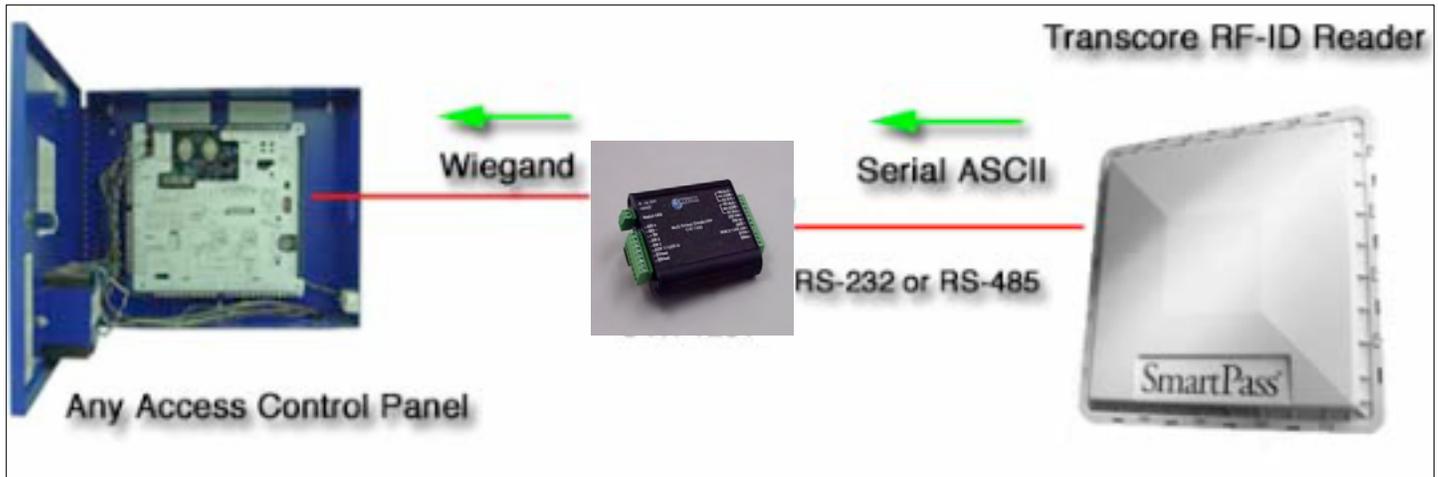




CVX-1301

CVX-1301 System Integrator / OEM Application Note



CVX-1301 Programmable Transcore Format Converter

This application note covers the CVX-1301 programmable converter functions. The Programmable converter mode allows field configuration of the Serial Transcore to Binary Wiegand conversion process.

This document is an addendum to the Wiring diagram and specification sheet for the CVX-1201. Please refer to those documents for electrical connections and settings for standard conversion processes. The CVX-1301 standard converter processes are available in the CVX-1301.

The programmable converter process will handle most standard conversions from Transcore Serial data to Wiegand data. Some applications may require specialized processing of data that exceeds the capabilities of the CVX-1301 and a customized solution may be required. Contact Cypress Computer Systems for special converter applications.



CVX-1301 v1.00 290622
Firmware CVX-1301 >= v3.00
MLC-9001® Compliant



#	DIP Switch Setting								Application			
									Input		Output	
	1	2	3	4	5	6	7	8	Interface	Format	Interface	Format
64							X		Programming Mode			
65	X						X		Run Programmed Converter Process			
66		X					X		Cloning Mode Source			
67	X	X					X		Cloning Mode Destination			
68			X				X					
69	X		X				X					
70		X	X				X					
71	X	X	X				X		RS-232 (9600)	TransCore	Wiegand	26 bit
72				X			X		RS-232 (9600)	TransCore	Wiegand	Xico 6
73	X			X			X		RS-232 (9600)	TransCore	Wiegand	37
74		X		X			X		RS-232 (9600)	TransCore	Wiegand	26
75	X	X		X			X		RS-232 (9600)	TransCore	Wiegand	26 (9117)
76			X	X			X		RS-232 (9600)	TransCore	Wiegand	26 (9161)
77	X		X	X			X		RS-232 (9600)	TransCore	Wiegand	37
78		X	X	X			X		RS-232 (9600)	TransCore	Wiegand	37
79	X	X	X	X			X		RS-232 (9600)	TransCore	Wiegand	26 (9161B)
80					X		X					
81	X				X		X					
82		X			X		X					
83	X	X			X		X					
84			X		X		X		RS-232 (9600)	TransCore 26b	Wiegand	26 bit
85	X		X		X		X		RS-232 (9600)	TransCore	Wiegand	26 bit
86		X	X		X		X					
87	X	X	X									
88				X	X		X					
89	X			X	X		X					
90		X		X	X		X					
91	X	X		X	X		X					
92			X	X	X		X					
93	X		X	X	X		X					
94		X	X	X	X		X					
95	X	X	X	X	X		X					

DIP Switch 8 turns on Wiegand/Strobed Output pullup Resistors

CVX-1301 - Functionality and Mode Settings

Programming Mode (Setting #64) - With the DIP switch set to Programming Mode , the CVX-1301 can be configured through the RS-232 port. Various settings that define the conversion process can be entered using the interactive text menu.

