



C++ Software Development Kit

How to Use StarIO in C++

Thermal Line Mode Printing

This SDK contains a C++ Visual Studio 2005 project for use on Microsoft Windows XP, Vista, 7, 8, & 8.1. Modern UI and Windows RT are not supported.

<p>Compatible Star Micronics Printer Models:</p> <ul style="list-style-type: none"> • FVP10 (Ver.1.0 or later) • HSP7000 (Ver.1.0 or later) • TSP650 (Ver.2.0 or later) • TSP650II (Ver.1.0 or later) • TSP700II (Ver.2.0 or later) • TSP800II (Ver.1.0 or later) • TUP500 (Ver.1.0 or later) • TUP900 (Ver.1.2 or later) • SP700 (Ver.1.0 or later) <p>Works with these DK-AirCash Model Series:</p> <ul style="list-style-type: none"> • SAC10 (Ver.1.0 or later) 	<p>Supported Interfaces:</p> <ul style="list-style-type: none"> • Serial • Parallel • USB • Ethernet • Bluetooth <p>Functions Include:</p> <ul style="list-style-type: none"> • Print Sample Receipt (EN and JP) • All 1D Barcodes • All 2D Barcodes • Change Font • Cut • Feed • Code Pages • Getting Status • DK-AirCash
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Requirements: Visual Studio 2005 or later and .NET Framework 2.0 or later.

NOTE:

- This sample project contains StarIO components from StarIO Version 2.0.0.0.
Details of StarIO(Restrictions, Precautions) are found in the manuals located here:
English : <..\StarIO_help\en\StarIO\index.htm>
Japanese : <..\StarIO_help\ja\StarIO\index.htm>
- This sample project provides source code which tells how to use StarIO components.
Executable for 32/64-bit can be built by this project.
- Executable files for 64-bit cannot be executed in a 32-bit environment.
- When you open this project in Windows Vista, 7, 8 or 8.1 , execute Visual Studio as an administrator before opening the sln file. You can achieve this by right-clicking on the Visual Studio 2005 icon and clicking "Run as administrator" in the menu displayed.




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About this Manual

This manual is designed to help you understand StarIO and how to build a C++ application to interact with Star Micronics Thermal Line Mode Printers. It is important to understand the basics of the C and C++ language. Although this SDK is for the programming language C/C++, there are other SDKs available at our website in the Developers section. Check the Developers section of our site for the newest SDKs, technical documentation, FAQs, and much more additional resources.

Key Legend:

<i>Warning</i>		Explains potential issues
<i>Avoid Doing This</i>		Explains things not to do
<i>Note</i>		Provides important information and tips

CAUTION:

- The information in this manual is subject to change without notice.
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Star Printer Compatibility Chart

Star Printer	SampleReceipt	SampleReceipt (Error Recovery)	Get Parsed Status	Check Block - ETB	Kick Cash Drawer	1D Barcodes	2D Barcodes	Code Page	Font	Feed	Auto Cutter	Reset Printer *3	DK-AirCash
FVP10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
TSP650	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	
TSP650II	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
TSP700II	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
TSP800II	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
TUP500	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
TUP900	✓	✓	✓	✓	✓	✓	✓ *1	✓		✓	✓	✓	
SP700	✓	✓	✓	✓	✓			✓	*2	✓	✓	✓	
HSP7000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
SAC10			✓		✓								✓

*1 QR Code is not supported. PDF417 is available from F/W ver.3.1 or later.

*2 Sample code of this SDK is for Thermal Printer command.

When use SP700, please refer "Star Impact Printer Command Specifications".

*3 When using a serial interface, "ResetDevice" function always returns "True".

When using a Ethernet or Bluetooth interface, "ResetDevice" function is not supported.

How to compile and run the C++ SDK

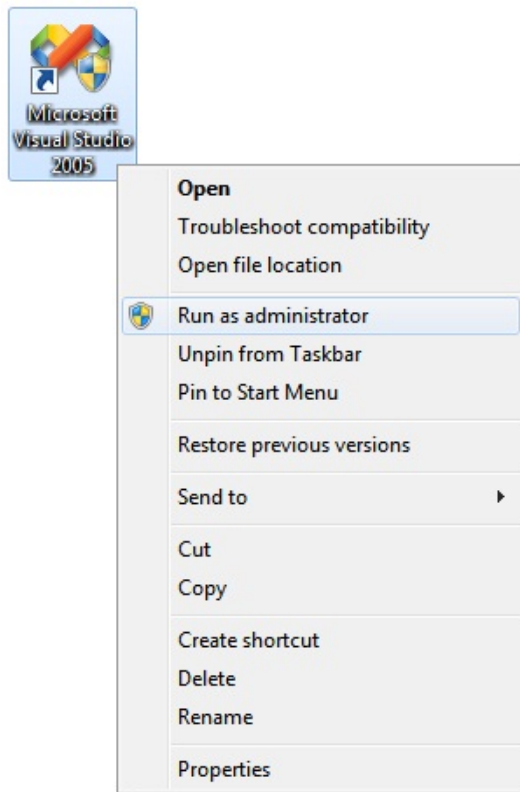
This section will explain:

