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 malformatted. 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.

1.2 Issue 2: Receiving very short packets may cause a false extra packet to be received.

1.2.1 Description

When receiving very short packets in basic mode a false extra packet might be received. This can happen with the following combination of settings:

- Basic mode. (MODE (Bits 0–1) in register PRF_TASK_CONF set to 00 or 01)
- Repeated mode. (REPEAT (Bit 2) in register PRF_TASK_CONF set to 1)
- No CRC bytes. (register PRF_CRC_LEN set to 0)
- 0 or 1 payload byte. (not including address if present)

In this case, an extra packet may be reported after the received one. The reason is that in these cases the demodulator is abruptly shut down after reception, this might cause an extra byte to be received. This extra byte will be interpreted as a second packet.There may be other situations with short packets that also give this situation.

1.2.2 Suggested Workaround

If a setup making this scenario possible cannot otherwise be avoided (e.g. by configuring at least one CRC byte), a possible workaround is to use single mode instead of repeated, and restart the Rx after each packet. Set REPEAT (Bit 2) in register PRF_TASK_CONF to 0 to configure the radio for single mode operation.

1.3 Issue 3: RF test commands read PRF_RADIO_CONF register.

1.3.1 Description

The RF test command CMD_RX_TEST and CMD_DEMOD_TEST are supposed to operate without reading RAM based registers. However the RAM based register PRF_RADIO_CONF is read, and if this memory location is not initialized, the user does not have control over which DC offset mode is run.

1.3.2 Suggested Workaround

Always make sure PRF_RADIO_CONF is initialized before running CMD_RX_TEST or CMD_DEMOD_TEST.

2 General Information

2.1 Document History

Revision	Date	Description/Changes
SWRZ041	2012-03-28	Initial release

Table 2: Document History

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Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265