

# DC-Powerline Attenuator

## 1 General

The DC-Powerline attenuator is used for testing power line communication performance in a lab environment. The attenuator attenuates the modulated transmit signal over the DC power lines without attenuating the DC voltage.

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



Figure 1 - The DC-Line Attenuator

## 2 Principles of operation

The DC-Powerline attenuator attenuates the AC component of the modulated signal on the DC, while, letting the DC component unaffected. This principle of the DC-Powerline attenuator is presented on Figure 2. The user can select any attenuation level between 0 to 71 dB using the switches (30, 20, 10, 5, 3, 2, 1 dB).

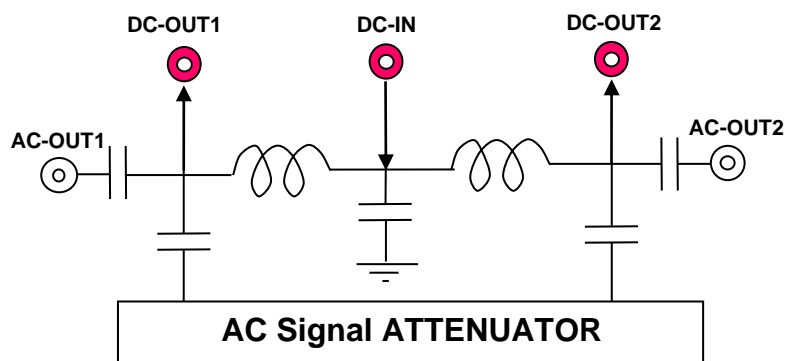


Figure 2- Block diagram Schematics of the DC-Powerline Attenuator

### 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 transmitted modulated AC signal over the power line from Device 1 to Device 2 and vice versa will be attenuated according to the attenuator switches settings. AC-OUT1 and AC-OUT2 allows quick connection for probing and noise injection onto the powerline channel.

Figure 3 presents a typical PLC test environment set-up.

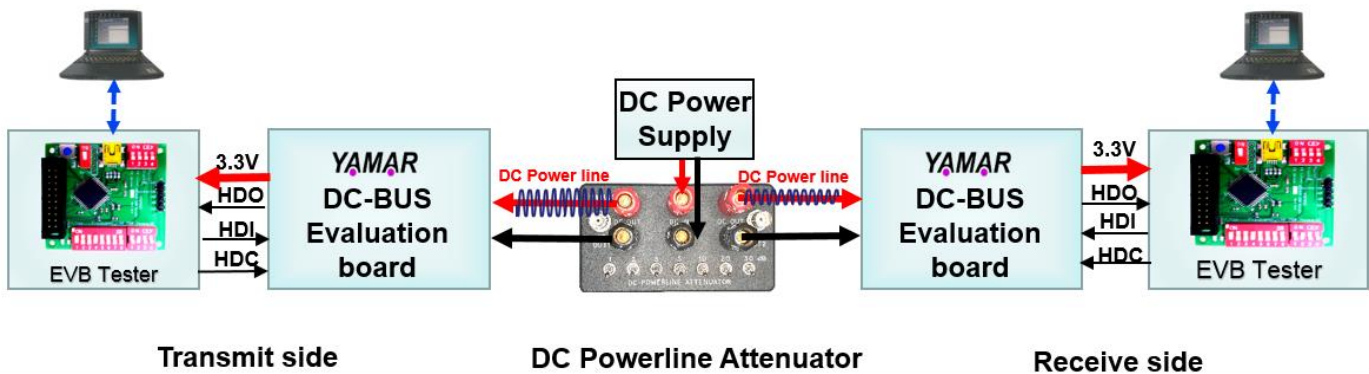


Figure 3 - Typical PLC test environment setup

### 4 Specifications

Attenuation:	0-71	dB
Max Operating voltage:	40	Volt
Max Operating current:	1	Amp
Frequency range:	1.5 - 15	MHz