1. How to open the Visual Studio 2005 C++ SDK project.
2. Compiling the project.
3. Running the project.

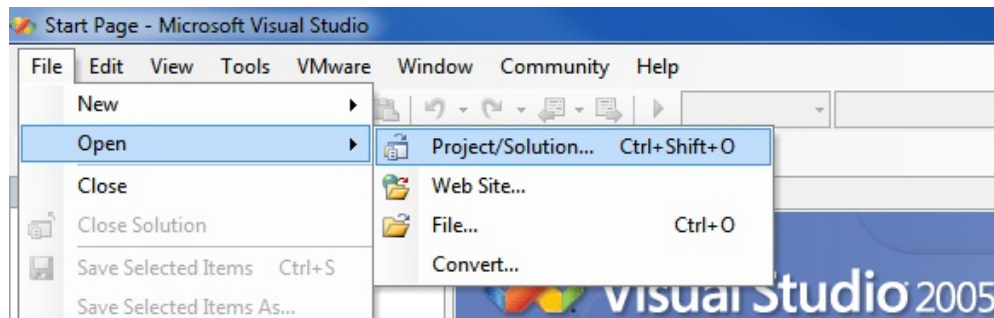
How to open the Visual Studio 2005 C++ SDK project:

In Windows XP, open Visual Studio 2005.

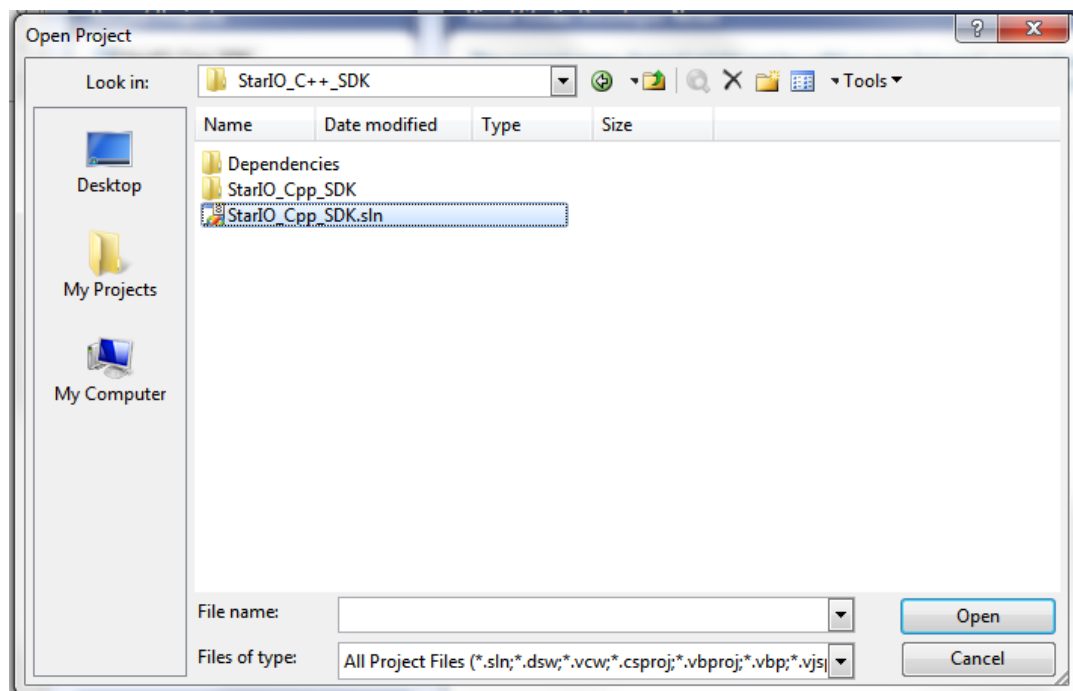
In Vista, 7, 8 or 8.1, right click on Visual Studio 2005 icon and click “Run as administrator”.



Once Visual Studio is running, click on File->Open->Project/Solution...

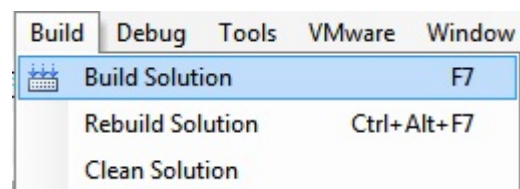


Navigate to the C++ SDK folder titled “StarIO_Cpp_SDK” and click on the “sln” file titled “StarIO_Cpp_SDK.sln” to open the SDK project.



