

Nord Cryo Inc.

Manual

BoBoX1

BreakOutBoX with filters

NORD CRYO INC.

BoBoX1



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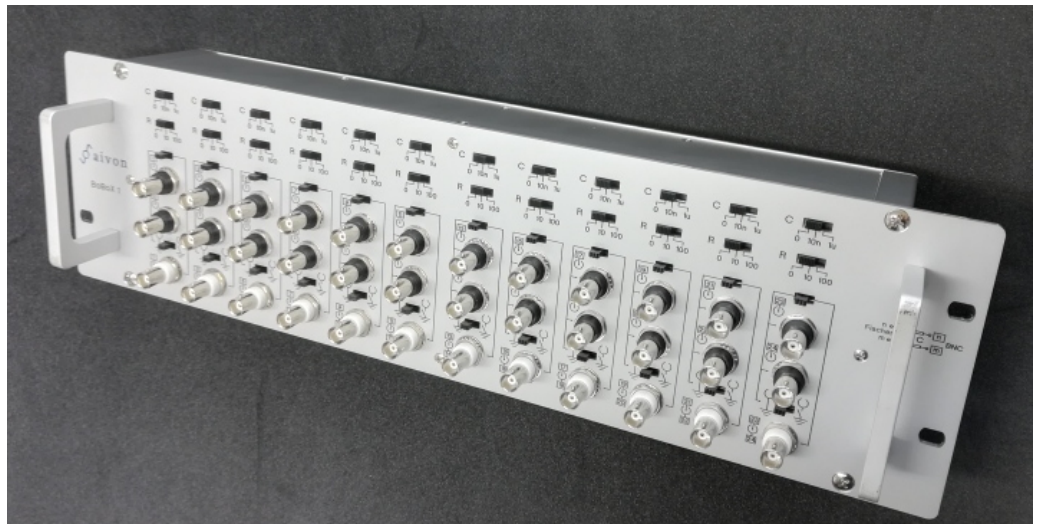
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BoBoX1

BreakOutBoX with filtering

A ivon BoBox1 is a versatile breakout box for separating and filtering signals from a multipin Fischer connector to BNC connectors. Capacitance and resistance values of the integrated RC-filters can be selected from the front panel by using sliding switches.

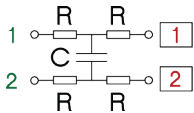


Main features

- User selectable BNC input. Either:
 - Signal pair (e.g. 1-2, 3-4, ...) in inner conductors of two BNC connectors
 - Signal pair in inner conductor and shield of a single BNC connector.
- Selectable RC-filter with values
 - **R**: 0, 10 Ω , 100 Ω or user-defined
 - **C**: 0, 10nF, 1 μ F or user-defined
- User selectable ground connection from shields of the two BNC connectors to the enclosure ground.
- Output connector Fischer DG 105 A093 or a custom one.
- 19" rack mountable, height 3U (width 483 mm, height 132.5 mm).

Note: this is a low-frequency RC-filtering unit. User should filter out higher frequencies for example with ferrite beads in the output cable if low noise operation is required.

Basic operation



BoBox includes filtering for 12 pairs of signals. Every filter block is a RC filter as illustrated on the left. All four resistors have same values.

Detailed operation

If Fig. 1 is illustrated the front panel of the BoBoX1 and a schematic and markings of a single pair of channels.

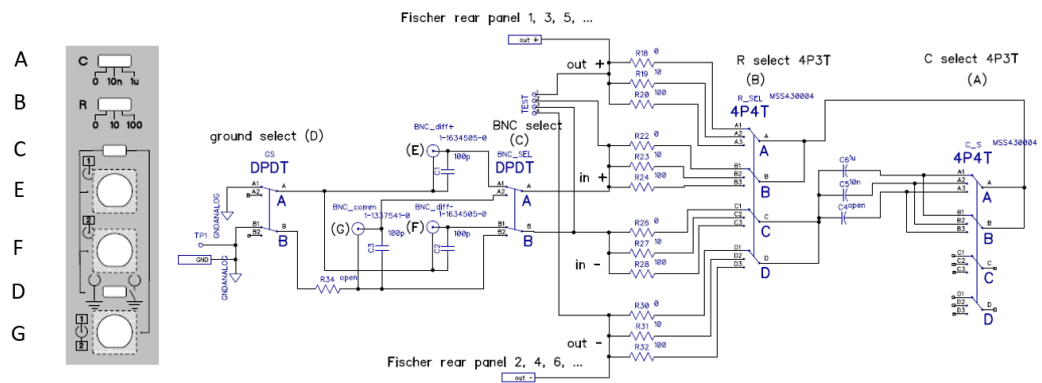


Figure 1: Detailed operation.

