BRX-VDSL2-2
2-pair Sealed Enclosure
Quick Start Guide

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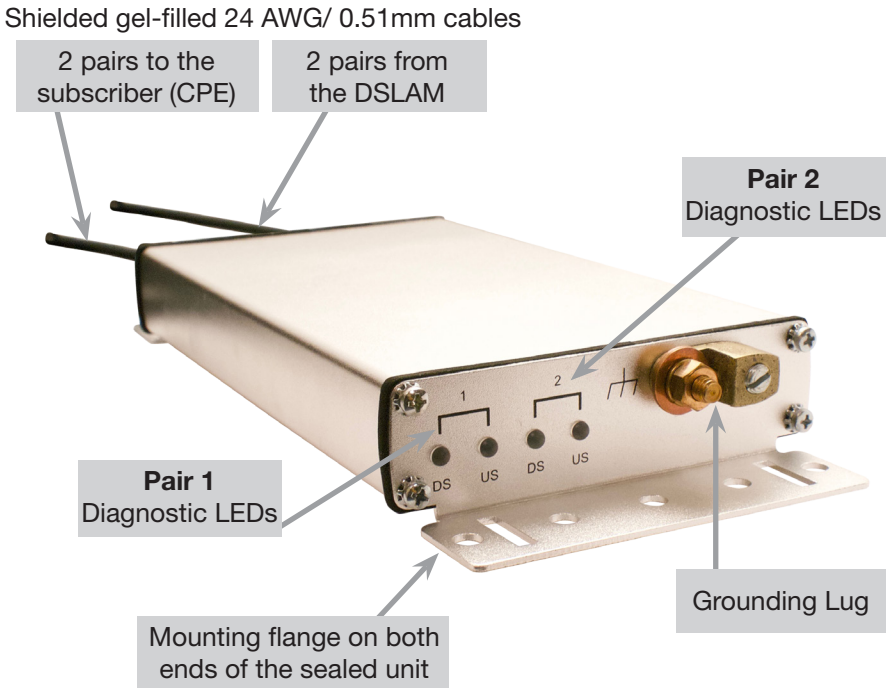

CPE Line 1 Blue / White
CPE Line 2 Orange / White
DSLAM Line 1 Blue / White
DSLAM Line 2 Orange / White
Note: All other pairs are not used

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Connecting the BRX-VDSL2-2

Step 1: Select the location where the BRX-VDSL2-2 will be inserted as close as possible to the midpoint of the loop.

Step 2: Connect the grounding lug of the unit to a proper ground (usually available near a splice point).

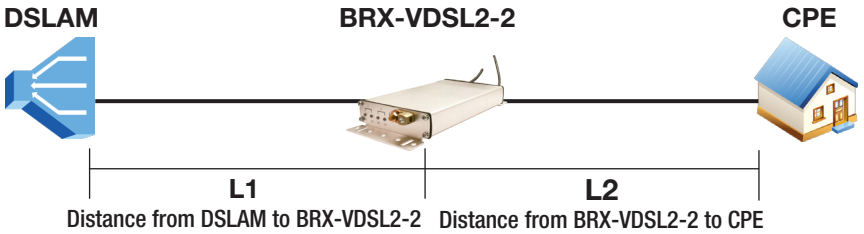
Step 3: Connect one of the DSLAM pairs to a pair coming from the DSLAM. The corresponding DS LED on the faceplate will turn GREEN to confirm presence of -48Vdc sealing current and proper operation of BRX-VDSL2-2 unit.

NOTES: - The US LED currently not used.
- If operating on a dry pair, you should use a BRX Power Injector.

Step 4: Connect the corresponding CPE pair to the pair going to the subscriber home. Be sure to match the pair color used for the connection to the DSLAM.

IMPORTANT: Make sure to match DSLAM pair# to CPE pair#. After step 4, the DSLAM and the CPE will re-train the circuit and bring up the VDSL2 link with the higher bandwidth. The performance may be limited (or capped) by a setting in the DSLAM and/or BRAS configuration. During this process, the optimum amplification gain is automatically determined.

Summary Diagram of Typical Installation



IMPORTANT NOTE: The BRX-VDSL2 unit is powered from the Sealing Current found on a standard POTS pair. Each pair of the BRX-VDSL2-2 is powered independently with each pair requiring the presence of the -48Vdc sealing current for proper operation. The BRX-VDSL2-2 will not operate on a dry pair (line with no -48Vdc sealing current). You can use the Positron BRX Power Injector to provide the -48Vdc sealing current when operating on dry pairs.

The **BRX Cloud Calculator** can help determine the optimal installation location for each specific loop. To access the BRX Cloud Calculator, sign up on the Positron Access Portal at **www.positronaccess.com/Portal.php**. You will get a username and password to access the Portal.

Placement Guidelines for BRX-VDSL2 Devices

The BRX-VDSL2 amplifies VDSL2 loops and supports profiles 17a, 8a, 8b and 8d. It is designed to deliver solid amplification of the loops as long as the BRX-VDSL2 device is installed within 45% to 60% of the total loop distance. It is recommended to install the BRX-VDSL2 unit at an existing splice point that is within the recommended placement range. When multiple splice points exist within that range, you should select the one that is most convenient.

The BRX-VDSL2 installation should follow these simple rules:

1. **L1 - Minimum Loop Length from DSLAM to BRX-VDSL2** should be no less than 2000 feet (0.6 km) for 24 AWG (0.5 mm) gauge or 1600 feet (0.5km) for 26 AWG (0.4 mm) gauge.
2. **L2 - Minimum Loop Length from CPE to BRX-VDSL2** should be no less than 650 feet (200m) for 24 AWG (0.5mm) gauge or 500 feet (150m) for 26 AWG (0.4 mm) gauge.

For a **25 / 3 Mbps service**, the recommended range is as follows (single pair):

- **Maximum total loop length**: 6250 feet (1.9 km) for 24 AWG (0.5mm) gauge or 5000 feet (1.5 km) for 26 WG (0.4 mm) gauge.
- **Recommended placement range**: 3000 to 3600 feet (0.9 to 1.1 km) of 24 AWG (0.5mm) gauge or 2400 to 2900 feet (0.7 to 0.9 km) of 26 AWG (0.4 mm) gauge.

For a **10 / 1 Mbps service in VDSL2 mode (useful when you want to limit the use of ADSL2+ loops inside a binder mostly used for VDSL2 loops)**, the recommended range is as follows (single pair):

- **Maximum total loop length**: 10000 feet (3 km) for 24 AWG (0.5mm) gauge or 8000 feet (2.4 km) for 26 WG (0.4 mm) gauge.
- **Recommended placement range**: 4500 to 5500 feet (1.4 to 1.7 km) of 24 AWG (0.5mm) gauge or 3600 to 4400 feet (1.1 to 1.3 km) of 26 AWG (0.4 mm) gauge.

Recommended DSLAM Settings

In order to fully benefit from the amplified VDSL2 signal, there are a few DSLAM settings to be set as per the following recommendation:

Parameter	Downstream	Upstream
Maximum Bitrate	100 Mbps	50 Mbps
Maximum Delay	8 msec	8 msec
Path Latency	Interleaved	
Impulse Noise Protection (INP)	2	1
Target SNR Margin	8.0 dB	8.0 dB

You should also make sure that the DSLAM and/or the BRAS settings are not set at a lower level than the target service offered to the subscriber for this loop.

NOTE: You should always follow your corporate guidelines for the DSLAM settings if they differ from the Positron recommendation. If in doubt, you should check with the Engineering or Operation team.

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