

Address	Reg Name	B15	B14	B13	B12	B11	B10	B9	B8	B7	B6	B5	B4	B3	B2	B1	B0
0x90	LOG_WRITE																WR_PTR[15:0]
0x91	LOG_READ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	RD_PTR[3:0]	
0x80	A																A[15:0]
0x81	B																B[15:0]
0x82	PRODUCT																P[15:0]
0x70	C																C[15:0]
0x71	D																D[15:0]
0x72	QUOTIENT																Q[15:0]

The register LOG_WRITE receives the value with 16-bit inputs to compute the floor function of log base 2, which is assigned to address 0x90. The register LOG_READ stores the output value based on the input value and provides the result of the logarithm which is assigned to address 0x91. These are the two registers that we use for log peripherals.

Register A will be loaded with a 16-bit value with the address of 0x80. Register B will be also loaded with a 16-bit value and will trigger the multiplication process of A and B within the address of 0x81. Register PRODUCT will be assigned to address 0x82. The truncated 16-bit product is stored in the signal (15 downto 0) and will be stored at a value with the product of A and B. These three registers will be working for the multiplication peripheral.

Register C will be loaded with a 16-bit value with the address of 0x70 and Register D will also be loaded with a 16-bit value with the address of 0x71. Register D will trigger the division process of registers C and D. Register QUOTIENT will be assigned to address 0x72 and will store the quotient of A (the dividend) and B (the divisor). These three registers will be used for the division peripheral.