WWW.Q-CARD.COM

# Magnetic Stripe Custom Test Cards

## Q-Card Test Cards

- Each card is permanently serialized
- Cards are encoded on a precision transport
- Track alignment is closely controlled
- Jitter is checked per the ISO/IEC7811-2 and/or ISO/IEC7811-6 standard
- Each card is produced using ISO 2.125-inch x 3.375-inch (54mm x 85.7mm) ID1 PVC base (optional sizes and materials available)
- Cards are encoded using 75/210 BPI (3/8.3 BPMM standard), 3 track locations (other densities are available)
- For testing readers and encoders to ISO/IEC7811-2 and ISO/IEC7811-6
- Data encoded is a sequence of the digits 0-9 repeated for the length of the track (custom data can be used upon request)

## Magnetic Stripe Test Cards

Magnetic test cards are standard ID-1 cards with an attached magstripe. The magnetic stripe has either special magnetic characteristics and/or special magnetic patterns are encoded onto the stripe. These cards can be used for testing, calibration, or debugging of magnetic card readers or encoders. Magnetic test cards can also be used to ensure compliance to worldwide ISO card standards, your own internal company standards, or your external client's standards.

High Coercivity or Low Coercivity test cards can be provided with specific:

- jitter
- amplitude
- density
- track location
- parity errors
- LRC errors
- special data format (JIS II, AANVA, etc.)

## About Jitter

Bit-to-bit jitter is a change in bit length from one bit to the next on a magnetic stripe. Ideal cards would have no jitter, but real cards do! Cards with high jitter are generally unreadable, because the decoder electronics in the card reader cannot tell a binary "1" bit from a "0" bit. Precision jitter test cards are ideal for testing readers and encoders. They are also good as standards of comparison when checked against production samples.

## Our Test Cards

The jitter test card is encoded on our high quality proprietary equipment with the desired jitter pattern. A serial number is printed on each card. The accuracy of the pattern is then read and verify on our Mag3x magstripe analyzer. The Mag3x can accommodate virtually any size of card up to airline ticket size, 3.25-inch x 8-inch (83mm x 203mm). Unique types of test cards can be produced on special order. High or low coercivity magnetic test cards can be programmed with specific jitter, amplitude, density, parity errors, LRC errors, etc.

## When to Use Test Cards

Test cards are valuable for:

- verifying your readers meet ISO specifications
- testing magnetic card readers
- testing POS terminals
- testing ticket dispensing equipment
- testing ATM's
- providing a standard of comparison for testing:
  - service bureau card-processing equipment
  - swipe-based and motorized card encoders
- engineering development of cards readers/writers
- checking power supplies, read circuitry, heads, mounts, and card transport mechanisms
- checking for catastrophic failure and gradual degradation of readers in the field

# Types of Test Cards

## TC-JS Jitter Test Card

These are standard jitter test cards with one jitter spike placed at any specified location after the beginning of the start sentinel (default = 10 bits). The TC-JS card is especially useful for engineering tests.

## TC-JT Jitter Test Card

These are standard jitter test cards with a band of jitter starting at any specified location after the beginning of the start sentinel (default = 10 bits). Jitter is present on both 1's and 0's with different combinations of data before and after the jittered bit. Virtually all data dependencies are represented. These data dependencies allow full exercise of the analog electronics and F2F decoder in your card readers. Bit-to-bit jitter as well as subinterval jitter is tested. The TC-JT card is excellent for production testing of card readers as well as general engineering use. You can quickly check the amount of jitter your readers will tolerate.

## TC-P Jitter Test Card (Near Perfect)

This is a near perfect card, that is, one with little or almost no jitter. This card is ideal for testing the level of jitter inherent in a magnetic card reader. This inherent jitter is caused by motor, gear, belt and bearing noise, as well as head vibration and imperfections in the read circuit. Because the card's jitter is virtually zero, all jitter measured from the reader (checked by a timing analyzer or jitter tester) is contributed by the reader itself. This is very good during design qualification/debugging.

## TC-JI Jitter Test Card (Maximum ISO Jitter)

This is a test card with the maximum jitter allowed by ISO 7811/2 & 7811/6 for a "returned" (used) card. It has 15% bit-to-bit jitter and 30% subinterval jitter.

## TC-JN Jitter Test Card (New Card Jitter)

Simulates a brand new card.

## TC-A Amplitude Test Card

These are standard amplitude test cards with a specified signal strength, $U_R$, (in the range of approximately 60% to 120%). This card is valuable for production or engineering testing.

## TC-D Unique Data Card

These are special cards with unique data (all 1's, all 0's, unique densities, parity or LRC errors, density errors, etc.)

## TC-B Simulated Abused Card

These are cards that simulate cut, abraded, scratched, warped, amplitude variations, etc.) They are generally used to compare the performance of one card reader against another.

# Secondary Reference Cards

## RM-7811-2 Calibration Card, Loco

Low Coercivity Calibration Card, Q-Card/PTB* Calibrated, ISO ID1 size.

## RM-7811-6 Calibration Card, Hico

High Coercivity Calibration Card, Q-Card/PTB* Calibrated, ISO ID1 size.

# Information Necessary to Process Your Order

- Card size: Normal ISO ID1 (CR80), thin ID1, ATB (airline ticket), etc.
- Card material: Normal ISO plastic PVC or paper.
- Track location: Normal ISO track, 1,2, 3 or other nonstandard track location.
- Stripe coercivity: Normal ISO 300 or 2750 Oersted, or other nonstandard coercivity such as 3600 Oe., etc.
- Signal amplitude: Normal ISO amplitude (generally 0.6-1.2 Ur) or other nonstandard amplitude.
- Jitter: Bit-to-bit jitter and subinterval jitter (can be specified as minimum jitter or up to about 23-25%).
- Data format: Normal ISO IATA, ABA, THRIFT format, or other nonstandard format.
- Data content: Normally a "0123456789" repeating pattern is encoded; other patterns can be provided.
- Data errors: ISO parity and LRC errors can be provided.
- Density: Standard ISO 75/210 BPI (3/8.3 BPMM) other nonstandard densities can be provided.
- Start/Stop sentinel location.

* Q-Card has assumed responsibility for providing secondary reference cards in compliance with both ISO/IEC 7811-2:2006 low coercivity recording techniques and ISO/IEC 7811-6:2006 high coercivity recording techniques.

Q-Card has transferred the technology used to produce the official magnetic stripe reference cards from Physikalisch-Technische Bundesanstalt (PTB), which has ceased to offer these services.

Reference cards contain a magnetic stripe that produces a known amplitude at saturation. These cards can be used to calibrate magnetic stripe analyzers, which are needed to verify quality during the manufacturing process of cards and tickets that include a magnetic stripe, such as credit cards, hotel key cards and transit tickets.

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