

Modem Architecture for Dynamic Modulation with Concatenated Coding and Interleaving

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Purpose:

This document describes a modem architecture that supports dynamic modulation with concatenated Reed-Solomon convolutional coding and interleaving in the downstream link.

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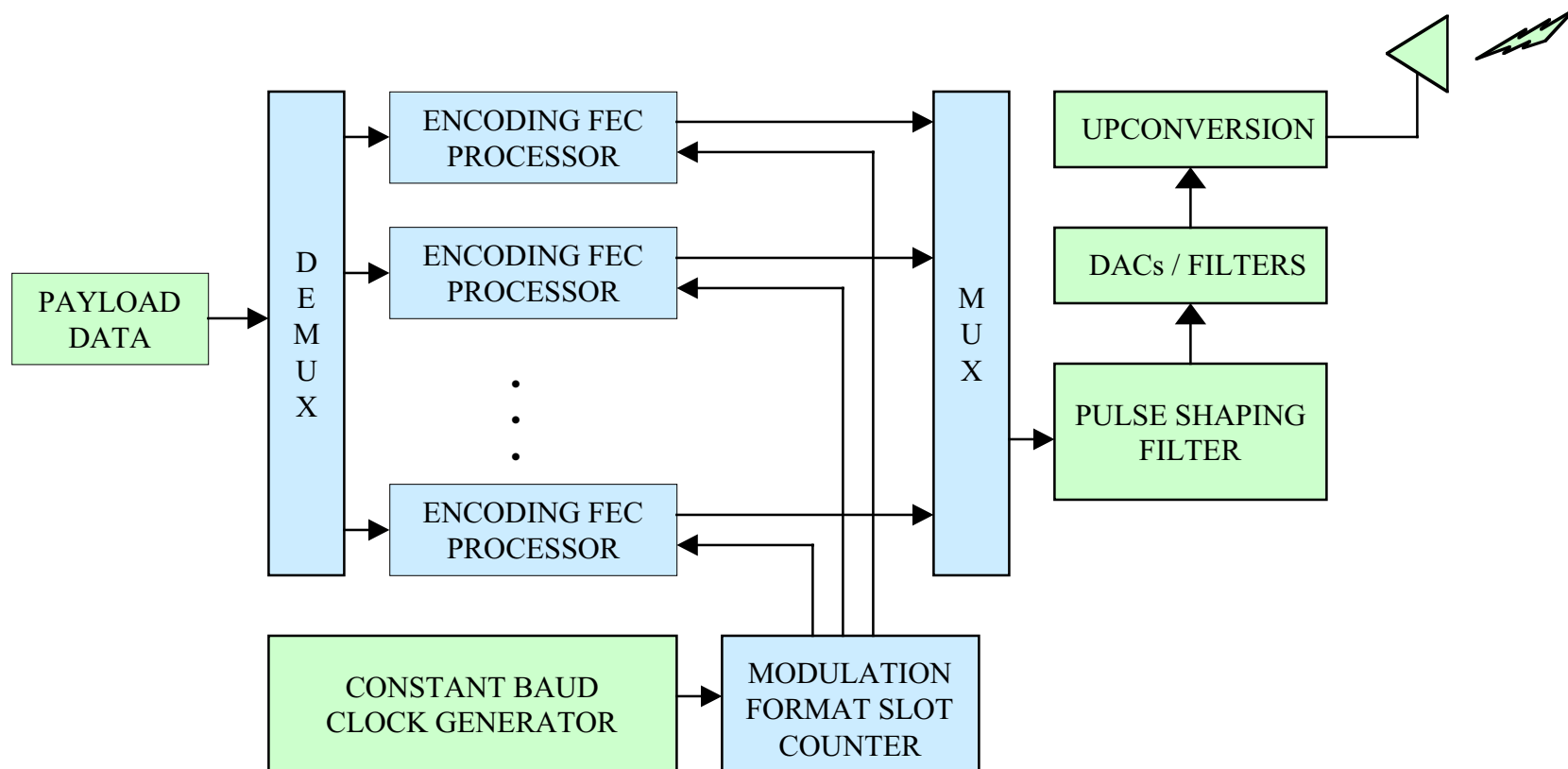
Modem Architecture Description

- Coding structure for downstream link
 - Concatenated coding with interleaver
 - Inner convolutional code
 - Outer Reed-Solomon code
- Advantages
 - High coding gain
 - Supports long block lengths
 - Supports multiple coding strategies in the channel
 - Well-known complexity for subscriber terminal
 - Additional complexity is concentrated at hub

Modem Architecture Description

- Downstream FDD transmission
- Dynamic variation in modulation format
 - Code rate / type (coding strategy)
 - Modulation order
- Supports multiple codes in the channel
 - Code assignment is partitioned by service requirement
 - Supports variability in block lengths
 - Coding gain improvement for all codes
 - Low-latency applications

Modulator Architecture Description



Typical Encoding FEC Processor



Demodulator Architecture Description