Run Mode (Setting #65) - The CVX-1301 will process data according to the saved parameters.

Cloning Mode Source (Setting #66) - Used for duplicating parameters to another converter. The CVX-1301 will Transmit the stored parameter data to another converter.

Cloning Mode Destination (Setting #67) - Used for duplicating parameters to another converter. The CVX-1301 will Receive the stored parameter data from another converter

To program the converter manually, a serial terminal program such as Hyperterminal will be required. Connect RX, TX and Gnd to the terminal com port. Set to 9600,8,N,1, no handshaking. Set DIP Switch to Setting #64 and connect the terminal to the CVX-1200 serial port.

A very rustic text menu interface will allow you to set the various parameters.

Additionally, There are two ways to save and load parameters.

1. The parameters can be loaded and saved as a simple text file of about 100 bytes long. This will allow additional converters to be programmed without having to enter each setting manually.
2. The cloning function can be used to copy the parameters directly from one converter to another.

CVX-1301 Programmable Parameters

The CVX-1301 has these programmable settings:

1 Default process can be defined

10 different prefix codes can be assigned to 255 possible facility codes. Some Wiegand output formats may not support the full 0 - 255 range of facility codes. For example, the 37 bit format only supports 0 to 16 as valid facility codes.

A specific ASCII decoding processes can be defined for each prefix code. There are 7 decode processes available

26 or 37 bit Wiegand output can be selected.

Duplicate reads can be suppressed.

CVX-1301 - Programming The System

The top level menu:

```
ProjectList.cwk
Main Menu
1. Read Parameters
2. Set Parameters
3. Load Parameter Block
4. Save Parameter Block
5. Erase Memory
```

Numerical Menu choices are selected by entering the number associated with the menu item. Parameters are typed on one line and terminated with the <Enter> key.

Description on Main Menu options

1. Read Parameters, reads out parameter block in readable form.
2. Set Parameters, user interface to set individual parameters in converter. Text strings are entered to define the parameters.
3. Load Parameter Block, Reads ASCII Text block from serial port. Used to clone converters after programming parameters have been established.
4. Save Parameter Block, Sends ASCII Text block to the serial port. Used to save parameters to an ASCII file once they have been configured.
5. Erase Memory, Erase parameter memory to blank condition.

Entering the parameters:

Here is a sample parameter block after selecting Option (1) Read Parameters: (The parameters have been previously entered)

```
1. Output Format = 1
2. Pcode1 = HCTR12301
3. Pcode2 = DNT.00002
4. Pcode3 = GSTA00100
5. Pcode4 = X
6. Pcode5 = X
7. Pcode6 = X
8. Pcode7 = X
9. Pcode8 = X
10. Pcode9 = X
11. Pcode10 = X
```

In this instance, there are 3 prefix codes defined, with a 26 bit output for the converter. 3 different ASCII numerical conversions are also defined, one for each prefix code.

Up to 10 prefix codes can be defined. Prefix code 1 also defines the default process.

We will now describe in detail how to enter text strings that define the parameters

CVX-1301 - Programming The System

The Set parameters option will display the current setting for each parameter. A parameter can be changed by entering new data. If the existing parameter is OK, the <Enter> key can be pressed and no changes will be made to the parameter.

Note: Remember how we said this is a very “Rustic” interface? If a mistake is made during data entry, you will have to start the Set Parameters option again and reenter the parameter. The Backspace key does not function with this interface. It is a straight text string and then <Enter> .

Setting the parameters - OUTPUT FORMAT

In this example, the Set Parameters option has been selected from the main menu.

```
Main Menu
1. Read Parameters
2. Set Parameters
3. Load Parameter Block
4. Save Parameter Block
5. Erase Memory
```

This menu dialog is expecting a string that determines the Wiegand output bit format and how the converter will handle duplicate reads.

There are 2 settings for Menu Option 1.

The first setting defines the Wiegand bit format that will be output by the converter

```
2
1. Output Format = 01
Enter new Parameter value: _
```

01 = 26 Bit Wiegand (9161 format)
02 = 37 Bit Wiegand (9164 format)

The Second setting for Menu Option 1 will suppress repeat reads from the Transcore reader. Enter a 01 as the second parameter to suppress duplicate reads. Enter 00 as the second parameter to allow duplicate reads.

If the second parameter is not entered, the converter will default and allow duplicate reads.

