

SavoySecsl ActiveX Control
User Guide

1 Revision History

Version	Date	Name	Description
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3 SavoySecsI

SavoySecsI control is an assistant product to develop SEMI E4 (SECS-I) compliant communication application software. SavoySecsI control can be used for either equipment side development or host side development. Usually SavoySecsI control will be used with SavoySecsII control.

Properties

Name	Description
Appearance	Gets or sets the value that determines the appearance of a SavoySecsI control.
BaudRate	Gets or sets the transfer speed through serial cable.
BorderStyle	Gets or sets whether the SavoySecsI control has a border.
Connect	Gets or sets the serial connection status.
DeviceID	Gets or sets the device ID.
IniFileName	Gets or sets INI file name to read/write settings.
IniSection	Gets or sets section name in INI file to read/write settings.
Log	Gets or sets whether logging is enabled.
LogBakCount	Gets or sets the number of back-up file for logging.
LogFileName	Get or sets the log file name.
LogSize	Gets or sets the log file size in kilobyte.
LogVerbose	Get or sets whether logging for detailed part is enabled.
Master	Gets or sets whether SavoySecsI control acts as master or slave.
MSEC	Gets or sets whether Mitsubishi SECS protocol is enabled.
PortNumber	Gets or sets the serial port number.
Retry	Gets or sets the number of attempt in case of send error.
T1	Gets or sets the T1 time out in milliseconds.
T2	Gets or sets the T2 time out in milliseconds.
T3	Gets or sets the T3 time out in milliseconds.
T4	Gets or sets the T4 time out in milliseconds.

Methods

Name	Description
AboutBox	Opens version information dialog box on the screen.
LoadIniFile	Loads settings from INI file and initialize properties.
Send	Send specified SECS-II message.
Setup	Opens setup dialog box on the screen.

Events

Name	Description
Problem	Notifies that error has occurred.
Received	Notifies that SavoySecsI control received SECS-II message.
Sent	Notifies that SECS-II message has been sent.

3.1 Properties

3.1.1 Appearance

Gets or sets the value that determines the appearance of a SavoySecsI control.

Value	Description
0	Flat
1	Etched

Syntax

Visual Basic 6.0

```
Appearance As Integer
```

Visual C++ 6.0

```
short GetAppearance()  
void SetAppearance(short)
```

Example

Visual Basic 6.0

```
.Appearance = 0 ' flat  
.Appearance = 1 ' sunken
```

Visual C++ 6.0

```
m_ctrl.SetAppearance(0); // flat  
m_ctrl.SetAppearance(1); // sunken
```

Remarks

Persistent property.

See Also

3.1.2 BaudRate

Gets or sets the transfer speed through serial cable.

Value	Description
300	300 bits per second
600	600 bits per second
1200	1200 bits per second
2400	2400 bits per second
4800	4800 bits per second
9600	9600 bits per second
19200	19200 bits per second
38400	38400 bits per second
76800	76800 bits per second

Default value is 9600.

Syntax

Visual Basic 6.0

BaudRate As Long

Visual C++ 6.0

```
long GetBaudRate()  
void SetBaudRate(long)
```

Example

Visual Basic 6.0

```
.PortNumber = 0  
.BaudRate = 9600  
.Retry = 3  
.Connect = True
```

Visual C++ 6.0

```
m_ctrl.SetPortNumber(0);  
m_ctrl.SetBaudRate(9600);  
m_ctrl.SetRetry(3);  
m_ctrl.SetConnect(true);
```

Remarks

Persistent property.

See Also

3.1.3 BorderStyle

Gets or sets whether the SavoySecsI control has a border.

Value	Description
0	No border
1	Fixed single border

Syntax

Visual Basic 6.0

```
BorderStyle As Integer
```

Visual C++ 6.0

```
short GetBorderStyle()  
void SetBorderStyle(short)
```

Example

Visual Basic 6.0

```
.BorderStyle = 0 ' no border  
.BorderStyle = 1 ' with border
```

Visual C++ 6.0

```
m_ctrl.SetBorderStyle(0); // no border  
m_ctrl.SetBorderStyle(1); // with border
```

Remarks

Persistent property.

