

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
XCL				RES0				PMG				PARTID																			

**XCL, bit [31]**

**When (FEAT\_MPAMv0p1 is implemented or FEAT\_MPAMv1p1 is implemented) and MPAMF\_CSUMON\_IDR.HAS\_XCL == 1:**

Exclude Clean. The monitor instance does not count cache storage used by lines in an unmodified cache state.

<b>XCL</b>	<b>Meaning</b>
0b0	Monitor instance counts cache storage in modified and unmodified cache lines.
0b1	Monitor instance counts cache storage in modified cache lines only.

**Otherwise:**

Reserved, res0.

**Bits [30:24]**

Reserved, res0.

**PMG, bits [23:16]**

Performance monitoring group to filter cache storage usage monitoring.

If [MSMON\\_CFG\\_CSU\\_CTL.MATCH\\_PMG](#) is 0, this field is not used to match cache storage to a PMG and the contents of this field is ignored.

If [MSMON\\_CFG\\_CSU\\_CTL.MATCH\\_PMG](#) is 1 and [MSMON\\_CFG\\_CSU\\_CTL.MATCH\\_PARTID](#) is 1, the monitor instance selected by [MSMON\\_CFG\\_MON\\_SEL](#) measures or counts cache storage labeled with PMG equal to this field and PARTID equal to the PARTID field.

If [MSMON\\_CFG\\_CSU\\_CTL.MATCH\\_PMG](#) is 1 and [MSMON\\_CFG\\_CSU\\_CTL.MATCH\\_PARTID](#) is 0, the behavior of the monitor instance selected by [MSMON\\_CFG\\_MON\\_SEL](#) is constrained unpredictable. See [MSMON\\_CFG\\_CSU\\_CTL.MATCH\\_PMG](#) for more information.

**PARTID, bits [15:0]**

Partition ID to filter cache storage usage monitoring.

If [MSMON\\_CFG\\_CSU\\_CTL.MATCH\\_PARTID](#) is 0 and [MSMON\\_CFG\\_CSU\\_CTL.MATCH\\_PMG](#) is 0, the monitor measures all allocated cache storage.

If [MSMON\\_CFG\\_CSU\\_CTL.MATCH\\_PARTID](#) is 0 and [MSMON\\_CFG\\_CSU\\_CTL.MATCH\\_PMG](#) is 1, the behavior of the monitor is constrained unpredictable. See the description of [MSMON\\_CFG\\_CSU\\_CTL.MATCH\\_PMG](#).

If [MSMON\\_CFG\\_CSU\\_CTL.MATCH\\_PARTID](#) is 1 and [MSMON\\_CFG\\_CSU\\_CTL.MATCH\\_PMG](#) is 0, the monitor selected by [MSMON\\_CFG\\_MON\\_SEL](#) measures or counts cache storage labeled with PARTID equal to this field.

If [MSMON\\_CFG\\_CSU\\_CTL.MATCH\\_PARTID](#) is 1 and [MSMON\\_CFG\\_CSU\\_CTL.MATCH\\_PMG](#) is 1, the monitor selected by [MSMON\\_CFG\\_MON\\_SEL](#) measures or counts cache storage labeled with PARTID equal to this field and PMG equal to the PMG field.

## Accessing MSMON\_CFG\_CSU\_FLT

This register is within the MPAM feature page memory frames.

In a system that supports Secure, Non-secure, Root, and Realm memory maps, there must be MPAM feature pages in all four address maps:

- [MSMON\\_CFG\\_CSU\\_FLT\\_s](#) must only be accessible from the Secure MPAM feature page.
- [MSMON\\_CFG\\_CSU\\_FLT\\_ns](#) must only be accessible from the Non-secure MPAM feature page.
- [MSMON\\_CFG\\_CSU\\_FLT\\_rt](#) must only be accessible from the Root MPAM feature page.
- [MSMON\\_CFG\\_CSU\\_FLT\\_rl](#) must only be accessible from the Realm MPAM feature page.

[MSMON\\_CFG\\_CSU\\_FLT\\_s](#), [MSMON\\_CFG\\_CSU\\_FLT\\_ns](#), [MSMON\\_CFG\\_CSU\\_FLT\\_rt](#), and [MSMON\\_CFG\\_CSU\\_FLT\\_rl](#) must be separate registers:

- The Secure instance ([MSMON\\_CFG\\_CSU\\_FLT\\_s](#)) accesses the PARTID and PMG matching for a cache storage usage monitor used for Secure PARTIDs.
- The Non-secure instance ([MSMON\\_CFG\\_CSU\\_FLT\\_ns](#)) accesses the PARTID and PMG matching for a cache storage usage monitor used for Non-secure PARTIDs.
- The Root instance ([MSMON\\_CFG\\_CSU\\_FLT\\_rt](#)) accesses the PARTID and PMG matching for a cache storage usage monitor used for Root PARTIDs.
- The Realm instance ([MSMON\\_CFG\\_CSU\\_FLT\\_rl](#)) accesses the PARTID and PMG matching for a cache storage usage monitor used for Realm PARTIDs.

When RIS is implemented, loads and stores to [MSMON\\_CFG\\_CSU\\_FLT](#) access the monitor configuration settings for the resource instance selected by [MSMON\\_CFG\\_MON\\_SEL](#).RIS and the cache storage usage monitor instance selected by [MSMON\\_CFG\\_MON\\_SEL](#).MON\_SEL.

When RIS is not implemented, loads and stores to MSMON\_CFG\_CSU\_FLT access the monitor configuration settings for the cache storage usage monitor instance selected by [MSMON\\_CFG\\_MON\\_SEL](#).MON\_SEL.

**MSMON\_CFG\_CSU\_FLT can be accessed through the memory-mapped interfaces:**

Component	Frame	Offset	Instance
MPAM	MPAMF_BASE_s	0x0810	MSMON_CFG_CSU_FLT_s

Accesses on this interface are **RW**.

Component	Frame	Offset	Instance
MPAM	MPAMF_BASE_ns	0x0810	MSMON_CFG_CSU_FLT_ns

Accesses on this interface are **RW**.

Component	Frame	Offset	Instance
MPAM	MPAMF_BASE_rt	0x0810	MSMON_CFG_CSU_FLT_rt

When FEAT\_RME is implemented, accesses on this interface are **RW**.

Component	Frame	Offset	Instance
MPAM	MPAMF_BASE_rl	0x0810	MSMON_CFG_CSU_FLT_rl

When FEAT\_RME is implemented, accesses on this interface are **RW**.

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