EMV® Specification Bulletin No. 200
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Transmission Error Timings

This Specification Bulletin changes the timing requirements for the exception processing of transmission errors primarily during the half-duplex block transmission protocol.

Applicability

This Specification Bulletin applies to:

- *EMV Contactless Specifications for Payment Systems, Book D – EMV Contactless Communication Protocol Specification, Version 2.6 – March 2016.*

Related Documents

- *None*

Description

This bulletin changes the timing requirements for the exception processing of transmission errors primarily during the half-duplex block transmission protocol. The time within which a block must be retransmitted or a reset initiated is now defined from the end of the last block instead of from the beginning of the last block and the retransmission time limit has been reduced accordingly. This reduction in the retransmission time limit also applies whilst not in the half-duplex block transmission protocol.

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Proposed Specification Change

Change Requirement 10.3.5.3 as follows:

PCD	
10.3.5.3	If a block with a transmission error is received after receipt of a block not indicating chaining, then the PCD shall send an R(NAK) block. The PCD shall send the R(NAK) block no later than $t_{RETRANSMISSION}$ ~~measured from the start~~ after the end of the modulation of the block with the transmission error. The PCD shall send up to two consecutive R(NAK) blocks to ask for retransmission. If a block with a transmission error in response to the second R(NAK) block is received, then the PCD shall report a transmission error to the terminal and continue as specified in 10.3.5.9 no later than $t_{RESETDELAY}$ after the end of the modulation of the last block with the transmission error. ~~measured from the start of the last invalid response (i.e. the start of SoF for Type A response and the start of SoS for a Type B response as defined in section 4.8).~~
Note that the transmission error is suppressed by the EMD handling defined in section 4.9.2 if the transmission error is detected when less than 4 bytes have been received from the PICC.	

Change Requirement 10.3.5.4 as follows:

PCD	
10.3.5.4	If a block with a protocol error is received after receipt of a block not indicating chaining, then the PCD shall report a protocol error to the terminal and continue as specified in 10.3.5.9 no later than $t_{RESETDELAY}$ after the end of the modulation of the block ~~measured from the start of the response block~~ containing the protocol error ~~(i.e. the start of SoF for Type A response and the start of SoS for a Type B response as defined in section 4.8)~~.

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Change Requirement 10.3.5.6 as follows:

PCD	
10.3.5.6	If a block with a transmission error is received after receipt of a block indicating chaining, then the last R(ACK) block sent by the PCD shall be retransmitted. The PCD shall send the R(ACK) block no later than **$t_{RETRANSMISSION}$** ~~measured from the start~~ after the end of the modulation of the block with the transmission error. The PCD shall retransmit the R(ACK) block up to two consecutive times to ask for retransmission. If a block with a transmission error in response to the second R(ACK) block is received, then the PCD shall report a transmission error to the terminal and continue as specified in 10.3.5.9 no later than **$t_{RESETDELAY}$** after the end of the modulation of the last block with the transmission error. ~~measured from the start of the last invalid response (i.e. the start of SoF for Type A response and the start of SoS for a Type B response as defined in section 4.8).~~
Note that the transmission error is suppressed by the EMD handling defined in section 4.9.2 if the transmission error is detected when less than 4 bytes have been received from the PICC.	

Change Requirement 10.3.5.7 as follows:

PCD	
10.3.5.7	If a block with a protocol error is received after receipt of a block indicating chaining, then the PCD shall report a protocol error to the terminal and continue as specified in 10.3.5.9 no later than **$t_{RESETDELAY}$** after the end of the modulation of the block ~~measured from the start of the response block~~ containing the protocol error ~~(i.e. the start of SoF for Type A response and the start of SoS for a Type B response as defined in section 4.8)~~.

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Change the value of $t_{RETRANSMISSION}$ in Table A.6 as follows:

Table A.6: PCD Processing

Parameter	PCD Value Min	PCD Value Max	PICC Value	Units
…				
$t_{RETRANSMISSION}$	~~33~~10			ms
…				

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