



JPEG-XS TDC Profile Mode



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1 Introduction (Informative)

This document defines the requirements for the **IPMX JPEG-XS TDC Profile Mode**, an optional capability layered on top of the baseline IPMX JPEG-XS Video Profile. The TDC Profile Mode enables encoders to exploit limited temporal correlation between adjacent frames using Temporal Differential Coding (TDC), while maintaining the extremely low-latency characteristics expected of IPMX JPEG-XS workflows.

Workflows that particularly benefit from TDC include:

- Computer desktop content
- Computer-generated graphics and animations

AIMS labels and certifies support for this capability as an optional Profile Mode layered on top of the baseline IPMX JPEG-XS Video Profile. This document defines the minimum interoperability requirements for devices claiming support for the IPMX JPEG-XS TDC Profile Mode.

This profile mode builds upon:

- The IPMX baseline requirements, including NMOS requirements, branding, and certification rules found in the IPMX Product Qualification and Certification Requirements (PQCR) document.
- The baseline IPMX JPEG-XS Video Profile.
- The relevant VSF TR-10 Technical Recommendations for compressed video, JPEG-XS, and NMOS.

It does not restate those specifications or redefine their behavior. Instead, it:

- References the applicable TR-10 specifications and the baseline IPMX JPEG-XS Video Profile.
- Specifies sender and receiver requirements particular to TDC support.
- Defines signaling and NMOS expectations needed for interoperability.

Where helpful, short informative explanations are included. All uses of shall, should, and may follow [RFC 2119](https://tools.ietf.org/html/rfc2119) conventions and form the normative portion of this document.

2 Scope (Normative)

This document defines:

- The required behavior for senders and receivers claiming support for the IPMX JPEG-XS TDC Profile Mode.
- Signaling expectations for TDC at the Media Info Block, SDP, and NMOS layers.
- Optional features that vendors may implement (if any).

Anything not defined here, in the applicable TR-10 documents, or in the baseline IPMX JPEG-XS Video Profile is outside this document's scope.

3 Normative References (Normative)

Devices conforming to this profile mode shall comply with:

- [VSF TR-10-1](#): IPMX System Timing and Definitions
- [VSF TR-10-8](#): IPMX NMOS Requirements
- [VSF TR-10-11](#): IPMX Constant Bit-Rate Compressed Video
- [VSF TR-10-15 Part 1](#): IPMX JPEG-XS Codec Requirements for Compressed Video
- [IPMX JPEG-XS Video Profile v1.1-2025-05](#) : the baseline JPEG-XS Video Profile that this profile mode extends.
- [IPMX Product Qualification and Certification Requirements \(PQCR\)](#): IPMX Baseline Requirements, including NMOS requirements, branding, and certification rules.

4 Terms and Definitions (Informative)

The terms used in this document are as defined in:

- VSF TR-10-1
- VSF TR-10-11
- VSF TR-10-15 Part 1
- The baseline IPMX JPEG-XS Video Profile

This profile mode introduces no additional terms.

5 General Provisions (Normative)

Parameter	Requirement
Profile Mode Name	IPMX JPEG-XS TDC Profile Mode
Baseline Profile	IPMX JPEG-XS Video Profile
Codec Capability	JPEG-XS with Temporal Differential Coding (TDC), signaled per TR-10-15 Part 1 §9
Transport Class	Constant Bit-Rate Compressed Video (TR-10-11)
Required Formats	All format combinations required by the baseline IPMX JPEG-XS Video Profile
Resolution	Undefined / Any (as supported and signaled by the device)
Frame Rate	Undefined / Any (as supported and signaled by the device)

A device claiming the IPMX JPEG-XS TDC Profile Mode shall already conform to the baseline IPMX JPEG-XS Video Profile and shall continue to comply with all transport, timing, traffic-shaping, and interoperability rules defined for JPEG-XS flows in IPMX. The TDC Profile Mode introduces additional codec capability but does not modify the underlying IPMX transport model.

6 TDC Profile Mode Requirements (Normative)

6.1 Required Sender Behavior

A device claiming support for this profile mode as a sender shall implement all requirements in this section.

1. The sender shall be capable of generating JPEG-XS streams that use Temporal Differential Coding (TDC). Signaling of TDC presence shall conform to TR-10-15 Part 1 §9 (see §6.3).
2. The sender shall also be capable of generating JPEG-XS streams compliant with the baseline IPMX JPEG-XS Video Profile.
3. The sender shall continue to comply with all sender requirements of the baseline IPMX JPEG-XS Video Profile and TR-10-11, including all transport, timing, and traffic-shaping requirements.

6.2 Required Receiver Behavior

A device claiming support for this profile mode as a receiver shall implement all requirements in this section.

1. The receiver shall correctly decode JPEG-XS streams that use Temporal Differential Coding (TDC), including correct interpretation of TDC signaling per TR-10-15 Part 1 §9 (see §6.3).
2. The receiver shall correctly decode JPEG-XS streams compliant with the baseline IPMX JPEG-XS Video Profile.
3. The receiver shall continue to comply with all receiver requirements of the baseline IPMX JPEG-XS Video Profile and TR-10-11.

6.3 Required Signaling

1. When TDC is used in a transmitted stream, the JPEG-XS Media Info Block defined in TR-10-15 Part 1 §9 shall signal the presence of TDC for the associated stream.
2. The presence of TDC shall be represented consistently across all applicable signaling layers, including the JPEG-XS Media Info Block, the associated SDP, and NMOS flow metadata.

7 NMOS Representation (Normative)

A device claiming this profile mode shall model and advertise its TDC capability through NMOS in accordance with TR-10-8 and the NMOS requirements of the baseline IPMX JPEG-XS Video Profile.

Only profile-mode-specific NMOS constraints appear in this section.

7.1 Capability Advertisement

1. A sender or receiver supporting the IPMX JPEG-XS TDC Profile Mode shall advertise this capability through the NMOS capability resources required by TR-10-8.
2. NMOS capability advertisement shall accurately reflect:
 - Whether the device supports TDC encoding (for senders) or TDC decoding (for receivers).
 - The continued support for the baseline IPMX JPEG-XS Video Profile.
3. NMOS capability advertisements shall be consistent with the corresponding SDP signaling and JPEG-XS Media Info Block contents.

7.2 Stream Compatibility Management

1. Compatibility between senders and receivers with respect to TDC support shall be evaluated using the IS-11 Stream Compatibility Management requirements of TR-10-8.

Appendix A: Change Log

Version	Date	Summary of Changes
1.0	2026-05-15	Public Release