It is to be noted that:

- User selects either BNC connectors E+F or G depending on the BNC select switch C.
- Connection to the enclosure ground is selected with ground select switch D when BNC connectors E+F are selected.
- When BNC connector G is selected the outer conductor of G can be grounded using switch D if resistor R34 is equipped with shorting zero-ohm resistor (default = short 0 Ohm).
- Capacitance is selected with switch A.
- A single resistance value is selected for four resistors with resistor selection switch B.

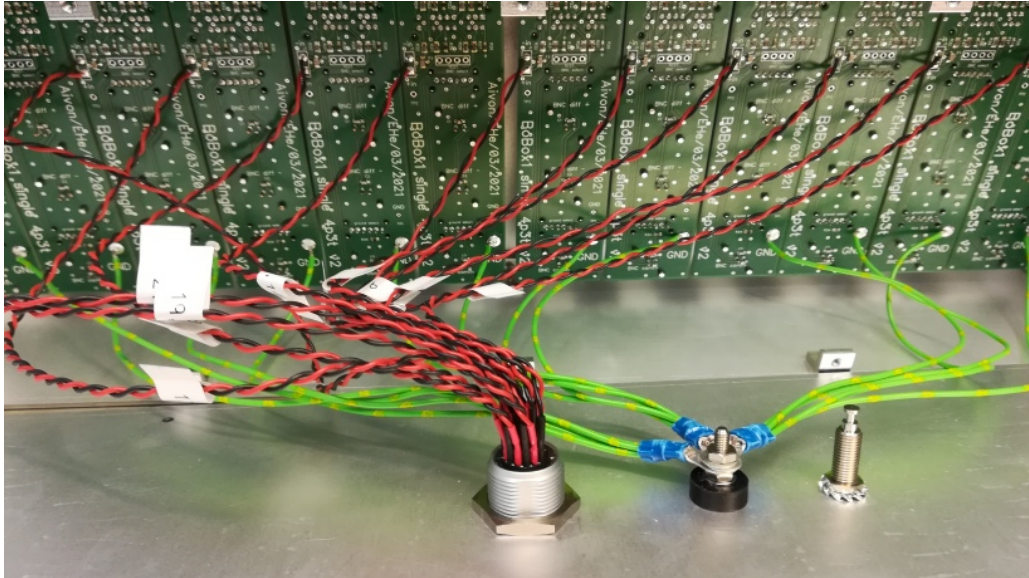
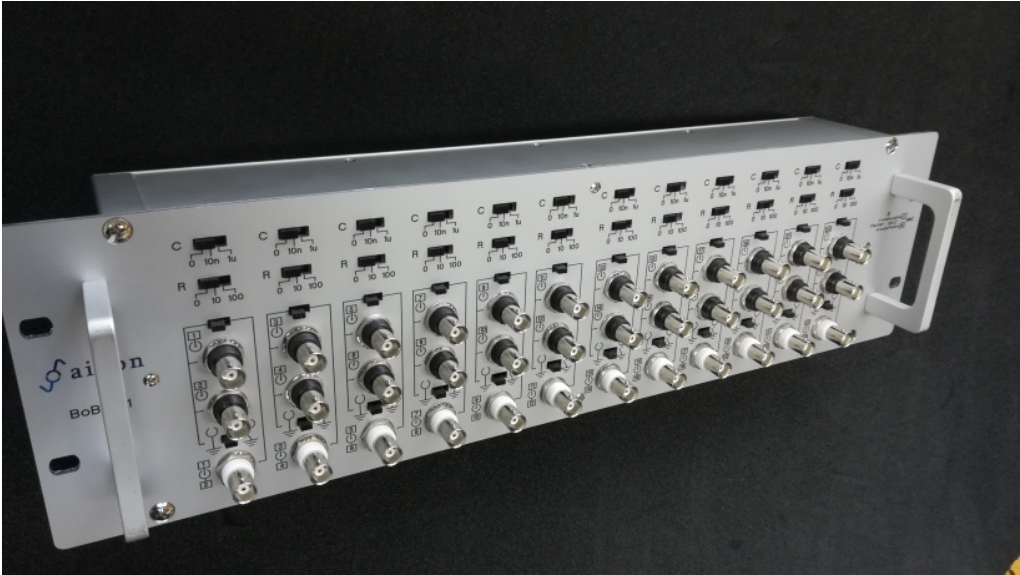