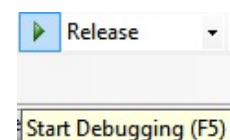
Compiling the project:

Click on the menu item “Build” and then click “Build Solution” or hit F7



Running the project:

Click on the green arrow to “Start Debugging” or hit F5



Using the SDK with Star Micronics Printers

Please make sure you have a compatible Star Micronics Thermal Line Mode Printer model.

Port Name and Interface Relation:

StarIO uses specific port names to identify what port will be used. These are very important to understand because not following the naming convention correctly will fail to communicate with the printer.

Interface	Port Name	Port Settings
Serial	COMn	9600,n,8,1,h
Parallel	LPTn	N/A
USB (Vendor Class)	usbven:	N/A
USB (Printer Class)	usbprn:"Queue Name"	N/A
Ethernet (TCP/IP)	tcp:"IP Address"	N/A
Bluetooth	BT: COMn	N/A



If using **USB** interface and the printer is in **printer class mode**, once you install the printer drivers, you will have a queue name for the printer.

If Printer Queue Name = Star TSP700II (TSP743II)

Then we would put **"usbprn:Star TSP700II (TSP743II)"** as the Port Name.

If using **USB** interface and the printer is in **vendor class mode**, a Port number is not required. Just put "usbven:" as the Port Name.

"LPTn" n = your port number (1, 2, 3, 4 etc)

"COMn" n = your port number (1, 2, 3, 4 etc)

"tcp:192.168.222.244" Enter TCP IP Address of the Ethernet printer.

"BT:COMn" n = your Bluetooth virtual serial port number (1, 2, 3, 4 etc)

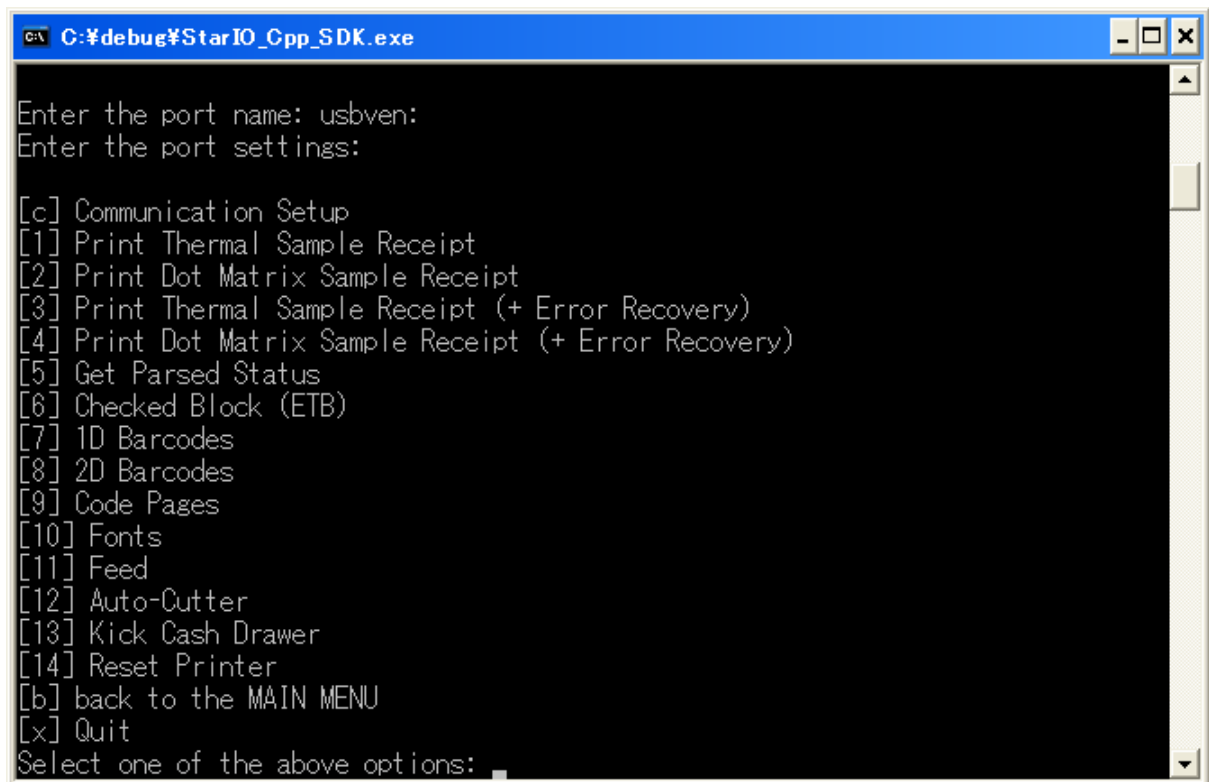
When you first launch the application in the console, you will be asked for a port name and port settings. Please review the above Port Name choices you can use that will connect to your Star Printer.

