

**Z-Band RF Video Distribution System..... It's all about controlling the Signal Levels.**

Z-Band provides our customers with **High Quality** Video to every TV in a Building or a Campus environment. We do this by employing **Automatic Gain Technology** in a Fiber and/or coax Backbone plus the **Category Cable Horizontal** segments of the Building/s.

Everything starts with the **Proper Signal Levels from the Video Source/s**. The required input levels to the CATV port of the GigaBUD, or the Z-Band Light Fiber Transmitter are:

- GigaBUD (Input to the CATV Port)
  - Analog only = 23dBmV Flat (all channels to 23dBmv)
  - Digital only = 20dBmV Flat (all channels to 20dBmv)
  - Digital and Analog combined
    - Digital = 17dBmV Flat (all channels to 20dBmv)
    - Analog = 23dBmV Flat (all channels to 20dBmv)
- Fiber Input to the GigaBUD Fiber Receiver
  - -1 to -4dBm
- Z-Band Light Fiber Transmitter
  - 20dBmV +/- 5dBmV Flat (all channels the same)

If the above Input Levels are set correctly, the Z-Band System will automatically maintain Signal Quality to every TV; plug in the patch cords and you have good pictures. A 240MHz Pilot Tone is sent from the Master GigaBUD to each attached Slave Unit as a reference for the Automatic Gain circuits; based on the loss in the Tone, the Slave units Amplify or Attenuate the Video signal and adjust the Slope to maintain signal integrity in the Backbone.

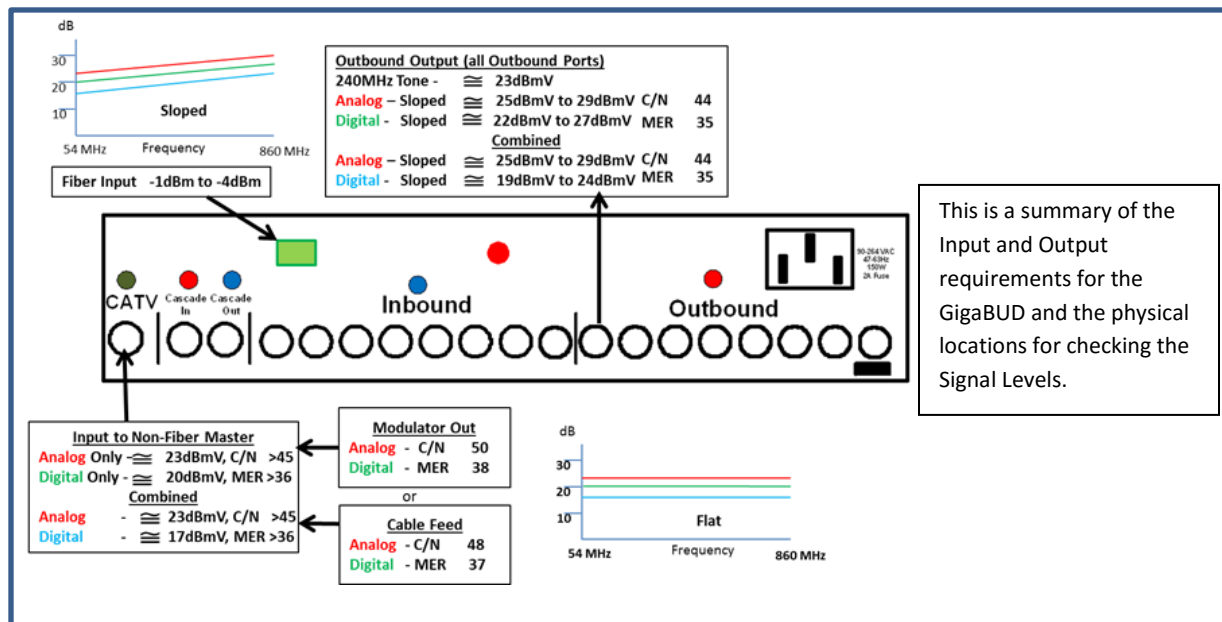


Figure 1

The **Automatic Gain** in the Horizontal operates very similar to the Backbone. However, instead of a Pilot Tone, the 8VDC from the GigaBUD, which remotely powers the GigaBOB, is used as the reference. The Intelligent GigaBOB looks at the loss in the 8V (millivolt drop) and computes the length of the Category Cable. The GigaBOB extrapolates this information against an algorithm that computes the loss of the Video Signal Strength at all frequencies in the Video Spectrum. The GigaBOB then Amplifies or Attenuates the signal and adjusts the Slope, as required, to provide the proper Signal Levels to each TV.