See Also

3.1.4 Connect

Gets or sets the serial connection status. If Connect property is set to true, SavoySecsI control will attempt to open specified serial port. If serial port has not been opened, Connect property will be set to false.

Syntax

Visual Basic 6.0

```
Connect As Boolean
```

Visual C++ 6.0

```
BOOL GetConnect()  
void SetConnect(BOOL)
```

Example

Visual Basic 6.0

```
.PortNumber = 0  
.BaudRate = 9600  
.Retry = 3  
.Connect = True
```

Visual C++ 6.0

```
m_ctrl.SetPortNumber(0);  
m_ctrl.SetBaudRate(9600);  
m_ctrl.SetRetry(3);  
m_ctrl.SetConnect(true);
```

Remarks

See Also

3.1.5 DeviceID

Gets or sets the device ID. Device ID is 15 bits starting at second bit of SECS-II header.

For SECS-I following header structure is used.

Byte	Description
1	R Device ID
2	
3	W Stream
4	Function
5	E Block number
6	
7	Source ID
8	
9	Transaction ID
10	

Syntax

Visual Basic 6.0

DeviceID As Long

Visual C++ 6.0

```
long GetDeviceID()
void SetDeviceID(long)
```

Example

Visual Basic 6.0

```
.DeviceID = 1
```

Visual C++ 6.0

```
m_ctrl.SetDeviceID(1);
```

Remarks

Persistent property.

See Also

3.1.6 IniFileName

Gets or sets INI file name to read/write settings. If INI file name is either full path name or containing relative reference of folder name, INI file will be created and read in such location. Otherwise, INI file will be created in Windows OS system folder. For this reason, it is highly recommended using with folder name. If current directory is the location, add “.” at the beginning.

Either “/” (slash) or “\” (back slash) can be used for separator of folder name.

Syntax

Visual Basic 6.0

```
IniFileName As String
```

Visual C++ 6.0

```
CString GetIniFileName()  
void SetIniFileName(LPCTSTR)
```

Example

Visual Basic 6.0

```
.IniFileName = “./Savoy.ini”
```

Visual C++ 6.0

```
m_ctrl.SetIniFileName(“./Savoy.ini”);
```

Remarks

Persistent property.

See Also

3.1.7 IniSection

Gets or sets section name in INI file to read/write settings. If multiple SavoySecsI control were embedded in one project, it is possible to share same INI file by changing section name.

Default setting is "SavoyComm".

Syntax

Visual Basic 6.0

```
IniSection As String
```

Visual C++ 6.0

```
CString GetIniSection()  
void SetIniSection(LPCTSTR)
```

Example

Visual Basic 6.0

```
.IniSection = "Host" ' [Host] section
```

Visual C++ 6.0

```
m_ctrl.IniSection("Host"); // [Host] section
```

Remarks

Persistent property.

See Also

3.1.8 Log

Gets or sets whether logging is enabled. If this property is enabled, processing information will be written in log file. If this property is disabled, nothing will be written in log file.

Value	Description
True	Write to log file
False	Do not write log file

Syntax

Visual Basic 6.0

```
Log As Boolean
```

Visual C++ 6.0

```
BOOL GetLog()  
void SetLog(BOOL)
```

Example

Visual Basic 6.0

```
.Log = True
```

Visual C++ 6.0

```
m_ctrl.SetLog(true);
```

Remarks

Persistent property.

See Also

3.1.9 LogBakCount

Gets or sets the number of back-up file for logging. If actual file size of log file exceeded LogSize property, SavoySecsI control will rename the file name and make a new empty log file. If number of back-up file reached to the value of LogBakCount property, SavoySecsI control will delete oldest back-up file.

Syntax

Visual Basic 6.0

```
LogBakCount As Integer
```

Visual C++ 6.0

```
short GetLogBakCount()  
void SetLogBakCount(short)
```

Example

Visual Basic 6.0

```
.LogBakCount = 10
```

Visual C++ 6.0

```
m_ctrl.SetLogBakCount(10);
```

Remarks

Persistent property.

