
IEEE 802.3 and 802.5 Frame Formats

The IEEE 802.3 frame (Fig. 1) consists of a 48-bit destination address, a 48-bit source address, a 16-bit length field, and then a data field ranging between 368 and 12,000 bits in length and consisting of data organized into octets. This is followed by a 32-bit cyclic redundancy check (CRC).

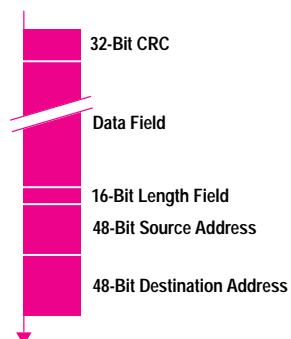


Fig. 1. IEEE 802.3 frame structure.

The IEEE 802.5 token-ring frame (Fig. 2) consists of an 8-bit access control field (not used in the 802.12 standard), an 8-bit frame control field, a 48-bit destination address, a 48-bit source address, between 0 and 240 bits of routing information, and then a data field ranging between 0 and 36,016 bits in length and consisting of data organized into octets. This data field is followed by a 32-bit CRC.

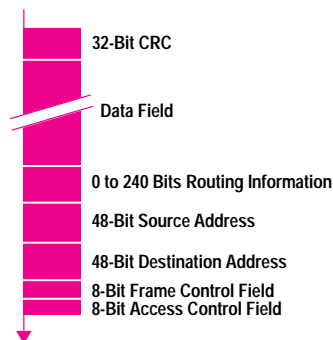


Fig. 2. IEEE 802.5 frame structure.

The CRC provides two types of protection for an IEEE 802.3 or 802.5 frame:

- Any three single-bit errors occurring anywhere in the frame are detected.
- Any burst of errors for which the distance between the first corrupted bit and the last corrupted bit is less than or equal to 32 bits is detected.

IEEE Project 802 requires that any transmission scheme developed under its aegis can perform the first type of error detection, that is, that at least three single-bit errors can always be detected.