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User Manual

RT - IB 100V Impedance Box

1. Wiring

Connect the RT-IB 100V impedance box to the other components of the test setup as shown in *Figure1*.

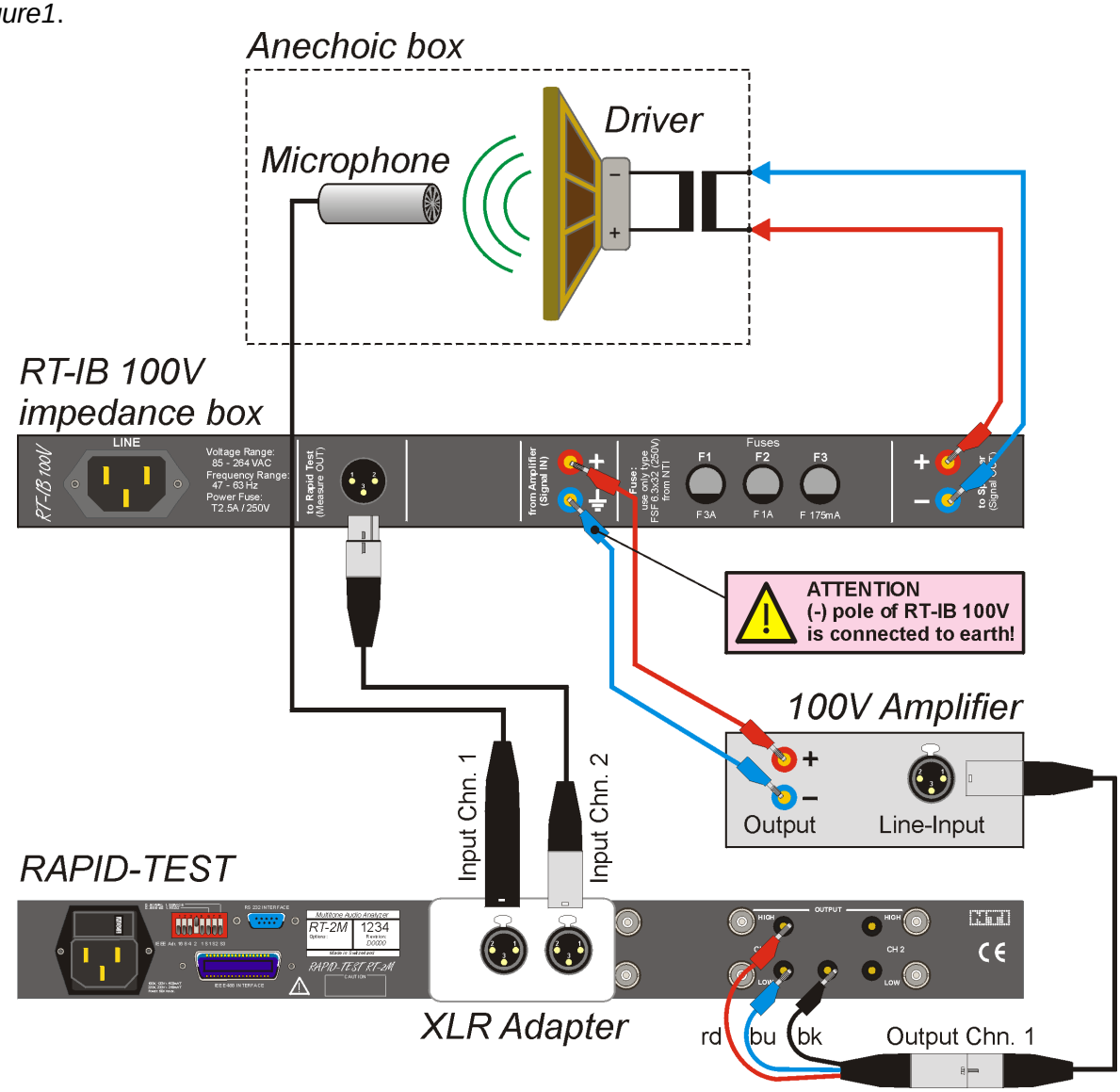

Figure 1 Test Setup

NOTE ***Only use original fuses supplied by NTI.***
Never touch any input or output connectors.
Observe the maximum current ratings of the different connector types and shunt resistors (refer to next page).