See Also

3.1.10 LogFileName

Get or sets the log file name. Log file will be created in current directory.

Syntax

Visual Basic 6.0

```
LogFileName As String
```

Visual C++ 6.0

```
CString GetLogFileName()  
void SetLogFileName(LPCTSTR)
```

Example

Visual Basic 6.0

```
.LogFileName = "Savoy"
```

Visual C++ 6.0

```
m_ctrl.SetLogFileName("Savoy");
```

Remarks

Persistent property.

See Also

3.1.11 LogSize

Gets or sets the log file size in kilobyte. If actual file size of log file exceeded LogSize property, SavoySecsI control will rename the file name and make a new empty log file. If number of back-up file reached to the value of LogBakCount property, SavoySecsI control will delete oldest back-up file.

Syntax

Visual Basic 6.0

```
LogSize As Long
```

Visual C++ 6.0

```
long GetLogSize()  
void SetLogSize(long)
```

Example

Visual Basic 6.0

```
.LogSize = 1024
```

Visual C++ 6.0

```
m_ctrl.SetLogSize(1024);
```

Remarks

Persistent property.

See Also

3.1.12 LogVerbose

Get or sets whether logging for detailed part is enabled.

Syntax

Visual Basic 6.0

```
LogVerbose As Boolean
```

Visual C++ 6.0

```
BOOL GetLogVerbose()  
void SetLogVerbose(BOOL)
```

Example

Visual Basic 6.0

```
.LogVerbose = False
```

Visual C++ 6.0

```
m_ctrl.SetLogVerbose(false);
```

Remarks

Persistent property.

See Also

3.1.13 Master

Gets or sets whether SavoySecsI control acts as master or slave. SEMI E4 defines that equipment side should be master and host side should be slave.

Value	Description
False	Slave
True	Master

Syntax

Visual Basic 6.0

```
Master As Boolean
```

Visual C++ 6.0

```
BOOL GetMaster()  
void SetMaster(BOOL)
```

Example

Visual Basic 6.0

```
.Master = True ' Equipment  
.Master = False ' Host
```

Visual C++ 6.0

```
m_ctrl.SetMaster(true); ' Equipment  
m_ctrl.SetMaster(false); ' Host
```

Remarks

Persistent property.

See Also

3.1.14 MSEC

Gets or sets whether Mitsubishi SECS protocol is enabled.

Value	Description
False	SECS-I
True	MSEC

Syntax

Visual Basic 6.0

```
MSEC As Boolean
```

Visual C++ 6.0

```
BOOL GetMsec()  
void SetMsec(BOOL)
```

Example

Visual Basic 6.0

```
.MSEC = True
```

Visual C++ 6.0

```
m_ctrl.SetMsec(true);
```

Remarks

Persistent property.

See Also

3.1.15 PortNumber

Gets or sets the serial port number. Port number starts at 0. For example, comm #1 is 0, comm. #2 is 1.

Default value is 0.

Syntax

Visual Basic 6.0

```
PortNumber As Integer
```

Visual C++ 6.0

```
short GetPortNumber()  
void SetPortNumber(short)
```

Example

Visual Basic 6.0

```
.PortNumber = 0  
.BaudRate = 9600  
.Retry = 3  
.Connect = True
```

Visual C++ 6.0

```
m_ctrl.SetPortNumber(0);  
m_ctrl.SetBaudRate(9600);  
m_ctrl.SetRetry(3);  
m_ctrl.SetConnect(true);
```

Remarks

Persistent property.

See Also

3.1.16 Retry

Gets or sets the number of attempt in case of send error.

Syntax

Visual Basic 6.0

```
Retry As Integer
```

Visual C++ 6.0

```
short GetRetry()  
void SetRetry(short)
```

Example

Visual Basic 6.0

```
.PortNumber = 0  
.BaudRate = 9600  
.Retry = 3  
.Connect = True
```

Visual C++ 6.0

```
m_ctrl.SetPortNumber(0);  
m_ctrl.SetBaudRate(9600);  
m_ctrl.SetRetry(3);  
m_ctrl.SetConnect(true);
```

Remarks

Persistent property.

