

Magtek OEM Products FAQ's



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Designing a Magnetic Reader

Q: What information is available to help me design my magnetic reader?

A: In order to ensure that all aspects of the mechanical and electrical design have been addressed, MagTek has prepared a [Magnetic Card Reader Design Kit](#). This documentation kit provides information about the mechanical configuration, electrical requirements, and printed circuit board layout. The kit can be obtained from your MagTek sales representative.

Q: What is the maximum length of the read head wires?

A: The length of the head wires is not as critical as the routing of the wires. The wires for each track should be twisted with a ground wire and should not be routed near noisy circuits or digital signals. Also, the capacitance of the wires should be considered when determining the value of the head load capacitor.

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Design Verification

Q: How can I be sure that my design will work properly?

A: MagTek is willing to review your design before you assemble your system. MagTek will evaluate the head placement, cable routing, and PCB layout to ensure a successful card reader design.

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Operator Issues

Q: What is the typical card speed for hand-swiped readers?

A: If there are no physical barriers, a right-to-left or top-to-bottom swipe will normally be in the range of 3 to 50 inches per second (ips). A hurried operator will usually swipe the card at about 40 ips.

Q: On an insertion reader, which stroke is most reliable?

A: In numerous trials, it has been found that the withdrawal stroke provides the most reliable read performance. On the insertion stroke, the card may not be well aligned and the operator tends to be a bit more hesitant. The withdrawal stroke provides a much smoother operation.

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Magnetic Card Standards

Q: Where can I locate the relevant credit card standards?

A: Most of the standards used to define the encoding of the magnetic tracks used on credit cards are available from ANSI (American National Standards for Information) at www.ansi.org. The documents are all in the category ANSI/ISO/IEC. Selected documents for **Identification Cards** are listed below:

- 7810 Physical Characteristics
- 7811-2 Recording Technique - Magnetic Stripe
- 7811-4 Recording Technique - Location of Read-Only Magnetic Tracks 1 and 2
- 7811-5 Recording Technique - Location of Read-Write Magnetic Track - Track 3
- 7811-6 Recording Technique - Magnetic Stripe High Coercivity