2. Shunt Resistor Selection

Determine the appropriate shunt resistor for the speaker to be tested according to one of the procedures described below.

A) Voltage & power across the speaker are known

1. On the graph of *Figure 2a*, look for the line that represents the voltage U_L across the speaker.
2. Follow this line to the point where it intersects the power across the speaker (vertical Y-axis); if this point is located in the yellow section, swap to *Figure 2b*.
3. Look for the shunt-resistor section, in which this point is located (blue = 1 Ohm, green = 20 Ohm, red = 400 Ohm).
4. Adjust the shunt resistor switch on the RT-IB 100V front panel accordingly.

B) Impedance of the speaker is known

1. Look for the impedance value of your speaker on the horizontal X-axis.
2. Adjust the shunt resistor switch on the RT-IB 100V front panel according to the shunt-resistor section, which is located right above the speaker impedance value.

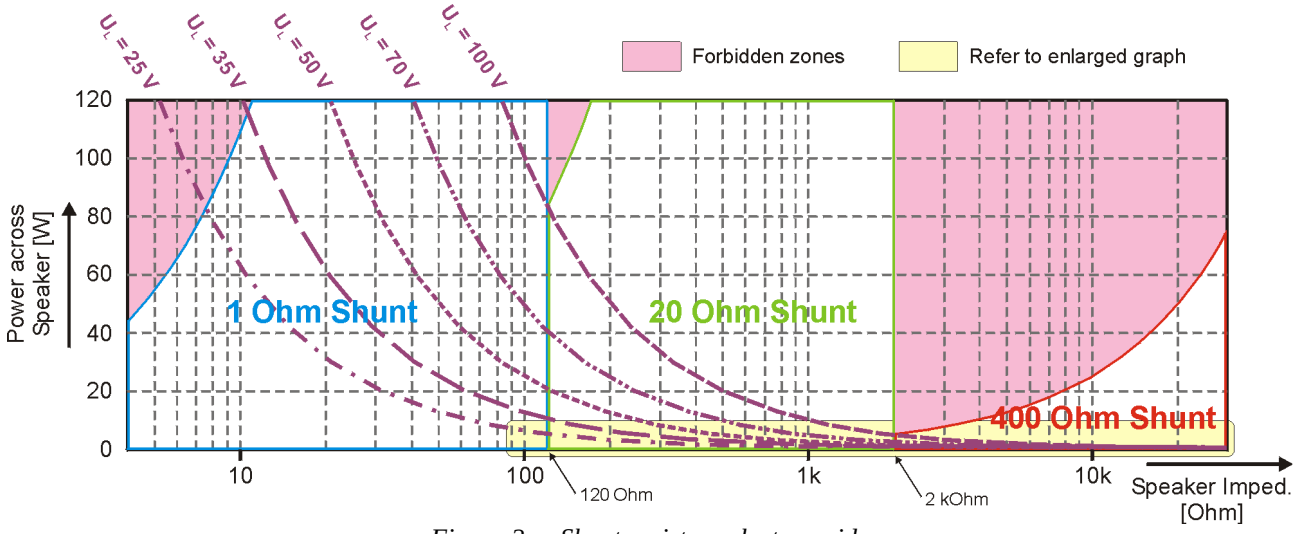

Figure 2a Shunt resistor selector guide

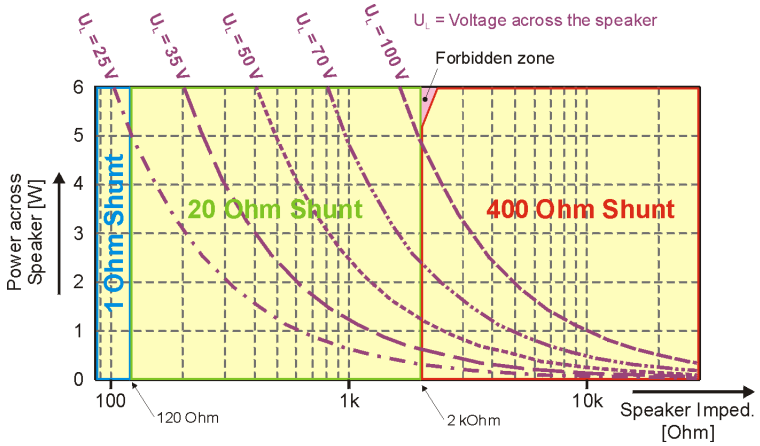

Figure 2b Shunt resistor selector guide (excerpt)

Example