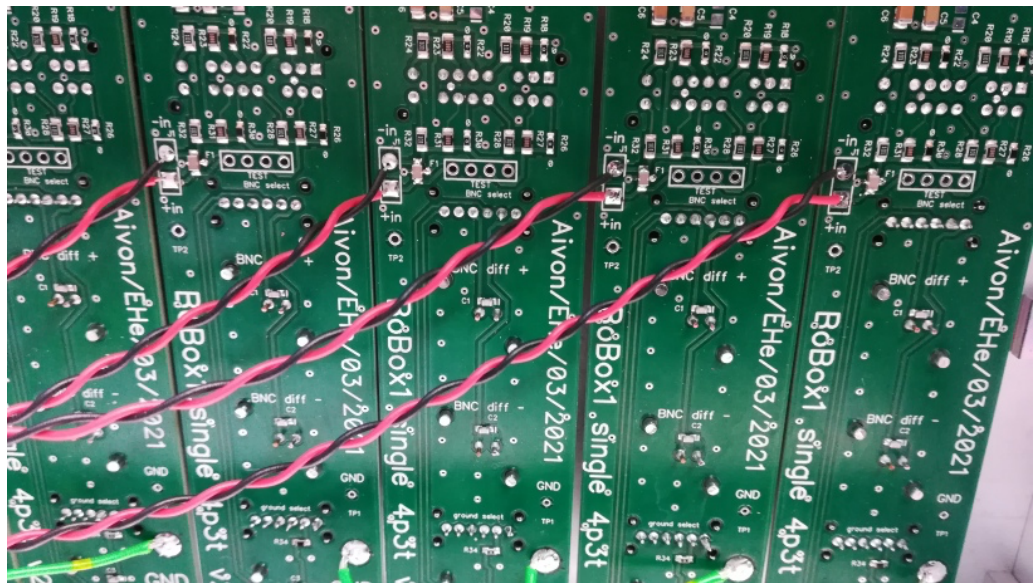
Output connection

In Fig. 2 is illustrated back panel of the BoBoX. There are engravings to mark pin numbering and a Fischer DG 105 A093 connector for signals out. Printed circuit board ground where the filtering is referenced has its own 4mm banana connector. Enclosure (chassis) ground is separated.



Figure 2: Back panel.





Problems in operation

Problem	Solution
No signal through the box	Check that correct BNC connector(s) is selected.
Resistor or capacitor values need to be changed	Open the enclosure rear panel and locate the components to be replaced. Ask Nord Cryo for assistance.

Specifications

Absolute maximum ratings

Voltage	± 100 V (unless R or C ratings are limiting)
Leakage current at 10 Vdc input	Max 500 pA

Connectors

Input	BNC
Output	Fischer DG 105 A093 or custom

Enclosure

Material	Anodized (backside chromated) aluminum.
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Physical dimensions

Enclosure dimensions (Width x height x length)	483 mm x 132.5 mm x 130 mm
Weight	2.0 kg

Document revision history

Date	Version	Description	Author
11.4.2021	0.1	Initial draft	JSP
7.8.2021	1.0	New voltage rating and leakage current spec	JSP
17.10.2021	1.0b	Typos corrected and text added	JSP
6.7.2026	1.0c	Logo + company update	HM