Optical Module Memory Map

Article Overview

Optical module memory maps define how identification, diagnostics, and control data are stored and accessed in SFP, QSFP, and advanced CMIS modules.

SFP/SFP+ Memory Map (SFF-8472)

SFP and SFP+ modules use a small EEPROM accessible via the I²C interface. The memory map is divided into two main areas :

• Base EEPROM (A0h / 0xA0): Contains static information such as module identifier, connector type, vendor name (bytes 20–35), vendor OUI, part number, and revision. This area is typically 96–128 bytes depending on the form factor.
• Digital Diagnostic Monitoring (DDM/DOM, A2h / 0xA2): Stores real-time operational parameters including temperature, supply voltage, laser bias current, TX power, RX power, and alarm/warning thresholds. Not all modules implement all DDM fields, but when present, they allow host systems to monitor module health and performance.

QSFP/QSFP28 Memory Map (SFF-8636)

QSFP family modules extend the SFP concept with multi-page memory maps to support higher data rates and multiple lanes :

• Page 0 (Base ID): Similar to SFP, contains vendor and module identification.
• Page 1 (Extended ID / DDM): Real-time diagnostics for each lane, including TX/RX power, bias, and temperature.
• Pages 2–3: Optional extended features, calibration constants, and lane mapping....

Article Content

Feb 11, 2026

An Overview of All-Optical Memories Based on Periodic ...

Abstract In the present paper, recent advances in the design and fabrication of optical memories based on photonic crystal structure

Sep 02, 2025

What are I2C, MDIO and CMIS Access in Optical Transceivers?

Allows access to optical transceivers'' register pages (memory map) to Read their status and Write (program) their configurations.

Oct 22, 2025

SFF Committee documentation may be purchased in hard copy or

5 4 modules types applicable to this SFF standards are discussed Scope Section 1) 6 In the SFF-8472 specification, an Optical

Jul 21, 2026

CMIS Explained | Common Management Interface for QSFP-DD,

What Is CMIS? CMIS —the Common Management Interface Specification —is a standard developed under the

Nov 26, 2025

Memory organization in SFP, QSFP, XFP and OSFP transceivers

Using device with suffix allows you to program any area in memory map. In this tutorial I''ll show you what''s

Aug 10, 2025

The Most Comprehensive Guide Of Optical Modules

Explore the ultimate guide to optical modules. Learn types, functions, performance metrics

Oct 30, 2025

CMIS Common Management Interface Specification

This Implementation Agreement (IA) defines the Common Management Interface Specification (CMIS), which may be used by

Oct 06, 2025

Classification of optical memory technologies

Download scientific diagram | Classification of optical memory technologies from publication: Optical RAM and integrated optical

Mar 03, 2026

SFP Form Factor: SFF-8472 I²C Memory Map & Registers

This article explores how the SFP memory map is organized, how registers function, and why this structure is essential for

May 07, 2026

Optical Module Coding Explained

The optical module coding acts as a digital fingerprint that is inscribed into each

Feb 14, 2026

Digital Diagnostic Monitoring Interface for SFP and SFP+ Optical ...

This section describes the memory map defined in the SFF-8472. The SFP MSA section uses the two wire serial bus address

Jan 09, 2026

CMIS Common Management Interface Specification

This Technical Document has been created by the Optical Internetworking Forum (OIF). This document is offered to

May 12, 2026

CMIS Explained | Common Management Interface for QSFP-DD,

CMIS is the modern, extensible management interface for high-performance optical modules across form factors and

Jan 25, 2026

How Optical Genome Mapping (OGM) Works

How Optical Genome Mapping Works Optical genome mapping (OGM) is a workflow that combines

Aug 14, 2025

MAP-Optical Power Meter Module mOPM-C1

The MAP optical power meter module extends the optical power measurement capability of the MAP-200 by offering four grades of

Jul 30, 2025

SFF-8472 Specification for Management Interface for SFP+

ABSTRACT: This specification defines an enhanced digital interface (memory map and management interface) for monitoring and

Nov 29, 2025

Understanding Optical Modules: Working Principles, Structures, and ...

Explore the working principles, structures, and performance metrics of optical modules, essential components of

Apr 09, 2026

The Evolution of Optical Modules: Powering the Future

Enter optical modules, which leverage the power of light to transmit data efficiently over long

Apr 06, 2026

Optical Quantum Memory and its Applications in Quantum ...

Optical quantum memory is a device that can store the quantum state of photons and retrieve it on demand and with high fidelity. It is

Jun 25, 2026

Optical RAM and integrated optical memories: a survey

This article reviews state-of-the-art integrated optical memory technologies and optical RAM cell demonstrations describing the

Jun 06, 2026

Everything You Need to Know About Optical Modules

Optical modules are electronic devices used in communication systems to transmit optical

Dec 10, 2025

WDM-enabled optical RAM and optical cache memory

In this article, we present our recent work spanning from WDM-enabled optical RAM bank architectures with optical all

Jan 24, 2026

What Is an Optical Module and Its FAQs (V200)

What Is an Optical Module and Its FAQs (V200) Describes what an optical module is and FAQs, including the fundamentals,

Feb 23, 2026

SFF Committee documentation may be purchased in hard copy or

Added Table 2 to summarize memory map. This specification supplements SFF-8472 management interface to include management

May 24, 2026

How does the latest optical module management standard work?

The memory map of QSFP28 modules complies with the SFF-8636 standard. It contains only four memory pages, which is enough

Nov 23, 2025

Top Content on LinkedIn

Explore top LinkedIn content from members on a range of professional topics.

Jun 30, 2026

Presentation

Specifies the management interface, core and advance management features, and memory map. It is supported by a set of

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: https://iiss.co.za
Email: sales@iiss.co.za
Phone: +27 63 174 2895
Address: Unit 8, Innovation Park, 15 Rivonia Road, Sandton, Johannesburg, 2196, South Africa

This document is for informational purposes only. Specifications subject to change without notice.