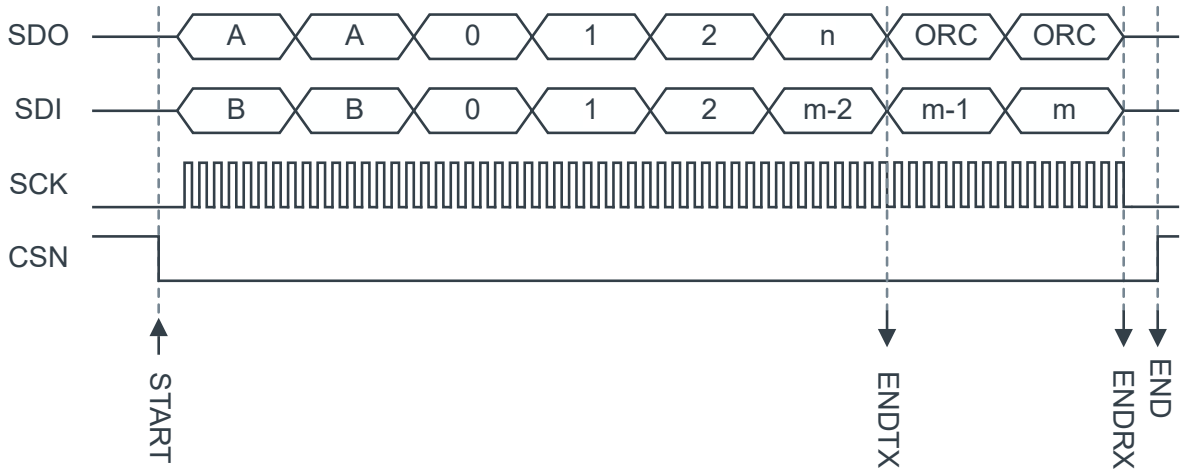

Figure 136: SPIM transaction

The ENDTX event is generated when all bytes in buffer DMA.TX.PTR on page 609 are transmitted. The number of bytes in the transmit buffer is specified in register DMA.TX.MAXCNT on page 609. The ENDRX event is generated when buffer DMA.RX.PTR on page 606 is full; that is when the number of bytes specified in register DMA.RX.MAXCNT on page 607 have been received. The transaction stops automatically after all bytes are transmitted or received. When the maximum number of bytes in the receive buffer is larger than the number of bytes in the transmit buffer, the contents of register ORC on page 605 will be transmitted after the last byte in the transmit buffer has been transmitted.

The END event is generated after both the ENDRX and ENDTX events have been generated.

SPIM is stopped by triggering the STOP task. A STOPPED event is generated when the SPIM has stopped. If the STOP task is triggered in the middle of a transaction, SPIM completes the process for the current byte before stopping. The STOPPED event is generated even if the STOP task is triggered while there is no ongoing transaction.

If the ENDTX event has not been generated when the SPIM peripheral stops, the ENDTX event will be generated, even if all bytes in the buffer have not been transmitted.

If the ENDRX event has not been generated when the SPIM stops, the ENDRX event will be generated even if the buffer DMA.RX.PTR on page 606 is not full.

A transaction can be suspended and resumed using the SUSPEND and RESUME tasks, respectively. When the SUSPEND task is triggered, SPIM completes transmitting and receiving the current byte before it is suspended.

8.19.2 D/CX functionality

Some SPI targets, such as display drivers, require an additional signal from the SPIM to distinguish between command and data bytes. This line is called D/CX.

SPIM supports additional signals such as a D/CX output line. The D/CX line is set low for transmitting command bytes and high for transmitting data bytes.

The D/CX pin number is selected using . The number of command bytes that precede the data bytes is configured using DCXCNT on page 604. Writing to DCXCNT on page 604 during an ongoing transmission is not allowed.

The following figure shows D/CX in use, where SPIM.DCXCNT=`1`.