

81.1.4

~~Predictable operation of the MAC Control PAUSE operation demands that there be an upper bound on the propagation delays through the network (see 80.4 for additional details). This implies that MAC, MAC Control sublayer, and PHY implementers must conform to certain delay maxima, and that network planners and administrators conform to constraints regarding the cable topology and concatenation of devices.~~ The maximum cumulative MAC Control, MAC and RS delay (sum of transmit and receive delays at one end of the link) shall meet the values specified in Table 81-1. ~~Bit time is specified in 1.4. One pause_quantum is specified as 512 bit times in 31B.2.~~ [A description of overall system delay constraints and the definitions for bit-times and pause_quanta can be found in 80.4 and its references.](#)

82.5

~~Predictable operation of the MAC Control PAUSE operation demands that there be an upper bound on the propagation delays through the network. This implies that MAC, MAC Control sublayer, and PHY implementers must conform to certain delay maxima, and that network planners and administrators conform to constraints regarding the cable topology and concatenation of devices.~~ The maximum delay contributed by the 40GBASE-R PCS (sum of transmit and receive delays at one end of the link) shall be no more than 11264 BT (22 pause_quanta or 281.6 ns). The maximum delay contributed by the 100GBASE-R PCS (sum of transmit and receive delays at one end of the link) shall be no more than 35328 BT (69 pause_quanta or 353.28 ns). ~~See 80.4.~~ [A description of overall system delay constraints and the definitions for bit-times and pause_quanta can be found in 80.4 and its references.](#)

83.5.4

~~Predictable operation of the MAC Control PAUSE operation demands that there be an upper bound on the propagation delays through the network. This implies that MAC, MAC Control sublayer, and PHY implementers must conform to certain delay maxima, and that network planners and administrators conform to constraints regarding the cable topology and concatenation of devices.~~ The maximum cumulative delay contributed by up to four PMA stages in a PHY (sum of transmit and receive delays at one end of the link) shall meet the values specified in Table 83-1. ~~Bit time is specified in 1.4. One pause_quantum is specified as 512 bit times in 31B.2. See 80.4.~~ [A description of overall system delay constraints and the definitions for bit-times and pause_quanta can be found in 80.4 and its references.](#)

84.4 Delay constraints

~~Predictable operation of the MAC Control PAUSE operation demands that there be an upper bound on the propagation delays through the network. This implies that MAC, MAC Control sublayer, and PHY implementers must consider the delay maxima, and that network planners and administrators consider the delay constraints regarding concatenation of devices.~~ [A description of overall system delay constraints and the definitions for bit times and pause_quanta can be found in 69.3 and Table 80-2.](#)

The sum of the transmit and the receive delays at one end of the link contributed by the 40GBASE-KR4 PMD, AN and the medium in one direction shall be no more than 2048 bit times (4 pause_quanta or 51.2 ns). It is assumed that the one way delay through the medium is no more than 320 bit times (8 ns). [A description of overall system delay constraints and the definitions for bit-times and pause_quanta can be found in 80.4 and its references.](#)

85.4 Delay constraints

~~Predictable operation of the MAC Control PAUSE operation demands that there be an upper bound on the propagation delays through the network. This implies that implementors of MAC, MAC Control, and PHY must consider the delay maxima, and that network planners and administrators consider the delay constraints regarding the cable topology and concatenation of devices. A description of overall system delay constraints and the definitions for bit times and pause_quanta can be found in 85.4 and Table 80-2. The sum of the transmit and the receive delays at one end of the link contributed by the 40GBASE-CR4 PMD, AN and the medium in one direction shall be no more than 6144 bit times (12 pause_quanta or 153.6 ns). It is assumed that the one way delay through the medium is no more than 2072 bit times (51.8 ns).~~

The sum of the transmit and the receive delays at one end of the link contributed by the 100GBASE-CR10 PMD, AN and the medium in one direction shall be no more than 14848 bit times (29 pause_quanta or 148.48 ns). It is assumed that the one way delay through the medium is no more than 5180 bit times (51.8 ns). [A description of overall system delay constraints and the definitions for bit-times and pause_quanta can be found in 80.4 and its references.](#)

86.3.1

The sum of the transmit and receive delays at one end of the link contributed by the 40GBASE-SR4 PMD including 2 m of fiber in one direction shall be no more than 1024 bit-times (2 pause_quanta or 25.6 ns). The sum of the transmit and receive delays at one end of the link contributed by the 100GBASE-SR10 PMD including 2 m of fiber in one direction shall be no more than 2048 bit-times (4 pause_quanta or 20.48 ns). [A description of overall system delay constraints and the definitions for bit-times and pause_quanta can be found in 80.4 and its references.](#)

87.3.1

~~An upper bound to the delay through the PMA and PMD is required for predictable operation of the MAC Control PAUSE operation. The sum of the transmit and the receive delays at one end of the link contributed by the 40GBASE-LR4 PMD including 2 m of fiber in one direction shall be no more than 1024 bit-times (2 pause_quanta or 25.6 ns). See 80.3. A description of overall system delay constraints and the definitions for bit times and pause_quanta can be found in 44.3.~~ [A description of overall system delay constraints and the definitions for bit-times and pause_quanta can be found in 80.4 and its references.](#)

88.3.1 Delay constraints

~~An upper bound to the delay through the PMA and PMD is required for predictable operation of the MAC Control PAUSE operation. The sum of the transmit and receive delays at one end of the link contributed by the 100GBASE-LR4 or 100GBASE-ER4 PMD including 2 m of fiber in one direction shall be no more than 2048 bit-times (4 pause_quanta or 20.48 ns). See 80.4. A description of overall system delay constraints and the definitions for bit times and pause_quanta can be found in 44.3.~~ [A description of overall system delay constraints and the definitions for bit-times and pause_quanta can be found in 80.4 and its references.](#)