[illegible]

When you use POS Printers, Please select 1.

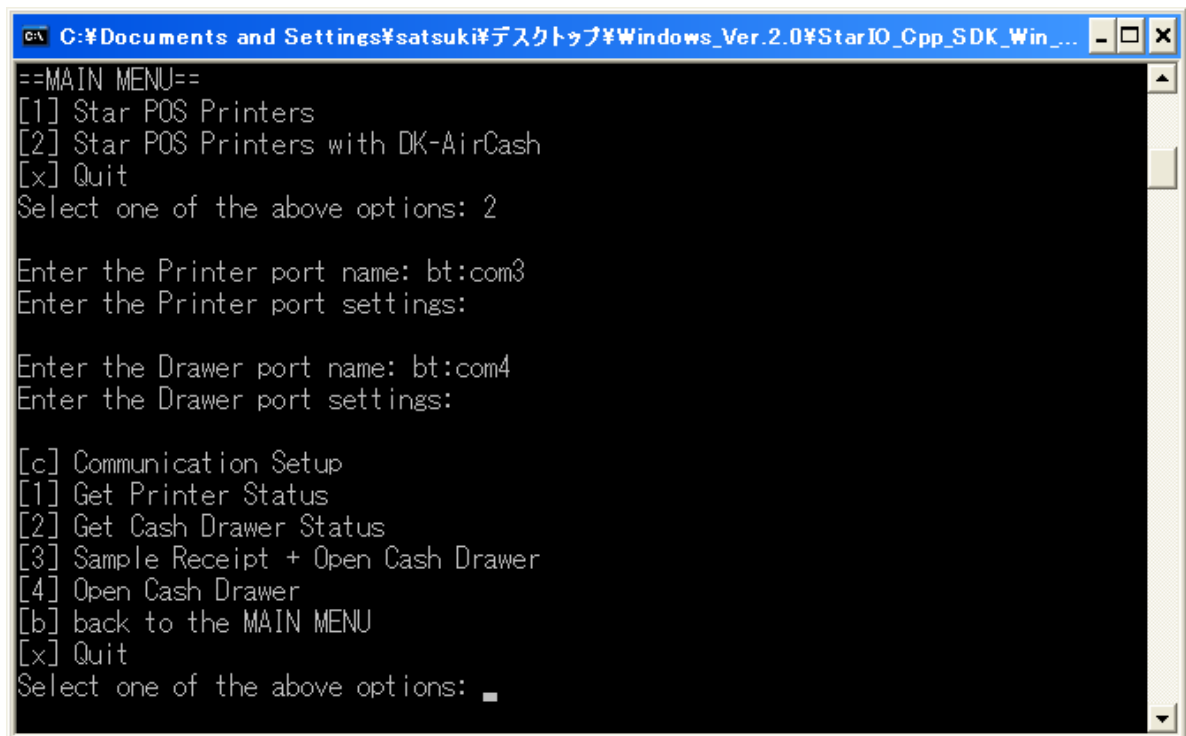
When you use POS Printers with DK-AirCash, Please select 2.

Using a POS Printer



Shows user entering "usbven:" for a USB Vendor Class Star Printer.

Using a POS Printer with DK-AirCash



```
C:\Documents and Settings\satsuki\Desktop\Windows_Ver.2.0\StarIO_Cpp_SDK_Win...
==MAIN MENU==
[1] Star POS Printers
[2] Star POS Printers with DK-AirCash
[x] Quit
Select one of the above options: 2

Enter the Printer port name: bt:com3
Enter the Printer port settings:

Enter the Drawer port name: bt:com4
Enter the Drawer port settings:

[c] Communication Setup
[1] Get Printer Status
[2] Get Cash Drawer Status
[3] Sample Receipt + Open Cash Drawer
[4] Open Cash Drawer
[b] back to the MAIN MENU
[x] Quit
Select one of the above options: c
```

Shows user entering “bt:com3” and “bt:com4” for a Bluetooth printer and DK-AirCash .

After you enter in connection details for your printer, you will be greeted with a menu to perform Star commands. Have some fun with this and try different choices to fully exercise this SDK’s functionality.

To change the printer connection settings, you can hit “c” and then “Enter” to return to the Port Name and Port Settings input screen.

To quit you can put “x” and hit “Enter” or any one of the choices shown in the above menu.

Overview of how the C++ SDK is designed

This overview will touch briefly on key components of the SDK and how to find them.

Focus on the file “main.cpp” which contains all the business logic and StarIO commands.

