

ERRATA NOTE

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1 Known Issues

1.1 Issue 1: DMA Variable Transfer Length with Length 0 or 1.

1.1.1 Description

Depending on which VLEN mode is used, attempting a variable length transfer with length 0 or 1 can lead to erroneous behavior by the DMA. The failing conditions will not occur naturally in an application as they do not transfer useful data, but may occur as the result of an error condition at the source of the DMA transfer. The DMA is generally set up with variable transfer length to transfer packets that come in over USART or RF. If there is an error in the medium, these packets may be malformed. If they for example contain a length byte of 0, using the DMA to transfer those packets automatically without taking the described precautions may lead to a buffer overrun. The two VLEN modes that are affected are VLEN values 001 and 010. VLEN values 000, 011 and 100 work without restrictions.

Table 1 - DMA Variable Length Restrictions

VLEN	Byte Mode	Word Mode	Comment
000	OK	OK	
001	Two bytes transferred when length byte is 0.	Two words transferred when length word is 0.	Can be used if contents of length byte/word in source buffer can be checked not to be 0 or 1 before DMA is triggered, or if an extra transfer to destination is acceptable.
010	Excessive number of bytes transferred when length byte is 0. Extra transfer when length byte is 1.	2 transfers executed when length word is 0 or 1. Interrupt not raised when length word is 0.	Byte mode can be used if contents of length byte in source buffer can be checked not to be 0 or 1 before DMA is triggered. Word mode can be used if contents of length word in source buffer can be checked not to be 0 or 1 before DMA is triggered, or if an extra transfer to destination is acceptable.
011	OK	OK	
100	OK	OK	

1.1.2 Suggested Workarounds

Please observe the comments for each of the affected modes in order to use them without issues. Alternatively, any of the unaffected VLEN modes can be used if the buffer sizes are adjusted accordingly.

2 General Information

2.1 Document History

Revision	Date	Description/Changes
SWRZ042	2012-03-28	Initial release

Table 2: Document History

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