

RENESAS TECHNICAL UPDATE

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Product Category	MPU/MCU		Document No.	TN-RA*-A0035A/E	Rev.	1.00
Title	RA6M4 Group, RA6M5 Group, correction of Octa Serial Peripheral Interface (OSPI)		Information Category	Technical Notification		
Applicable Product	RA6M4 Group RA6M5 Group	Lot No.	Reference Document	RA6M4 Group User's Manual Hardware Rev.1.10 RA6M5 Group User's Manual Hardware Rev.1.10		
		All				

The descriptions of Octa Serial Peripheral Interface (OSPI) are corrected.

[before] example: RA6M4

DSR0 : Device Size Register 0

Base address: OSPI = 0x400A_6000

Offset address: 0x0C

Bit position:	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
Bit field:	DV0TYP[1:0]		DV0SZ[29:16]													
Value after reset:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit position:	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Bit field:	DV0SZ[15:0]															
Value after reset:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Bit	Symbol	Function	R/W
29:0	DV0SZ[29:0]	Device 0 size setting Set a 30-bit value for the size of memory connected as device 0. Examples: 0x08000000: 128-Mbyte memory 0x01000000: 16-Mbyte memory 0x00800000: 8-Mbyte memory	R/W
31:30	DV0TYP[1:0]	Device 0 type setting 0 0: flash on device 0 0 1: RAM on device 0 1 0: no connection on device 0 1 1: forbidden	R/W

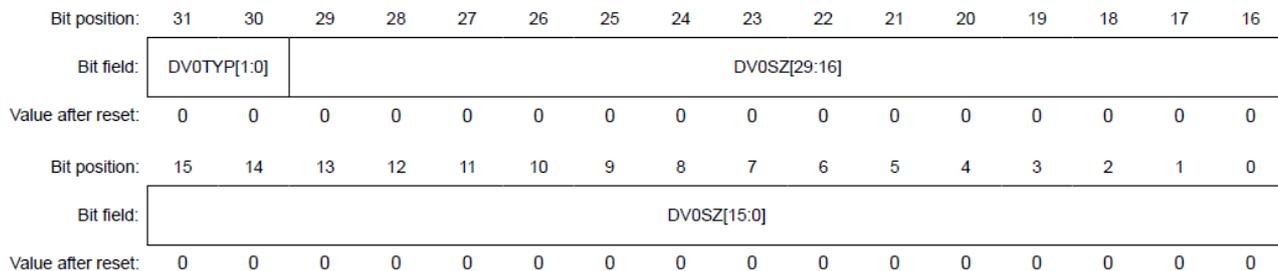
DSR0 specifies the type of memory to be accessed as device 0 and the size of the RAM.

[after]

DSR0 : Device Size Register 0

Base address: OSPI = 0x400A_6000

Offset address: 0x0C



Bit	Symbol	Function	R/W
29:0	DV0SZ[29:0]	Device 0 size setting Set a 30-bit value for the size of memory connected as device 0. Settings larger than 8-Mbyte for OctaRAM is prohibited. 0x00000000: 128-Mbyte memory 0x01000000: 10-Mbyte memory Example 0x00800000: 8-Mbyte memory	R/W
31:30	DV0TYP[1:0]	Device 0 type setting 0 0: flash on device 0 0 1: RAM on device 0 1 0: no connection on device 0 1 1: forbidden	R/W

DSR0 specifies the type of memory to be accessed as device 0 and the size of the RAM.

[before] example: RA6M4

Address Map

In the memory-map read/write mode, OctaFlash is allocated to the OctaFlash space (0x7000_0000 to 0x7FFF_FFFF), and Ostara is allocated to the OctaRAM space (0x6800_0000 to 0x6FFF_FFFF).

One OctaFlash device and one OctaRAM device can be connected to this LSI, and up to 256 Mbytes can be accessed in OctaFlash device, and up to 128 Mbytes can be accessed in OctaRAM device.

	Internal Address	Maximum Accessible Area
OctaFlash	0x7000_0000 to 0x7FFF_FFFF	Up to 256 Mbytes
OctaRAM	0x6800_0000 to 0x6FFF_FFFF	Up to 128 Mbytes

[after]

Address Map

In the memory-map read/write mode, OctaFlash is allocated to the OctaFlash space (0x7000_0000 to 0x7FFF_FFFF), and OctaRAM is allocated to the OctaRAM space (0x6800_0000 to **0x687F_FFFF**).

One OctaFlash device and one OctaRAM device can be connected to this LSI, and up to 256 Mbytes can be accessed in OctaFlash device, and up to **8** Mbytes can be accessed in OctaRAM device.

	Internal Address	Maximum Accessible Area
OctaFlash	0x7000_0000 to 0x7FFF_FFFF	Up to 256 Mbytes
OctaRAM	0x6800_0000 to 0x687F_FFFF	Up to 8 Mbytes

[before] example: RA6M4

Initial Settings

Table 34.6 shows an example of initial settings of the OSPI registers.

Table 34.6 Example of initial settings of the OSPI registers

Step	Read/ Write	Address (Register)	Data	Data Length (Bytes)	Description
1	Write	DSR0	0x40800000	4	Specifies the type and size of device 0 The device 0 connects 128 Mbit OctaRAM
2	Write	DSR1	0x08000000	4	Specifies the type and size of device 1 The device 1 connects 1 Gbit OctaFlash

[after]

Initial Settings

Table shows an example of initial settings of the OSPI registers.

Table Example of initial settings of the OSPI registers

Step	Read/ Write	Address (Register)	Data	Data Length (Bytes)	Description
1	Write	DSR0	0x40800000	4	Specifies the type and size of device 0 The device 0 connects 64 Mbit OctaRAM
2	Write	DSR1	0x08000000	4	Specifies the type and size of device 1 The device 1 connects 1 Gbit OctaFlash