ADSL Receiver Modelling

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Decoder and Bit Buffer

- Splits the digital input into channels. Reverse it in Receiver end.
- Bandwidth optimization. Choose which of the channels can be used from the available ones based on SNR.
- Based on maximizing bit rate, minimizing input power level.
- G.Lite – sub channels – 256
Cyclic Prefix (CP)

- Adds padding information during modulation.
- Padding added because of the impulse response of the physical channel.
- Length of impulse response $\leq$ Length of CP ($v$) + 1
- Disadvantage – Reduces efficiency by a factor $N/(N+v)$
- Reduce memory of channel with a finite impulse response filter – TEQ.
- Best throughput for given complexity is got with a combination of CP + equalizer.
- Full equalization to a memoryless channel is very complicated.