



ActiveX Control and Demo Program

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1 Overview

The demo program uses an ActiveX control to demonstrate the protocol used with the TSL desktop reader. The demo program should be used in conjunction with the provided Desktop Reader Programming Guide to experiment with the command set. Development can be done either using the control in your own applications or using the source as a basis for your own code. The source code is installed as a zip file in the demo application's directory.

2 Demo Program

Please refer to the getting started guide to use the Demo program.

The demo program allows the parameters for a packet (Destination, Command, Option, and Data) to be specified and then sent to the reader using the send button. Any received data or errors are shown in the received data text box.

The last sent packet, constructed from the parameters, and the last received packet are shown in the text boxes at the bottom of the form.

The history button displays a second form where the packets sent and received are displayed in sequence.

The Commands menu and the commands drop down list holds a list of predefined commands. Selecting a command fills in the required fields. These commands are loaded from the command.txt file in the application's directory. Additional commands can be added to the file. Each command must be on a single line with the field names as below. The "Refresh List" option on the "Commands" menu reloads the list from the Commands.txt file

Name: **<name to display>**; DST: **<destination hex>**; CMD: **<command hex>**;
OPT: **<option byte hex>**; DATA: **<data hex>**;

Figure 1. Format for commands in the Commands.txt file

3 ActiveX Control

The active control has a property to match each parameter of the packet. When it is enabled it opens the specified comm port and when it is disabled it closes the comm port. Commands are sent using the DoCommand or DoCommandParam methods. You can poll the Busy flag to determine when the command has completed or respond to the Done event. Once the busy flag is clear the receive properties can be read.

3.1 Enumerations

Public Enum **TSLRdrError**

ERR_NONE	no error occurred
ERR_COMM	the comm. port returned an error
ERR_PKT	the received packet is invalid
ERR_PORT	<not used>
ERR_LAST	For errorToString (returns the last error occurred)
ERR_TIMEOUT	didn't receive a full packet in the timeout defined
ERR_CANCEL	the command was cancelled

End Enum

3.2 Events

Done(ErrorCode As TSLRdrError)

Raised after a command has completed either by timing out or receiving a valid packet. ErrorCode can be used to determine if the command was a success and the control properties can be read to determine the command sent and the return values.

3.3 Properties

Destination Read/Write Integer

The destination value for the command. Limited to a value between 0 and 255. See the Command Set Documentation. Writing to the property while the control is busy causes an error.

Command Read/Write Integer

The command value for the command. Limited to a value between 0 and 255. See the Command Set Documentation. Writing to the property while the control is busy causes an error.

OptionTX Read/Write Integer

The option value for the command. Limited to a value between 0 and 255. See the Command Set Documentation. Writing to the property while the control is busy

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causes an error.

Option RX Read Only Integer

The option value as received from the last received packet. See the Command Set Documentation.

DataTX Read/Write String

The binary data for the command as a string. See the Command Set Documentation. Writing to the property while the control is busy causes an error.

DataRX Read Only String

The data section of the last received packet in binary. See the Command Set Documentation.

Timeout Read/Write Integer

The period in milliseconds that the control will wait for a response from the reader before it raises the Done(ERR_TIMEOUT) event when no packet is received.

PortNumber Read/Write Integer

The comm. port on the machine to which the desktop reader is connected. Values between 1 and 16 are valid. Other port values can be supported, contact support for additional information.

NB. When using a virtual comm port the port number the USB reader uses can be changed using the advanced properties on the comm port in the device manager.

LastPacketReceived Read Only String

The last valid packet that was received by the control as a binary string.

LastPacketSent Read Only String

The last packet sent by the control as a binary string.

Busy Read Only Boolean

A flag that is set after a command is sent and cleared either after receiving a valid command or timing out.

LastError Read Only TSLRdrError

The last error as returned by the Done event.

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Enabled Read/Write Boolean

Set to true for the control to connect to the specified comm. port, false to close the port.

3.4 **Methods**

DoCommand()

Send the command as specified by the control properties.

DoCommandParam(Dest As Integer, Cmd As Integer, Opt As Integer, data As String)

Sets all the properties for the control according to the parameters then execute the command.

CancelCommand()

Abort the currently executing command. Sets LastError to ERR_CANCEL and raises Done(ERR_CANCEL).

ErrorCodeToString(Optional ErrVal As TSLRdrError = ERR_LAST) As String

Returns a text string equivalent to the ErrVal error code. If no error code is provided returns the last error occurred.

3.5 **Raised Errors**

The following errors may be raised by the control.

Error Number	Error Text	Description or error
1	Error Opening Port	A runtime error occurred while attempting to open the port
2	Error Closing Port	A runtime error occurred while attempting to close the port
3	Cannot Set Property While Busy	An attempt was made to change a property while the reader was busy
4	Port is already open	An attempt was made to open the already open port

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3.6 Notes

DataRx, DataTX

These properties are of type string to allow the data section to contain more than one byte. When setting the values a packet should be built using the chr(number) function. Automatic type conversion in Visual Basic can lead to some unexpected results. For example to send the data packet 00FEDCBA98_{hex} to write FEDCBA98_{hex} to block 0 use:

```
DataTX = chr(0) & chr(&HFE) & chr(&HDC) & chr(&HBA) & chr(&H98)
```