Here are a couple of examples:

```
1. Output Format = 01
Enter new Parameter value: 0100
```

26 bit Wiegand output format, allow duplicates

```
1. Output Format = 01
Enter new Parameter value: 0101_
```

26 bit Wiegand output format, suppress duplicates

Duplicate read filter operation:

If duplicate reads are suppressed, the converter will not output Wiegand data from the same badge while it is in the reader field. There is a 10 second time limit, at which time the duplicate badge will be processed.

New badges will always be processed immediately.

Setting the parameters - PREFIX CODES (PCODES)

1. Output Format = 01
Enter new Parameter value: 01

2. Pcode1 = X
Enter new Parameter value:

There are 10 possible Prefix codes that can be defined. Each prefix code can be associated with a facility code and an ASCII to Wiegand decoding process.

All ten Pcodes are defined in the same manner.
Pcode1 has the additional function of defining the Default process.

These are fixed field strings, so leading zeros must be included to have total string = 9 characters.

The Pcode definition string is a 9 byte long fixed field:

ABCD12301<Enter>

ABCD = Alpha Prefix code i.e. HCTR, DNT. etc. Fixed at 4 characters

123 = Facility code to be assigned. 001, 123, etc. Max value of 255.

01 = ASCII Decode process. Where the badge number is pulled from the incoming string.

If a Pcode slot is to be undefined, it can be left blank if nothing has been entered. Otherwise enter any single character ASCII value and press <Enter>

“X” is used in some of the examples.

CVX-1301 - Programming The System

Setting the parameters - PREFIX CODES (PCODES)

The special case of the default process

There are two ways to handle prefix codes that have not already been defined as part of the badge population. The unknown badge can be handled by a default process and result in a Wiegand output, or the unknown badge will not generate any Wiegand output.

If the no output should be generated for unknown prefix codes then the default process can be set as "undefined". The default process (Pcode1) is set as undefined by entering a single character entered as the Pcode 1 string. Then if the prefix code of a badge does not match a defined code then there will be no Wiegand output generated.

If the default process is defined. i.e. 4 alpha chars are entered, then the default process will be applied to any incoming strings that do not have an assigned prefix code.

Examples:

Pcode1=X No default process, if the incoming string does not have a matching prefix code programmed, then no output will result.

Pcode1=WXYZ01501 The default process will generate a facility code off 15 and use the ASCII decode process 01. The 4 letter combination is not important, but should be A-Z characters. In this example it is assumed that "WXYZ" will never be a valid prefix code.

Pcode1-HCTR00401 The HCTR process and the default process will be the same. If the HCTR string comes in it will be assigned a facility code of 4 and use ASCII decode process 01. The default process will generate a facility code of 4 and use the ASCII decode process 01.

The seven different processes are:

00 = Last 5 Half Frame

01 = Last 5 Full Frame

02 = Reserved

03 = Half Frame 5

04 = Half Frame 6

05 = Full Fame 8

06 = Full Frame 16

CVX-1301 - Loading and saving parameters

The parameters can be saved to an external file as an archive record or for setting additional converters to the same configuration.

Saving to a file using Hyperterminal

Select option 4 from the main menu "Save Parameter Block"
The menu should generate a prompt. Don't press any keys yet/.

In Hyperterminal select Transfer- Capture Text. Define a destination file.

Press the enter key and the parameter block will dump.

Now in Hyperterminal select Transfer-Capture Text-Stop to terminate the capture process.

The file is sent and received in alphanumeric ASCII text.

Loading the parameter block to the converter using Hyperterminal

Select option 3, "Load Parameter Block"

The menu should generate a prompt that it is ready to receive data.

In Hyperterminal select Transfer-Send Text File and send the parameter file to the CVX-1301.

Once loaded use the Read parameters function to check your work.

CVX-1301 - Cloning Converter Parameters

The CVX-1301 functions allow one converter to copy its parameters to other converters.

Once parameters have been defined in a converter it can be set as the Cloning "Source" by setting the DIP switch to Setting #66.

The converter to be copied TO should be set as the Cloning "Destination" by setting the DIP switch to Setting #67.

Connect the two converters together by a Null Modem (crossover) connection between their RS232 ports:

Source	Destination
RS232 TX	RS232 RX
RS232 RX	RS232 TX
Ground	Ground

Apply power to both converter at the same time.

The Diagnostic LED will illuminate with a solid green indication.

After a few seconds, both converters Diagnostic LED's should flash green slowly if the process completed correctly.

The Destination converter will now have the parameters from the Source converter.

CVX-1301 - Examples

These strings will emulate the CVX-1301 9161 format (Setting 76)

```
1. Output Format = 1
2. Pcode1 = XXXX01505
3. Pcode2 = HCTR00105
4. Pcode3 = GSTA00304
5. Pcode4 = ROCC00404
6. Pcode5 = CCOS00504
7. Pcode6 = KWHQ00606
8. Pcode7 = X
9. Pcode8 = X
10. Pcode9 = X
11. Pcode10 = X
```