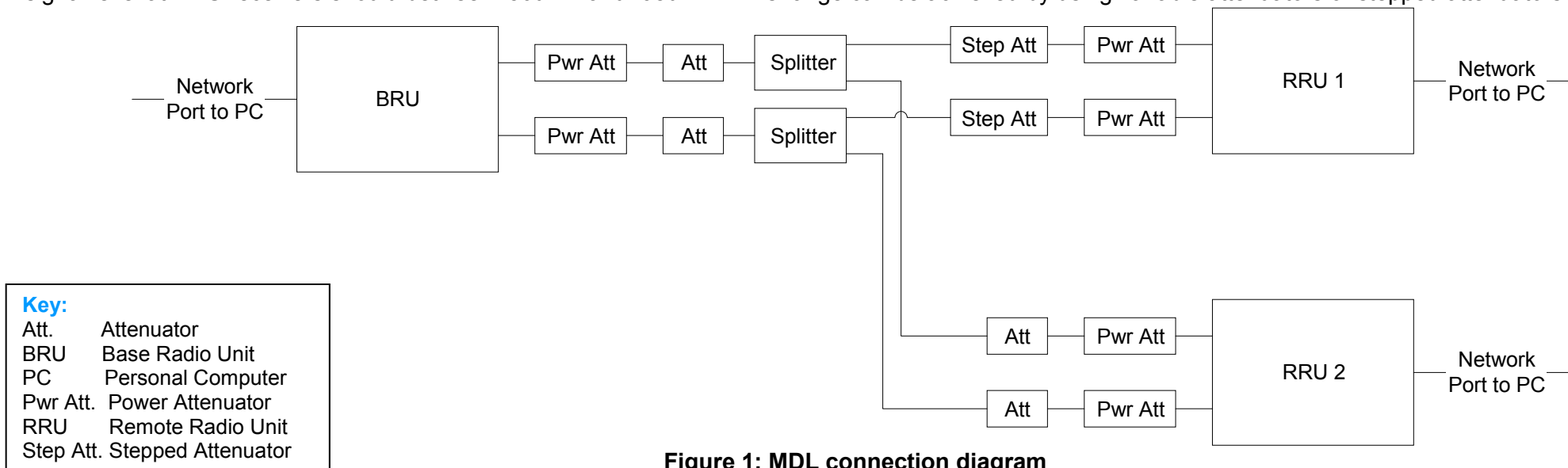


## MiMOMax Multipoint Digital Link (MDL) Wired-Test Setup

The following diagram shows the wired test setup of an MDL (Multi-Point Digital Link) for testing purposes. The setup consists of one Base Radio Unit (BRU) and two Remote Radio Units (RRUs). As the radios are MiMO (Multi-Input, Multi-Output) each radio has two antenna ports that need to be connected through to the other radios. Usually these ports would be connected to the Vertical and Horizontal feeds of the MiMO antennas. For these tests, the radios are all set to transmit at an average of +30dBm. 30dB power attenuators (at least 20W) are connected directly to the radios to reduce the transmitted power in all cases to 0dBm. This allows for lower power and less expensive attenuators, variable attenuators and splitters to be used between the power attenuators. The range of signal level at RRU receivers should be between -50dBm and -95dBm. This range can be achieved by using variable attenuators or stepped attenuators.



**Figure 1: MDL connection diagram**

IP tests can be performed with the use of PCs connected to each of the radios.

The following items are used by MiMOMax, but any manufacturer meeting the specifications outlined above would be suitable:

- Power Attenuators (Aeroflex/Weinschel) 30dB power attenuators, Model 24-30-34
- Mini Circuits splitters: ZX10-2-12
- Mini Circuits attenuators: e.g. VAT-10+ (10 dB version).
- Mini Circuits variable attenuators