

The MSMON MBWU L characteristics are:

Accesses the monitor instance selected by [MSMON_CFG_MON_SEL](#).

MSMON_MBWU_L_s is the Secure long memory bandwidth usage monitor instance selected by the Secure instance of [MSMON_CFG_MON_SEL](#). MSMON_MBWU_L_ns is the Non-secure long memory bandwidth usage monitor instance selected by the Non-secure instance of [MSMON_CFG_MON_SEL](#). MSMON_MBWU_L_rt is the Root long memory bandwidth usage monitor instance selected by MSMON_CFG_MON_SEL_rt. MSMON_MBWU_L_rl is the Realm long memory bandwidth usage monitor instance selected by MSMON_CFG_MON_SEL_rl.

If MPAMF IDR.HAS_RIS is 1, the monitor instance long monitor register accessed is for the resource instance currently selected by MSMON_CFG_MON_SEL.RIS and the monitor instance of that resource instance selected by MSMON_CFG_MON_SEL.MON_SEL.

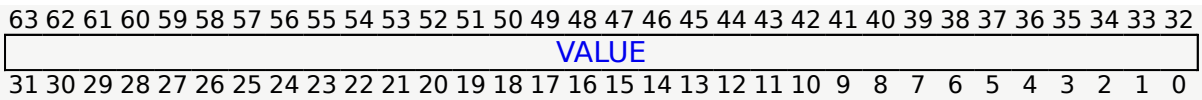
This register is present only when FEAT_MPAM is implemented, MPAMF_IDR.HAS_MSMON == 1, MPAMF_MSMON_IDR.MSMON_MBWU == 1 and MPAMF_MBWUMON_IDR.HAS_LONG == 1. Otherwise, direct accesses to MSMON MBWU L are res0.

The power and reset domain of each MSC component is specific to that component.

MSMON MBWU L is a 64-bit register.

When MPAMF MBWUMON IDR.LWD == 0:

63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32				
NRDY												RES0												VALUE											
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				



NRDY, bit [63]

Not Ready. Indicates whether the monitor instance has possibly inaccurate data.

NRDY	Meaning
0b0	The monitor instance is ready and the MSMON_MBWU_L.VALUE field is accurate.
0b1	The monitor instance is not ready and the contents of the MSMON_MBWU_L.VALUE field might be inaccurate or otherwise not represent the actual memory bandwidth usage.

Bits [62:44]

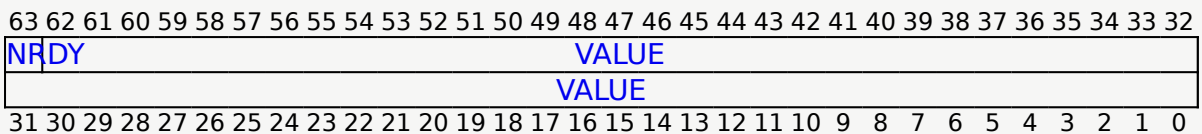
Reserved, res0.

VALUE, bits [43:0]

Long (44-bit) memory bandwidth usage counter value if MSMON_MBWU_L.NRDY is 0. Invalid if MSMON_MBWU_L.NRDY is 1.

VALUE is the long count of bytes transferred since the monitor was last reset that met the criteria set in [MSMON_CFG_MBWU_FLT](#) and [MSMON_CFG_MBWU_CTL](#) for the monitor instance selected by [MSMON_CFG_MON_SEL](#).

When MPAMF_MBWUMON_IDR.LWD == 1:



NRDY, bit [63]

Not Ready. Indicates whether the monitor instance has possibly inaccurate data.

NRDY	Meaning
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0b0	The monitor instance is ready and the MSMON_MBWU_L.VALUE field is accurate.
0b1	The monitor instance is not ready and the contents of the MSMON_MBWU_L.VALUE field might be inaccurate or otherwise not represent the actual memory bandwidth usage.

VALUE, bits [62:0]

Long (63-bit) memory bandwidth usage counter value if MSMON_MBWU_L.NRDY is 0. Invalid if MSMON_MBWU_L.NRDY is 1.

VALUE is the long count of bytes transferred since the monitor instance was last reset that met the criteria set in [MSMON_CFG_MBWU_FLT](#) and [MSMON_CFG_MBWU_CTL](#) for the monitor instance selected by [MSMON_CFG_MON_SEL](#).

Accessing MSMON_MBWU_L

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_MBWU_L_s must only be accessible from the Secure MPAM feature page.
- MSMON_MBWU_L_ns must only be accessible from the Non-secure MPAM feature page.
- MSMON_MBWU_L_rt must only be accessible from the Root MPAM feature page.
- MSMON_MBWU_L_rl must only be accessible from the Realm MPAM feature page.

MSMON_MBWU_L_s, MSMON_MBWU_L_ns, MSMON_MBWU_L_rt, and MSMON_MBWU_L_rl must be separate registers:

- The Secure instance (MSMON_MBWU_L_s) accesses the long memory bandwidth usage monitor used for Secure PARTIDs.
- The Non-secure instance (MSMON_MBWU_L_ns) accesses the long memory bandwidth usage monitor used for Non-secure PARTIDs.
- The Root instance (MSMON_MBWU_L_rt) accesses the long memory bandwidth usage monitor used for Root PARTIDs.
- The Realm instance (MSMON_MBWU_L_rl) accesses the long memory bandwidth usage monitor used for Realm PARTIDs.

When RIS is implemented, reads and writes to `MSMON_MBWU_L` access the long memory bandwidth usage monitor instance for the bandwidth resource instance selected by [MSMON_CFG_MON_SEL](#).RIS and the monitor instance selected by [MSMON_CFG_MON_SEL](#).MON_SEL.

When RIS is not implemented, reads and writes to `MSMON_MBWU_L` access the long memory bandwidth usage monitor instance for the monitor instance selected by [MSMON_CFG_MON_SEL](#).MON_SEL.

MSMON_MBWU_L can be accessed through the memory-mapped interfaces:

Component	Frame	Offset	Instance
MPAM	MPAMF_BASE_s	0x0880	MSMON_MBWU_s

Accesses on this interface are **RW**.

Component	Frame	Offset	Instance
MPAM	MPAMF_BASE_ns	0x0880	MSMON_MBWU_ns

Accesses on this interface are **RW**.

Component	Frame	Offset	Instance
MPAM	MPAMF_BASE_rt	0x0880	MSMON_MBWU_rt

When FEAT_RME is implemented, accesses on this interface are **RW**.

Component	Frame	Offset	Instance
MPAM	MPAMF_BASE_rl	0x0880	MSMON_MBWU_rl

When FEAT_RME is implemented, accesses on this interface are **RW**.

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