See Also

3.1.17 T1

Gets or sets the T1 time out in milliseconds. Default value is 0.5 seconds.

Syntax

Visual Basic 6.0

```
T1 As Long
```

Visual C++ 6.0

```
long GetT1()  
void SetT1(long)
```

Example

Visual Basic 6.0

```
Dim IT1 As Long  
IT1 = .T1
```

Visual C++ 6.0

```
long IT1 = m_ctrl.GetT1();
```

Remarks

Persistent property.

See Also

3.1.18 T2

Gets or sets the T2 time out in milliseconds. Default value is 10 seconds.

Syntax

Visual Basic 6.0

```
T2 As Long
```

Visual C++ 6.0

```
long GetT2()  
void SetT2(long)
```

Example

Visual Basic 6.0

```
Dim IT2 As Long  
IT2 = .T2
```

Visual C++ 6.0

```
long IT2 = m_ctrl.GetT2();
```

Remarks

Persistent property.

See Also

3.1.19 T3

Gets or sets the T3 time out in milliseconds. Default value is 45 seconds.

Syntax

Visual Basic 6.0
T3 As Long

Visual C++ 6.0
long GetT3() void SetT3(long)

Example

Visual Basic 6.0
Dim IT3 As Long IT3 = .T3

Visual C++ 6.0
long IT3 = m_ctrl.GetT3();

Remarks

Persistent property.

See Also

3.1.20 T4

Gets or sets the T4 time out in milliseconds. Default value is 45 seconds.

Syntax

Visual Basic 6.0
T4 As Long

Visual C++ 6.0
long GetT4() void SetT4(long)

Example

Visual Basic 6.0
Dim IT4 As Long IT4 = .T4

Visual C++ 6.0
long IT4 = m_ctrl.GetT4();

Remarks

Persistent property.

See Also

3.2 Methods

3.2.1 AboutBox

Opens version information dialog box on the screen.

Syntax

Visual Basic 6.0
Sub AboutBox()

Visual C++ 6.0
void AboutBox()

Return Value

None.

Example

Visual Basic 6.0
.AboutBox

Visual C++ 6.0
m_ctrl.AboutBox();

Remarks

See Also

3.2.2 LoadIniFile

Loads settings from INI file and initialize properties. If loading was failed, values in persistent resource will be set.

LoadIniFile method probably is called at the beginning of application, since it retrieves saved parameters by Setup method.

Syntax

Visual Basic 6.0

```
Function LoadIniFile() As Boolean
```

Visual C++ 6.0

```
BOOL LoadIniFile()
```

Return Value

Return true if loading was successful. Otherwise return false. If false was returned, IniFileName property or IniSection property might be incorrect.

Example

Visual Basic 6.0

```
Private Sub Form_Load()  
    SwingHsms1.LoadIni  
End Sub
```

Visual C++ 6.0

```
void CxxxView::OnInitialUpdate()  
{  
    ...  
    m_ctrl.LoadIni();  
    ...  
}
```

Remarks

See Also

3.2.3 Send

Send specified SECS-II message.

Syntax

Visual Basic 6.0
Function Send(IpszMessage As String) As Boolean

Visual C++ 6.0
BOOL Send(LPCTSTR IpszMessage)

Argument	Description
IpszMessage	Message to be sent

Return Value

Return true if message was successfully queued. Otherwise return false.

Example

Visual Basic 6.0
SavoyHsms1.Send SavoySecsII1.Msg

Visual C++ 6.0
m_ctrl.Send(m_msg.GetMsg());

Remarks

SavoySecsI control attempts to send message. Actual result of transmission will be reported by Sent event.

If transmission was failed, Problem event with error code 8 (retry over) will occur after the all attempts were failed.

