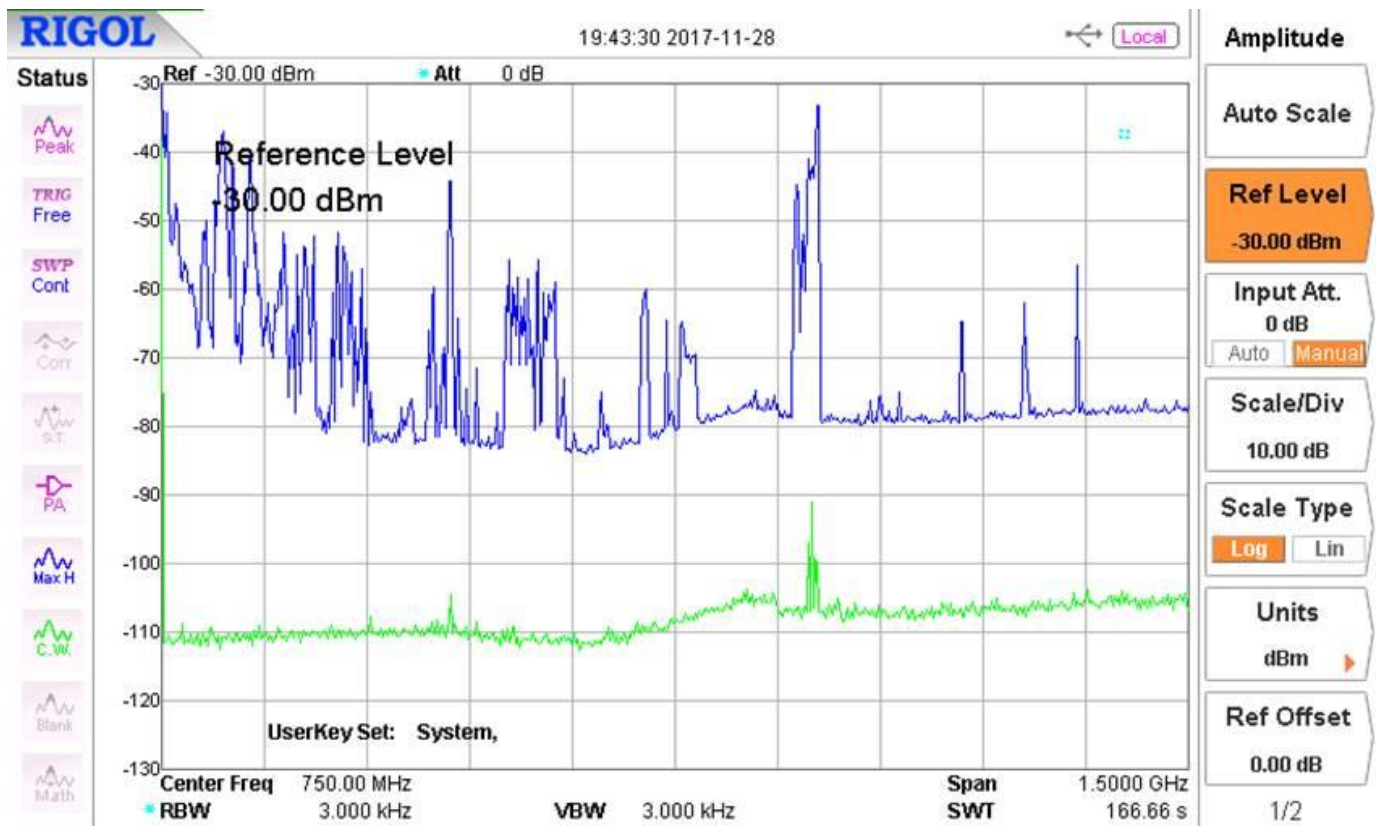
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2 Sample Plots

2.1 Example: Whip antenna

The ambient noise spectrum plot below was taken with a whip antenna outside of the shielded tent (blue graph) and inside of the shielded tent (green graph). The green graph was taken with lower resolution bandwidth in order to reduce the base noise level of the spectrum analyzer.

