

MODEL 7104USB-X414 FULL STRIPE INSERTION TWO TRACK MAGNETIC STRIPE CARD READER WITH LIGHTED CARD SLOT

Description:

The Model 7104USB-X414 Magnetic Stripe Reader is an OEM card reader with a USB (Universal Serial Bus) interface and four Red LED's to light the card slot for easy card insertion. The unit reads data encoded on ABA Track #1 and Track #2 of the magnetic stripe on ISO standard credit cards and AAMVA format Drivers Licenses and State ID cards.

The Model 7104USB-X414 is a right-hand full-stripe insertion reader, i.e., if the credit card is oriented horizontally with its magnetic stripe facing up, then the stripe is to the right. The unit is configured for read on withdrawal. Host control of the card reader is fully compatible with the standard USB interface protocols. On power-up, the card reader configures itself for a card read in accordance with the fixed operating software, where upon a card read, the card reader sends the Track One and Track Two read data with/without transmission headers (optional) and followed by an error code (if applicable) via the USB interface.

The 7104USB-X414 card reader is capable of software reprogramming after the card reader has been shipped. This means that changes or options can be made to the software without purchasing new card readers and without extensive down time.

Data Transmission & Error Codes:

The Model 7104USB-X414 sends the following string of ASCII characters following a card read:

The transmission header ASCII "!T_", where "_" is a space. The data string "dddddd" is the encoded Track One data read from the magnetic stripe card. The Start Sentinel, End Sentinel, and LRC Character are not transmitted.

If valid Read : !T aaaaaaaaaaaaa (for Track One)

If Invalid Read: !T_aaa*a*a_?e

The transmission header ASCII "&T_", where "_" is a space. The data string "dddddd" is the encoded Track Two data read from the magnetic stripe card. The Start Sentinel, End Sentinel, and LRC Character are not transmitted.

If valid Read : &T bbbbbbbb

If Invalid Read: &T bbb*bb*b_?e (for Track Two)

During transmission of card data, Track One is sent first followed by a (CR) (LF), then Track Two data is sent also followed by a (CR)(LF).

!T aaaaaaaaaaaaaaaaaaaaaaaaaaaaa (where "a" = alpha data)
&T bbbbbbbbbbbbbbbb (where "b" = BCD data)

If a parity error is detected in any character read, that character is replaced by the ASCII "*" in the data string. Any read errors are indicated in the transmission trailer ASCII "e", where "e" is an error code represented by one of the following ASCII characters.

<u>e</u>	<u>Error Condition</u>
B	Blank card (no flux reversals)
Z	All clocking bits
S	No Start Sentinel
E	No End Sentinel
L	Bad LRC Character
P	Parity error
#	No Card Read Since Power-up

The above error codes are listed in order of priority. Codes B, Z, and S are never preceded by card data while codes E, L and P are always preceded by card data. If a card read is invalid because it is incomplete (i.e., card stops before end of encoded data), the data characters transmitted are valid unless replaced by "*".

Host Commands:

ID Command: Sending the command "ID" results with card reader sending it's Model and software version. "Xico 7104USB-X414 21-302 v1.01 Copyright 2004".

LED Commands:

L0 = LED'S OFF

L1 = LED'S ON

L2 = AUTO MODE (Default Mode)

The Red LED's are turned on with no card in slot. When a card is inserted into the card slot and opens the rear card detect, the LED's turn off. When the card is removed (rear detect closed) the LED's will turn back on. Each command is acknowledged by the transmission of a "^", followed by a (CR)(LF).

Header/No Header Commands:

H0 = No Headers (Either Tracks)

Track One: aaaaaaaaaaaaaaaaaaaaaaa

Track Two: bbbbbbbbbbbbbbb

H1 = Headers (both tracks) (Default Mode)

Track One: !T aaaaaaaaaaaaaaaaaaaaaaa

Track Two: &T bbbbbbbbbbbbbbb

Each command is acknowledged by the transmission of a “^”, followed by a (CR)(LF).

Track Enable Commands:

E1 = Enable Track One only

E2 = Enable Track Two only

E3 = Enables Track One and Track Two (Default Mode)

Each command is acknowledged by the transmission of a “^”, followed by a (CR)(LF).

Watch Dog (Reset) Command:

WD = Watch Dog circuit test command. The microprocessor has an internal Watch Dog circuit that will automatically reset the microprocessor if it should stop computing. (power brown outs, etc.). This can be used by the host software to reset the card reader should it be desired. (Note: The card reader will be reset to its DEFAULT settings).

The “WD” command will respond with a “#”, meaning the microprocessor has been reset.

Card Reader Specifications:

- Interface: USB 1.1 Compliant
- Read Speed: 1.6 to 40 IPS
- Card Thickness: 0.021 to 0.035 inches
- Power: +5VDC, ±10% (Regulated) drawn from the USB Bus
- Warranty: One year
- Head Life: Min. 500,000 passes
- Dimensions: L: 3.8” x W: 4.1” x H: 1.3”
- Material: Clear Polycarbonate (94V-1)
- Operating Environment: 0° to 55° C



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USB Models

The Xico 7100 USB interface is Version 1.1 compliant and is an HID device. For enumeration phase the following data is needed:

VID = 0C04h	Vendor ID
PID = 01C0h	Product ID
RID = 2	Report ID for transmitted data

Data sent from the Xico reader will be found in endpoint 1 (Interrupt).
Commands sent to the Xico reader are sent from endpoint 0 (Control) using a Set Feature command