The project has a DLL file called StarIOPort.dll which is a library for StarIO commands and communication with the printer that can be used with any Windows C++ application. Include this file into your application in order to expose StarIO and its methods to your program.

Look through the code for comments and you will see how easily it is broken down step by step for you. Almost all functions in this SDK have comments above to explain what the function and code is doing.

If you would like to quickly find a snippet of code that this application performs, use Visual Studio 2005 to do a FIND on the particular command you wish to know. For example to find the 2D Barcode commands, hit Control+F on the keyboard to open the Find and Replace window. Type in “2D Barcode” and find the declaration of where the function begins.

StarIO - (StarIOPort.dll & StarIO.dll)

How to include StarIO into your project:

The file StarIOPort.dll is a dynamically linking library that you can include into your C++ projects to expose StarIO methods. The file StarIOPort.h is a header to expose StarIOPort.dll

To include this DLL into your project:

1. Open up your Main code.
2. At the very top of your code where your includes are, place the following line:

`#include <starmicronics/StarIOPort.h>`
3. Now open up this SDK and open the folder called “Dependencies”. Open the folder called 32 or 64 depending on your target CPU.
4. In this folder you will see StarIOPort.dll and StarIOPort.lib.
5. Copy and paste these 2 files to your project’s output directory “bin/Debug” or “Release”.
6. Now go back to the “Dependencies” folder for this SDK and copy the folder “starmicronics”. Paste this into your project folder.
7. Now you can access all of StarIO’s methods!



WARNING: Make sure StarIOPort.lib and StarIOPort.dll are in the same directory as each other. StarIOPort.dll gets called by your application once you include “starmicronics/StarIOPort.h”. These must reside along with your EXE.

Configuring your project to x64 or x86 with StarIO:

Compiling your project with the correct StarIOPort.DLL is very important to get the maximum speed from your CPU. Your main two choices are 32-bit and 64-bit Operating systems. You can find StarIO dependencies in the folder called “Dependencies” in which you will see 32 and 64 folders. If you wish to use the 32-bit libraries then copy those otherwise use the 64-bit libraries. Set your project to compile for the CPU you wish to compile for and you are done!

Functionality

StarIO Printer Commands

All of these commands can be found in the [Star Thermal Line Mode Command Manual and Star Impact Printer Command Manual](#).

The C++ SDK also has page and section references to this document for more information so please download that manual and study it if you need more detail on a specific command.

Sample Receipts

```
[1] Print Thermal Sample Receipt
[2] Print Dot Matrix Sample Receipt
[3] Print Thermal Sample Receipt (+ Error Recovery)
[4] Print Dot Matrix Sample Receipt (+ Error Recovery)
```

[1] and [2] Print Sample Receipt

Prints an example in English or Japanese. Reference the Text Formatting section of this document for instructions on modifying text.

[3] and [4] Print Sample Receipt (+ Error Recovery)