The spectrum plot clearly shows the attenuation of the shielded tent.



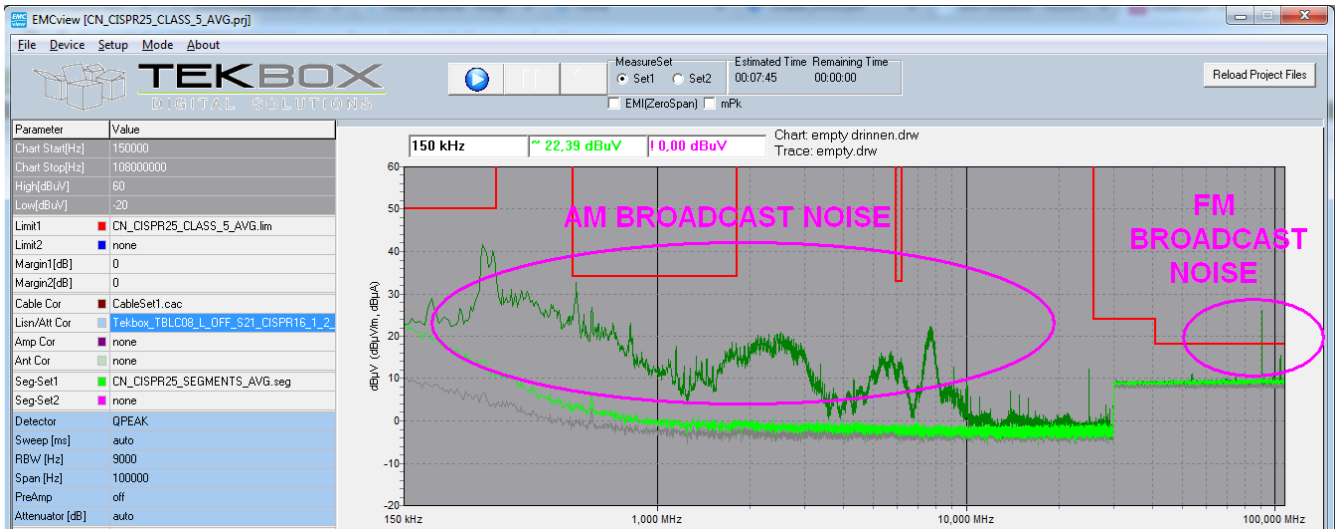
Picture 4: ambient noise outside (blue) and inside the tent (green)

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2.2 Example: Conducted noise measurement

The dark green graph below shows the measured spectrum of a non-powered DUT in a CISPR 25 conducted noise measurement setup. The DUT connects to the TBOH01 5µH LISN with a very short supply cable (10cm). The cable between LISN and DUT and the DUT PCB itself already pick up significant ambient noise from AM and FM broadcast stations.

The light green line shows the results of the same arrangement, with the DUT and LISN placed inside the shielded tent.



Picture 5: CISPR 25 conducted noise measurement; DUT not powered

The graphs below show the conducted noise spectrum of the powered DUT. In the unshielded set up, all emissions, except the first harmonic of the DUT and conducted noise between 40MHz and 50MHz, are hidden under the ambient noise level. An accurate measurement would not be possible without a shielded set up.