Given:	100 V speaker with 4 W power consumption
Goal:	Determine the appropriate shunt resistor of RT-IB 100V
Solution:	Look for the point in *Figure 2b*, where the curve labeled "U_L = 100 V" intersects the horizontal 4 W line
	⇒ 400 Ohm shunt required.

3. RT-Speaker Adjustments

NTI recommends to operate the RT-2M and RT-IB 100V system under RT-Speaker, whereby the following versions must be installed:

- RT-2M firmware V6.13 or higher
- RT-Speaker software V2.50 or higher.

In this case, execute the following adjustments under RT-Speaker:

- Voltage divider ratio = 1:4.93 (Configure RT-Speaker → Accessories)
- Impedance box shunt resistor = 1, 20 or 400 Ohm (Edit project → Test composition).

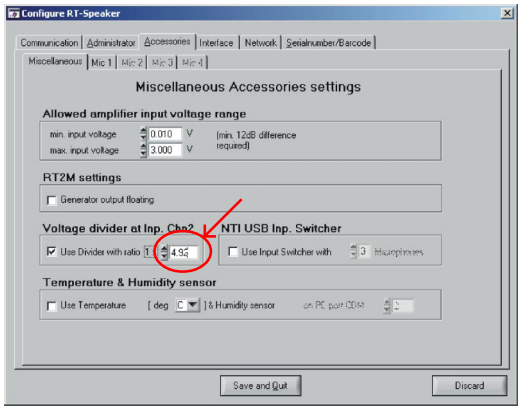

Figure 3a Voltage divider ratio adjustment

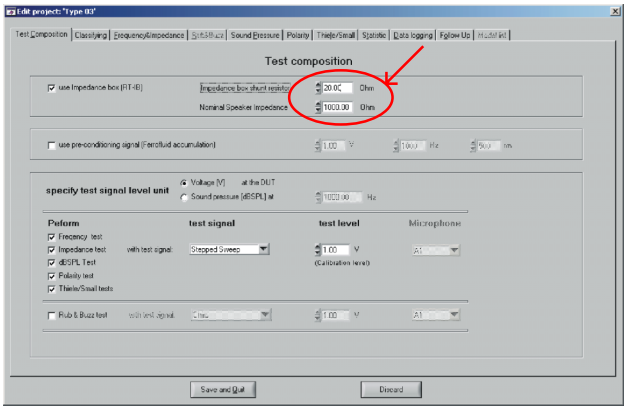

Figure 3b Shunt resistor vlaue adjustment

NOTE ***All shunt resistors within RT-IB 100V are protected with an active circuit against overloading. If an excessive or longer overload occurs, the corresponding fuse will be blown.***
Therefore, take special care to select the appropriate shunt resistor for your setup prior to any measurement.

