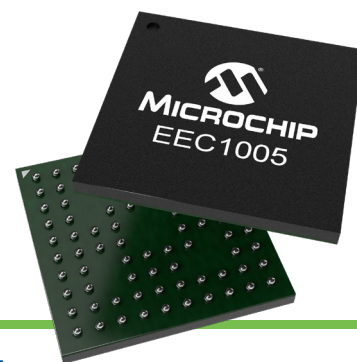# EEC1005 Controllers

Summary

The EEC1005 is a cost effective and easily configurable Universal Backplane Management (UBM) controller for server and storage applications.

This device meets the latest SFF-TA-1005 version 1.4 specification. It reduces Bill of Materials (BOM) cost and enables system versatility through interchangeable backplanes and drive technology. The EEC1005 comes in 84-WFBGA (7 mm × 7 mm) and 144-WFBGA (10 mm × 10 mm) packages.

Benefits of EEC1005

- Easy-to-use Arm®-based solution with out-of-the-box configurations
- Integrated UBM FRU and controller
- Secure boot and firmware update (over UBM or BMC)
- Runtime configurability for different backplane configurations including PCIe® ×1, ×2 and ×4
- Complete solution with reference design files, bill of materials, tools, utilities and Microchip programming services

Form Factors: LFF (U.2 connector), SFF (U.2 or U.3 connector), EDSFF

Hard Drive Technology: SAS, SATA, NVMe™ (bifurcation options: ×1, ×2 and ×4)

Hard Drive Management Type: SGPIO, UBM (I^2C), VPP (I^2C)

Backplane Configuration Options

EEC1005 Configs	Pin Count	ID	Config V	Pinout	HFC Total	HFC - SAS	HFC - PCIe®	DFC Total	DFC - SAS/SATA	DFC - PCIe	DFC/HFC - PCIe
4 Drive SGPIO	84	01	0.1	84_SGPIO	1	1	0	4	4	0	0
8 Drive SGPIO	84	02	0.2	84_SGPIO	1	1	0	8	8	0	0
12 Drive SGPIO	144	03	0.3	144_SGPIO	2	2	0	12	12	0	0
16 Drive SGPIO	144	04	0.4	144_SGPIO	2	2	0	16	16	0	0
4 Drive UBM U.2	84	05	0.5	84_UBM	3	1	2	4	4	4	2
8 Drive UBM U.2	84	06	0.6	84_08M	5	1	4	8	8	8	2
8 Drive UBM U.2 (Full Feature), Split Cable PCIe®	144	07	0.7	144_UBM_ALT	5	1	4	8	8	8	4
8 Drive UBM U.3 (Minimum Feature)	84	08	0.8	84_UBM	4	4	4	8	8	8	2
8 Drive UBM U.3 (Full Feature)	144	09	0.9	144_UBM	4	4	4	8	8	8	2
12 Drive UBM U.2 PCIe Only (Full Featured)	144	0A	1.0	144_UBM	6	0	6	12	0	12	2
12 Drive UBM U.3 PCIe Only (Full Featured)	144	0B	1.1	144_UBM	6	0	6	12	0	12	2
8 Drive UBM U.2 (Full Feature)	144	0C	1.2	144_PIM	5	1	4	8	8	8	2
8 Drive UBM + SGPIO U.2	144	0D	1.3	144_UBM_SGPIO	5	1	4	8	8	8	2
8 Drive UBM U.2 (Full Feature)	144	0E	1.4	144_UBM	5	1	4	8	8	8	2
10 Drive UBM U.2 PCIe Only (Full Featured)	144	0F	1.5	144_UBM	3	0	2	10	0	10	5
8 Drive UBM U.3 (Full Feature) - ×2 Lanes	144	10	1.6	144_UBM	2	2	2	8	8	8	4
8 Drive UBM U.3 (Full Feature) - ×1 Lanes	144	11	1.7	144_UBM	1	1	1	8	8	8	8
8 Drive UBM + SGPIO U.2 Auto CFG	144	12	1.8	144_UBM_SGPIO	5	1	4	8	8	8	2
8 Drive UBM U.3 (Minimum Feature) - ×2 Lanes	84	13	1.9	84_UBM	2	2	2	8	8	8	4
8 Drive UBM U.3 (Minimum Feature) - ×1 Lanes	84	14	2.0	84_UBM	1	1	1	8	8	8	8
12 Drive UBM U.3 (Full Featured) - ×1 Lanes	144	15	2.1	144_UBM	2	2	2	12	12	12	6
10 Drive UBM U.2 PCIe Only (Full Featured)	144	16	2.2	144_UBM	2	0	2	10	0	10	5
8 Drive UBM U.2 (Full Feature), Split Cable PCIe®	144	17	2.3	144_UBM_ALT	3	1	2	8	8	8	4

Reference Design

Take advantage of our reference design to learn more about:

- U.2/U.3 NVMe™ drive management via UBM on SlimSAS™ Host-Facing connectors
- SAS/SATA drive management via SGPIO on MiniSAS HD Host-Facing connectors

Contact Microchip for more information about the reference design schematics or bill of materials.

Backplane Number Configuration Switch

Host-Facing Connector for NVMe™ (1 of 4)

Power Connector (1 of 4)

Host-Facing Connector for SAS/SATA (1 of 2)

EEC1005 UBM Controller Chip

Debug Header

BMC I²C Interface

DS00005007A

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