

DC-Line Attenuator

1 General

The DC-Line attenuator is used for testing battery power line communication performance. The attenuator attenuates the modulated signal over the battery power lines (DC-Lines) without attenuating the DC voltage.

The attenuator has two BNC connectors to output the AC signals in both sides of the attenuator.



Figure 1 - The DC-Line Attenuator

2 Principles of operation

The DC-Line attenuator attenuates the AC component of the modulated signal on the DC, while, letting the DC component unaffected. This principle of the DC-Line attenuator is presented on figure 2. The user can select any attenuation level between 0 to 61 dB using the switches (20, 20, 10, 5, 3, 2, 1 dB).

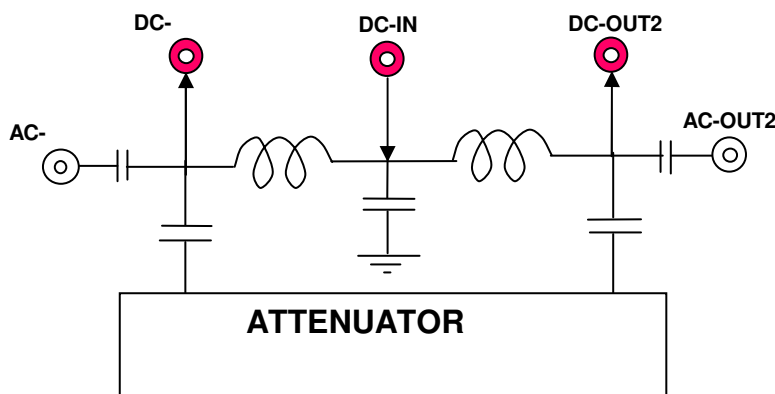


Figure 2 - Block diagram Schematics of the DC-Line Attenuator

3 Operation

Set the external power supply voltage to the specified voltage of the devices under test. Connect the DC power supply to DC-IN connector. Connect the devices under test to DC-OUT1 and DC-OUT2. The modulated AC signal over the power line from Device 1 to Device 2 and vice versa will be attenuated according to the attenuator setting.

Figure 3 presents a typical application of communication between a reference DC-LIN message generator and a DC-LIN evaluation board. By changing the attenuation values, the communication performance can be measured.

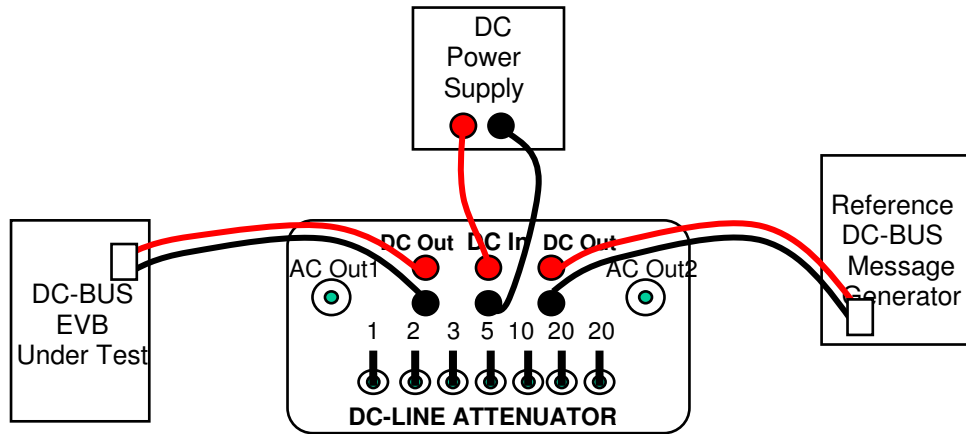


Figure 3 - Typical PLC measurement setup

4 Specifications

Attenuation:	0-61	dB
Max Operating voltage:	40	Volt
Max Operating current:	1	Amp
Frequency range:	1.5 - 15	MHz