4. Schematic Diagram

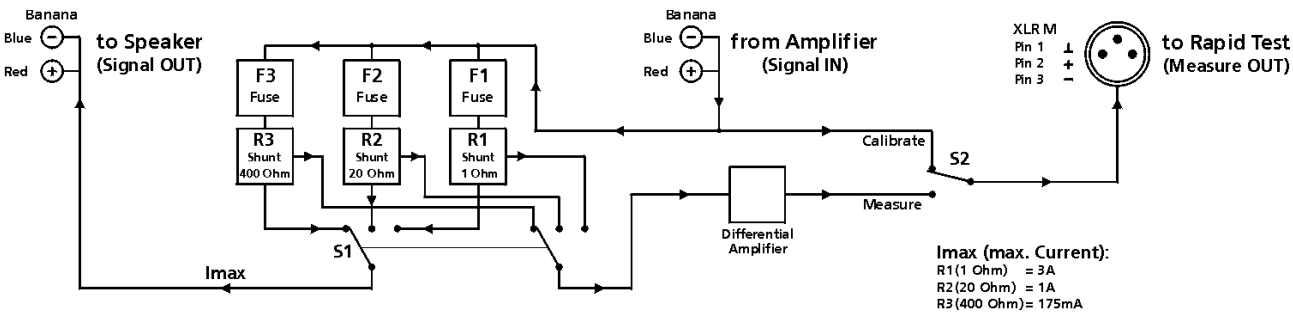

Figure 4 Schematic diagram of RT-IB 100V

5. Front & Rear Panel

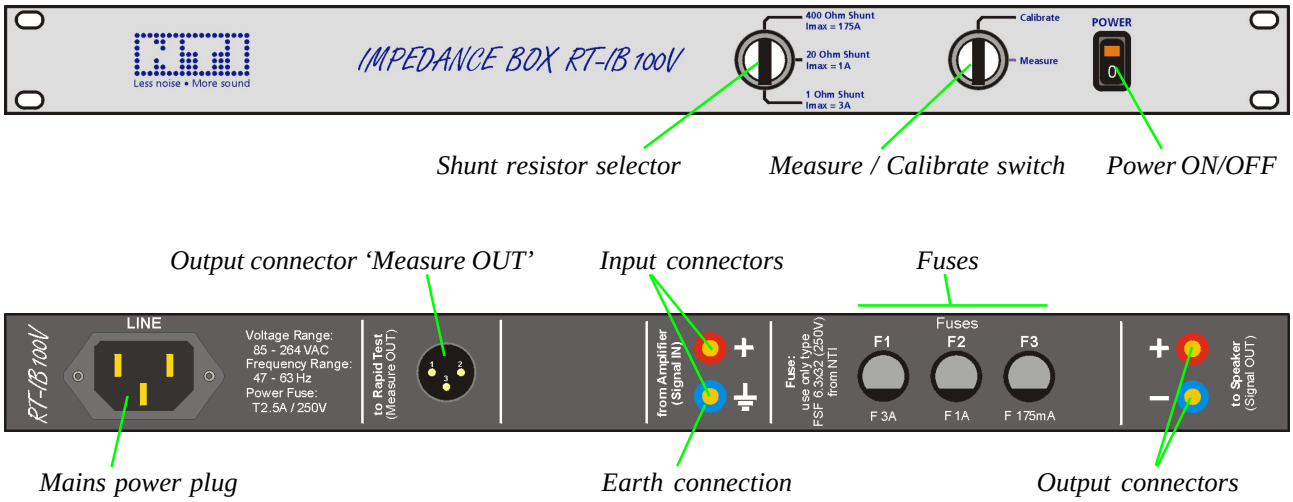

Figure 5 Front & Rearpanel of RT-IB 100V

6. Technical Specifications

Load imped.	4 Ohm .. 30 kOhm
Voltage ratio	1:4.92
Shunt resistors	1, 20, 400 Ohm
Shunt accuracy	±0.1 %
Worst case impedance measurement tolerance	±5 % @ f = 100 Hz .. 10 kHz ±10 % @ f = 20 Hz .. 20 kHz

Fuses	special F3A, F1A, F175mA (available from NTI)
Temp. range	5° - 45°C (40 – 110 F), R.H. < 90 % non condensing
Size	19“ rack, 1 rack unit high 483 x 183 x 43 mm (LxWxH)
Weight	1.7 kg / 3.8 lbs

7. Contact Details

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