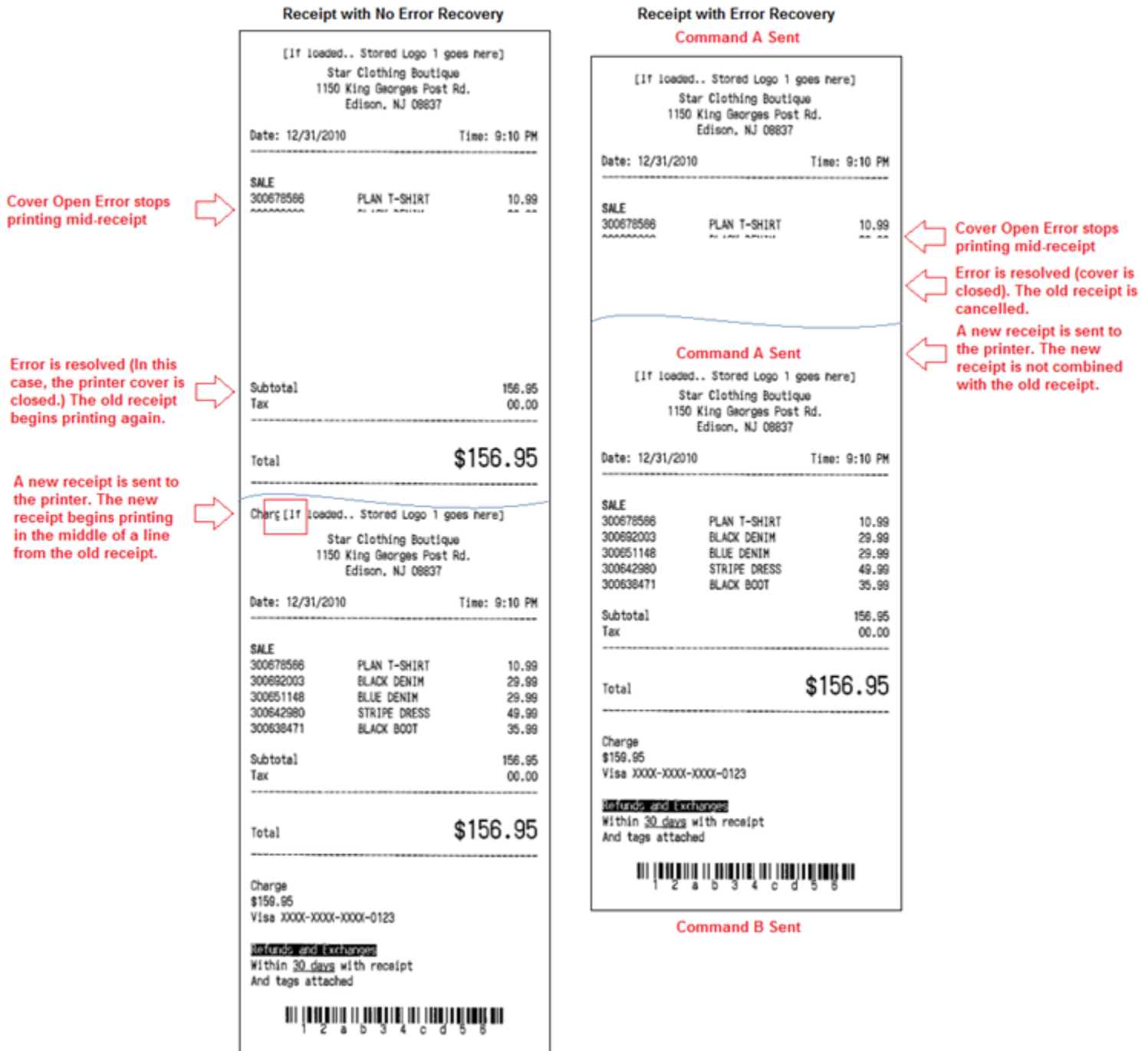
Enables the printer to completely recover from a failed print job due to an error occurring in the middle of printing. For example, the paper runs out in the middle of printing a receipt. The cashier loads another roll of paper and reprints it. Depending on where the old print job was cut short due to paper out, the new receipt may begin in the middle of the old one. Star provides two commands, one to be inserted before the print job and one after, to avoid this issue. A graphic is included on the following page to illustrate this functionality.

Command A: (Add to the head of the receipt data)

ESC GS ETX EOT NUL NUL ESC GS ETX ETX NUL NUL

Command B: (Add to the bottom of the receipt data)

ESC GS ETX EOT NUL NUL



Important Notes about This Function:

1. Text Formatting

Command A will release the effect of text formatting commands (ex: bold, underline). Text formatting commands must be added between Command A and Command B for all print data.

2. In the following conditions, the printer will discard all data if Command A is not sent:

- i. Error occurs in sending print data with Command A
- ii. Within ten seconds after an error occurs

(continued from Print Sample Receipt + Error Recovery Notes section)

3. Supported printers and minimum firmware version required:

FVP10	Ver.1.2 or later
TSP650	Ver.3.0 or later
TSP650II	Ver.1.0 or later
TSP700II	Ver.3.0 or later
TSP800II	Ver.1.0 or later
TUP500	Ver.3.0 or later
SP700	Ver.3.0 or later

1D Barcodes

```

1D BARCODES
ASCII: ESC b n1 n2 n3 n4 d1 ... dk RS
HEX:   1B 62 n1 n2 n3 n4 d1 ... dk 1E

n1 = Barcode type
n2 = Layout
n3 = Barcode size selection
n4 = Barcode Height <In Dots>

1D BARCODES MENU
[1] Code 39
[2] Interleaved 2 of 5
[3] Code 93
[4] Code 128
[im] Back to Main Menu
Please choose a barcode to print: _

```

n1 = Barcode Type

- 0 = UPC-E
- 1 = UPC-A
- 2 = JAN/EAN8
- 3 = JAN/EAN13
- 4 = Code39
- 5 = ITF
- 6 = Code128
- 7 = Code93
- 8 = NW-7

n2 = Under-bar character selection and added line feed selection

- 1 = No added under-bar characters & Executes line feed after printing barcode
- 2 = Adds under-bar characters & Executes line feed after printing barcode
- 3 = No added under-bar characters & doesn't line feed after printing barcode
- 4 = Adds under-bar characters & doesn't line feed after printing barcode

n3 = Barcode mode selection specifies the size of the narrow and wide barcode lines

n4 = Barcode height (dot count)

2D Barcodes

QR Codes

```

2D BARCODES MENU
[1] QR Code ~ Step 1 ~ Set Model
[2] QR Code ~ Step 2 ~ Set Correction Level
[3] QR Code ~ Step 3 ~ Set Cell Size
[4] QR Code ~ Step 4 ~ Set Barcode Data
[5] QR Code ~ Step 5 ~ Print QR Code
[6] QR Code ~ Do All Steps

```

There are 5 commands below that are very important to printing a good QR code.