See Also

3.2.4 Setup

Opens setup dialog box on the screen. If user modified parameter and press OK button, data will be written in INI file.

SECS Tab

Item	Description
Comm port #	Serial port number
Baud rate	Communication speed
Retry	Number of retry count
Master	Master (equipment) or slave (host)
Device ID	Device ID
MSEC	Mitsubishi special SECS
T1	T1 timer
T2	T2 timer
T3	T3 timer
T4	T4 timer

Log Tab

Item	Description
Enable logging	True if logging is enabled.
Enable communication log	True if communication logging is enabled.
File name	Log file name.
Number of backup files	Number of backup files.
Maximum size of each file	Size of log file.

Syntax

Visual Basic 6.0
Function Setup(IpszCaption As String) As Boolean

Visual C++ 6.0
BOOL Setup(LPCTSTR IpszCaption)

Argument	Description
IpszCaption	Caption title of dialog box. If this value is NULL or "" (empty) string, the string of IniSection property will be used for caption tile.

Return Value

If user pressed OK button and parameters were saved in INI file successfully, Setup method returns true. If user pressed Cancel button or parameter saving was failed, Setup method returns false.

Example

Visual Basic 6.0
.Setup "SECS-I Configuration"

Visual C++ 6.0
m_ctrl.Setup("SECS-I Configuration");

Remarks

See Also

3.3 Events

3.3.1 Problem

Notifies that error has occurred.

Syntax

Visual Basic 6.0

```
Event Problem(sErrorCode As Integer, lpszAdditionalInfo As String)
```

Visual C++ 6.0

```
void OnProblem(short sErrorCode, LPCTSTR lpszAdditionalInfo)
```

Argument	Description
sErrorCode	Error code (see below)
lpszAdditionalInfo	Additional information Failed message when error code is 8 (retry over).

Example

Visual Basic 6.0

```
Text1.Text = "Error - Code : " + Format$(sErrorCode)
```

Visual C++ 6.0

```
TRACE("Error - Code : %d",sErrorCode);
```

Remarks

Error code	Enumeration	Description
1	ErrorSecsUnexpectedChar	Received unexpected character.
2	ErrorSecsBadLength	Length byte is not correct.
3	ErrorSecsBadSum	Check sum error.
4	ErrorSecsBadParity	Parity error.
5	ErrorSecsBadMultiBlockNumber	Block number in multi-block message is not correct.
6	ErrorSecsBadBlockNumber	Block number is neither 0 nor 1.
7	ErrorSecsNak	Received NAK.
8	ErrorSecsRetry	Retry over.
9	ErrorSecsT4	T4 time out.
10	ErrorSecsT2	T2 time out.
11	ErrorSecsT1	T1 time out.
12	ErrorSecsT3	T3 time out.
13	ErrorSecsBadDeviceID	Device ID mismatched.

See Also

3.3.2 Received

Notifies that SavoySecsI control received SECS-II message.

Syntax

Visual Basic 6.0

```
Event Received(IpszMsg As String)
```

Visual C++ 6.0

```
void OnReceived(LPCTSTR IpszMsg)
```

Argument	Description
IpszMsg	Received message

Example

Visual Basic 6.0

```
With SavoySecsII1
  .Msg = IpszMsg
  If .Stream = 1 AND .Function = 13 Then
    ' S1F13
    ...
  End If
End With
```

Visual C++ 6.0

```
m_msg.SetMsg(IpszMsg);
if(m_msg.GetStream()==1 && m_msg.GetFunction()==13)
{
  // S1F13
  ...
}
```

Remarks

See Also

3.3.3 Sent

Notifies that SECS-II message has been sent.

Syntax

Visual Basic 6.0

```
Event Sent(IpszMsg As String)
```

Visual C++ 6.0

```
void OnSent(LPCTSTR IpszMsg)
```

Argument	Description
IpszMsg	Sent message

Example

Visual Basic 6.0

```
SavoySecsI1.Msg = IpszMsg
```

Visual C++ 6.0

```
m_msg.SetMsg(IpszMsg);
```

Remarks

See Also