Picture 6: CISPR 25 conducted noise measurement; DUT powered

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3 Assembly

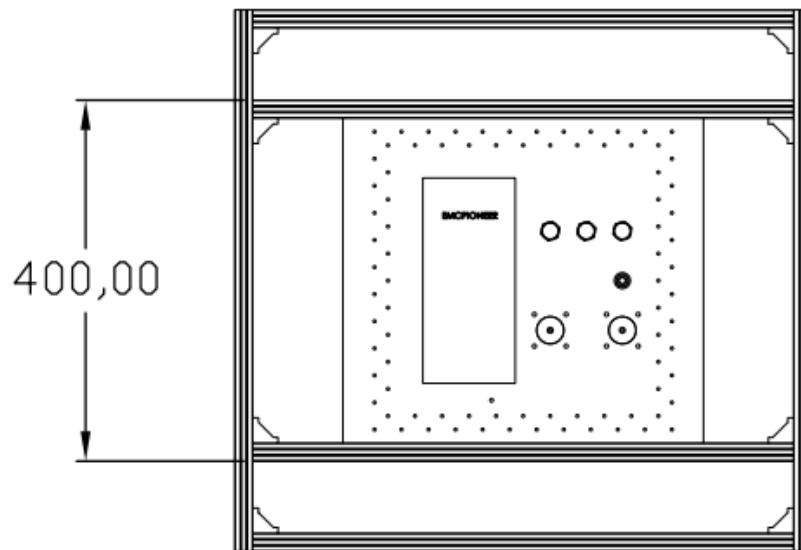
Note that it is not necessary to slide the profile nuts into the profile grooves upfront. The nuts can be positioned and inserted in-line with the grooves. When tightening the nuts, they rotate 90° and lock in a right angle with respect to the direction of the groove.

The frame consists of 10 pieces aluminium profiles with 60 cm length and 4 pieces aluminium profiles with 120cm length.

Note that there are two types of screws. The shorter type is used to attach the filter plate to the frame.

Step 1:

Assemble the left side frame which supports the filter plate first. Attach six pieces 60 cm aluminium profiles to each other according to the picture below.



Picture 7: left side frame

Note that the filter plate is just displayed for reference purpose. The filter plate comes pre-assembled with the tent fabrics and is attached after completion of the frame.

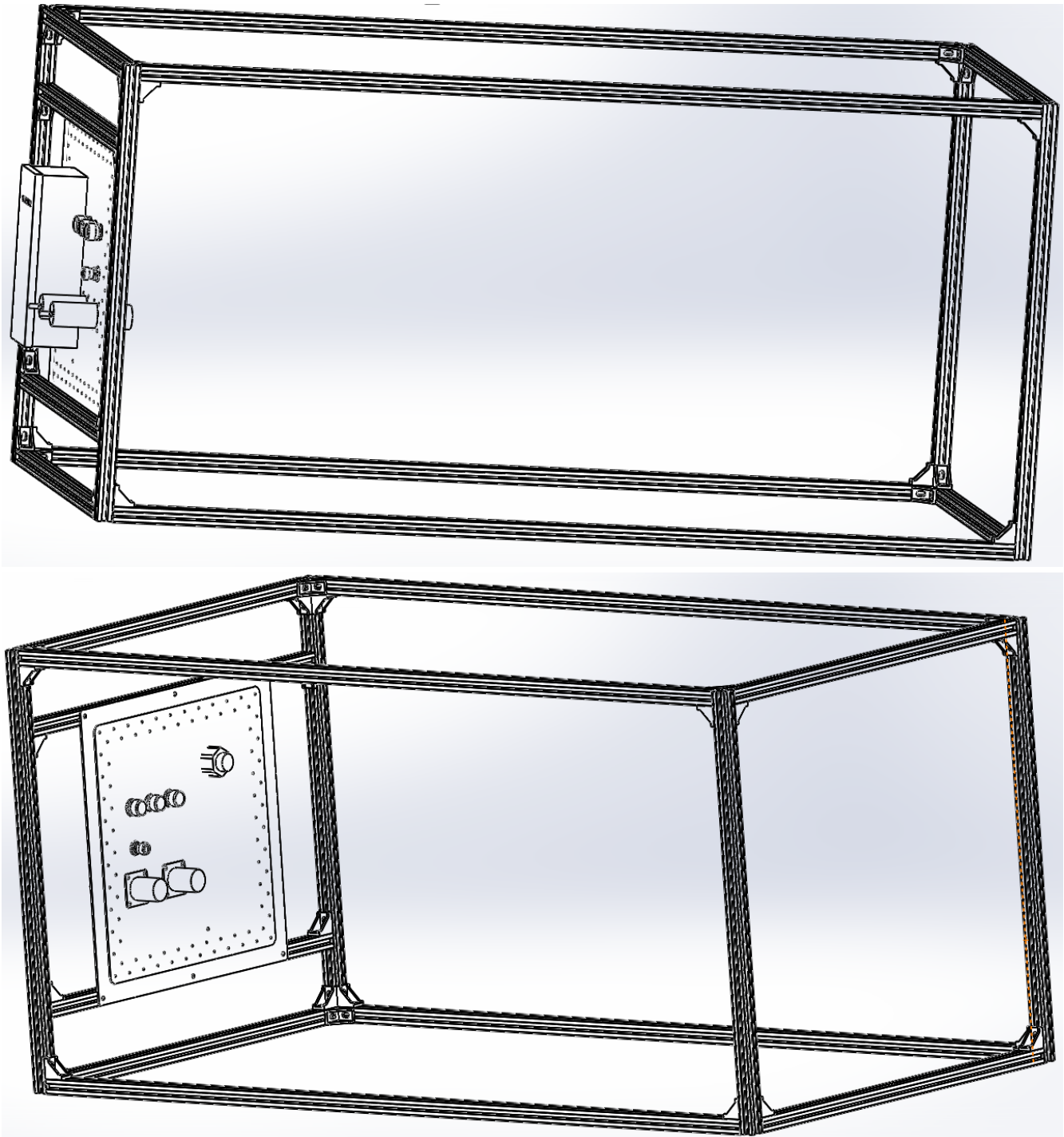
Step 2:

Assemble the right side frame similar as in step 1, using 4 pieces 60 cm aluminium profiles

Step 3:

Complete the frame by connecting the two side frames with 4 pieces 120 cm aluminium profiles.

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Picture 8: completed frame

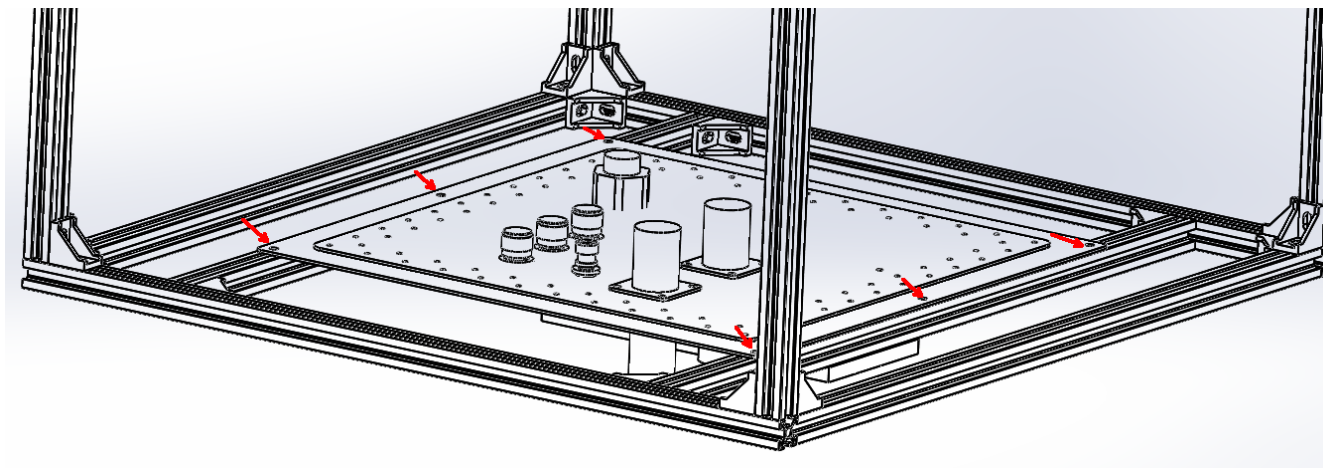
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Step 4:

Unpack the fabrics and remove the outer foam protection of the filter plate.

Place the frame with the left side at the bottom and support the four corners to get clearance for the filters.

Attach the filter plate with six screws to the frame



Step 5:

Unfold the fabrics and fasten it to the frame with the attached Velcro strips.

4 Ordering Information

Part Number	Description
TBST-120/60/60/2	Shielded tent 120 cm x 60 cm x 60 cm