- | | |
|----------------------------------|--------------------------------|
| (1) Set QR Code Model # | ESC GS y S 0 n |
| (2) Set QR Code Correction Level | ESC GS y S 1 n |
| (3) Set QR Code Cell Size | ESC GS y S 2 n |
| (4) Set QR Code Data | ESC GS y D 1 NUL nL nH d1...dk |
| (5) Print the QR Code | ESC GS y P |

Here is the order in which commands need to be sent to the printer for it to print the QR code.

QR model + QR Correction Level + QR Cell Size + QR Data + Print QR Code

PDF417

```

[7] PDF 417 ~ Step 1 ~ Set Size
[8] PDF 417 ~ Step 2 ~ Set ECC (Security Level)
[9] PDF 417 ~ Step 3 ~ Set X-Dimensions
[10] PDF 417 ~ Step 4 ~ Set Aspect Ratio
[11] PDF 417 ~ Step 5 ~ Set Data
[12] PDF 417 ~ Step 6 ~ Print PDF 417
[13] PDF 417 ~ Do All Steps
[m] Back to Main Menu
Please choose a 2D Barcode Command:

```

Please visit page 3-120 in the Line Mode Spec Manual for more details on PDF417

- | | |
|--|-------------------------------|
| (1) Set PDF417 barcode size | ESC GS x S 0 n p1 p2 |
| (2) Set PDF417 ECC (Security Level) | ESC GS x S 1 n |
| (3) Set PDF417 module X direction size | ESC GS x S 2 n |
| (4) Set PDF417 module aspect ratio | ESC GS x S 3 n |
| (5) Set PDF417 barcode data | ESC GS x D nL nH d1 d2 ... dk |
| (6) Print PDF417 barcode | ESC GS x P |

Here is the order in which commands need to be sent to the printer for it to print the PDF417.

PDF417 Size + PDF417 ECC + PDF417 X-dim + PDF417 Ratio + PDF417 Data + Print PDF417

Change Font

Changing the font on the printer can be done with the following commands.

ESC RS F n n = 0 for A, 1 for B, 10 for OCR-B

```

FONTS:
[1] Set Font A
[2] Set Font B
[3] Set Font OCR-B
[m] Back to Main Menu
Please choose a font to set the printer to: _

```

Feed

The feed commands are very straight forward. Use LF for best results.

```

FEED:
[1] Line Feed A
[2] Set Line Feed to 4mm
[3] Set Line Feed to 3mm
[4] Multi Line Feed
[5] Set Line Spacing to 3mm
[6] Feed 4mm Multi Lines
[7] Feed 8mm Multi Lines
[8] Form Feed
[m] Back to Main Menu
Please choose a feed command to use: _

```

Cut

```

AUTOCUTTER:
[1] Full Cut
[2] Partial Cut
[3] Feed and Full Cut
[4] Feed and Partial Cut
[m] Back to Main Menu
Please choose a cut command to execute: _

```

Partial Cut ESC d 1 or 3

Full Cut ESC d 0 or 2

Code Pages

To set a code page on the printer:

ESC GS *t* *n*

n = The Code Page Selection Index

```
CODE PAGES:
[1] Normal
[2] 437 <USA, Std. Europe>
[3] Katakana
[4] 437 <USA, Std. Europe>
[5] 858 <Multilingual>
[6] 852 <Latin-2>
[7] 860 <Portuguese>
[8] 861 <Icelandic>
[9] 863 <Canadian French>
[10] 865 <Nordic>
[11] 866 <Cyrillic Russian>
[12] 855 <Cyrillic Bulgarian>
[13] 857 <Turkey>
[14] 862 <Israel <Hebrew>>
[15] 864 <Arabic>
[16] 737 <Greek>
[17] 851 <Greek>
[18] 869 <Greek>
[19] 928 <Greek>
[20] 772 <Lithuanian>
[21] 774 <Lithuanian>
[22] 874 <Thai>
[23] 1252 <Windows Latin-1>
[24] 1250 <Windows Latin-2>
[25] 1251 <Windows Cyrillic>
[26] 3840 <IBM-Russian>
[27] 3841 <Gost>
[28] 3843 <Polish>
[29] 3844 <CS2>
[30] 3845 <Hungarian>
[31] 3846 <Turkish>
[32] 3847 <Brazil-ABNT>
[33] 3848 <Brazil-ABICOMP>
[34] 1001 <Arabic>
[35] 2001 <Lithuanian-KBL>
[36] 3001 <Estonian-1>
[37] 3002 <Estonian-2>
[38] 3011 <Latvian-1>
[39] 3012 <Latvian-2>
[40] 3021 <Bulgarian>
[41] 3041 <Maltese>
[m] Back to Main Menu
Please choose a Code Page to Print Character Map: _
```

Getting Parsed Status of the Printer

```
Current status of the Star Printer:
Online.
Drawer Closed.
```

The SDK also has functions for a full sample receipt which shows how to do text formatting. You can also kick the cash drawer and reset the printer.

