Data-Over-Cable Service Interface Specifications
DOCSIS 1.1

Radio Frequency Interface Specification

CM-SP-RFIv1.1-C01-050907

CLOSED SPECIFICATION

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Key to Document Status Codes

Work in Process An incomplete document, designed to guide discussion and generate feedback, that may include several alternative requirements for consideration.

Draft A document in specification format considered largely complete, but lacking review by cable industry and vendors. Drafts are susceptible to substantial change during the review process.

Issued A stable document, which has undergone rigorous member and vendor review and is suitable for product design and development, cross-vendor interoperability, and for certification testing.

Closed A static document, reviewed, tested, validated, and closed to further engineering change requests to the specification through CableLabs.

Trademarks:

5 Downstream Transmission Convergence Sublayer

5.1 Introduction

This section applies to the first technology option referred to in Section 1.1(Scope). For the second option, refer to Appendix N.

In order to improve demodulation robustness, facilitate common receiving hardware for both video and data, and provide an opportunity for the possible future multiplexing of video and data over the PMD sublayer bitstream defined in Section 4**,** a sublayer is interposed between the downstream PMD sublayer and the Data-Over-Cable MAC sublayer.

The downstream bitstream is defined as a continuous series of 188-byte MPEG [ITU-T H.222.0] packets. These packets consist of a 4-byte header followed by 184 bytes of payload. The header identifies the payload as belonging to the Data-Over-Cable MAC. Other values of the header may indicate other payloads. The mixture of MAC payloads and those of other services is optional and is controlled by the CMTS.

Figure 5-1 illustrates the interleaving of Data-Over-Cable (DOC) MAC bytes with other digital information (digital video in the example shown).

header=DOC	DOC MAC payload
header=video	digital video payload
header=video	digital video payload
header=DOC	DOC MAC payload
header=video	digital video payload
header=DOC	DOC MAC payload
header=video	digital video payload
header=video	digital video payload
header=video	digital video payload

Figure 5-1. Example of Interleaving MPEG Packets in Downstream

5.2 MPEG Packet Format

The format of an MPEG Packet carrying DOCSIS data is shown in Figure 5-2. The packet consists of a 4-byte MPEG Header, a pointer_field (not present in all packets) and the DOCSIS Payload.