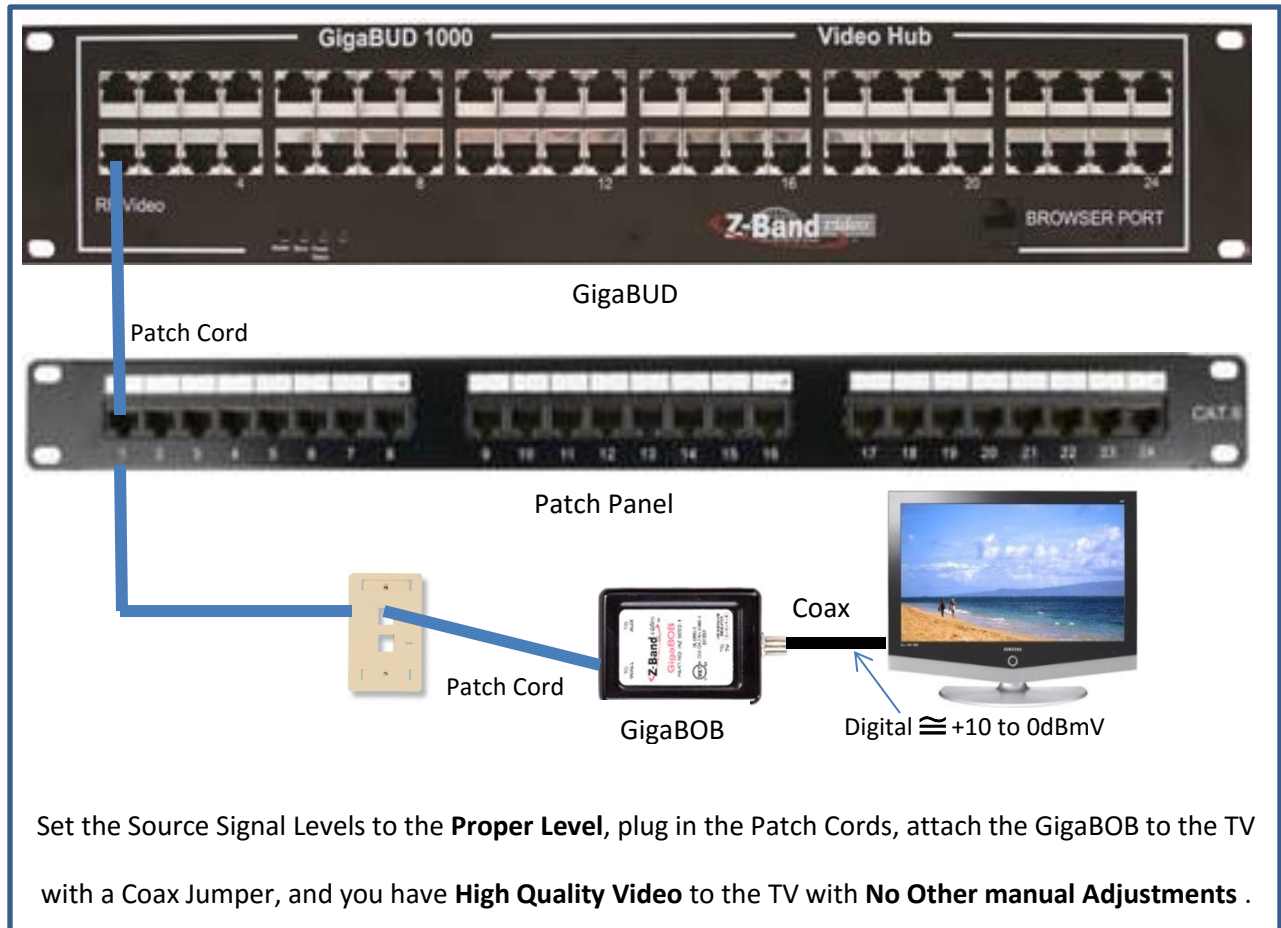


Figure 2