DK-AirCash

```
[1] Get Printer Status  
[2] Get Cash Drawer Status  
[3] Sample Receipt + Open Cash Drawer  
[4] Open Cash Drawer
```

Get Printer Status /Get Cash Drawer Status

The status of the connected printer or cash drawer is displayed.

Sample Receipt + Open Cash Drawer

When a printer is connected, it prints a sample receipt and a cash drawer is opened if connected. A password is required to open the cash drawer. The default password is "1234"

Open Cash Drawer

A cash drawer is opened if connected. A password is required to open the cash drawer. The default password is "1234".

Tips for App Development when using StarIO

Star Micronics prides itself as the industry leader in great POS products and with great power comes great responsibility. Below is a tips section just to help you get on the fast track to software development with StarIO.

TIP #1: If you are going to be coding a large project, create a class to abstract all the printing methods into class(s) instead of having the code reside in the main code block. This will help with code reusability and will also save you time in the long run from having to find one line of code in the main code. By having StarIO only reside in the class(s), you will be fully taking advantage of object oriented programming.

TIP #2: Know what the differences and definitions of (ASCII & Unicode), (Hex & Decimal), and (Byte & Char) are. A byte is normally 8-bits long which would be 8 digits of binary (1s and 0s). These bytes are just 8 bits of binary data but bytes can also be int or char. The three different variable types basically hold the data in the same way but there are slight differences. Try to code with Bytes instead of Chars, ints, or strings when choosing a variable to contain your print job data. ASCII to Unicode and vice versa conversions are sometimes unsecure so make sure you know what and how the encoding class works with these. Big mistakes made in Unicode are culture-sensitive search and casing, surrogate pairs, combining characters, and normalization which are answered [here](#).

TIP #3: HEX DUMP MODE! If you are debugging and your application seems to have a bug in it use hex dump mode on the printer. This is the best way to verify what is being sent out of the computer is being received correctly. To put the printer in hex dump mode, turn the printer off, open the cover to the paper, hold the feed button down, turn the printer back on, close the cover, let go of the feed button. Hex dump mode is a sure fire way to verify hex data is sent correctly. When in hex dump mode, printer functions will not work.

TIP #4: Do not waste time trying to reverse engineer StarIO command codes. All the available StarIO commands are available in the Thermal Line Mode Spec Manual and that is the best resource to use when researching a specific StarIO command. This SDK & Manual was built to help you (The Developer) have a very easy job ahead of you to program for Star Printers.

TIP #5: If there is a command that is not covered in this SDK but you wish to see a code snippet of that command in use then visit our Developers' section for a possible code block that matches your needs.

TIP #6: StarIO, ESC/POS, UPOS: JavaPOS, POS for .NET, & OPOS are all different ways to communicate with the printer. Visit our Developers' section for more info on these. This SDK covers StarIO only.

Additional Resources

This section will share resources that will help you develop good software with StarIO.

[Star Micronics Developers Network](#)

Browse Star Micronics' FAQs, ask a question, look up information, etc.

The Developers Network gets you access to:

- Updated Versions of this Manual and Source Code
- Getting Started Advice and Industry Information
- Star Micronics Printer Drivers
- Technical Questions/Support

[Download the Star Thermal Line Mode Command Spec Manual](#)

[Download the Star Impact Printer Command Spec Manual](#)

Use it as your reference for all StarIO Line Mode commands.

[Unicode.org](#)

The Unicode Consortium - Good place to learn more about Unicode.

[1D Barcodes](#)

Barcode Island is a great resource for specs on 1D barcodes.

[2D Barcodes](#)

Great place for information on 2D Barcodes, [QR Codes](#), and [PDF417](#)

[Code Pages](#)

Learn about Code Pages here.

ASCII Table Resource

ASCII Hex Symbol	ASCII Hex Symbol	ASCII Hex Symbol	ASCII Hex Symbol
0 0 NUL	16 10 DLE	32 20 (space)	48 30 0
1 1 SOH	17 11 DC1	33 21 !	49 31 1
2 2 STX	18 12 DC2	34 22 "	50 32 2
3 3 ETX	19 13 DC3	35 23 #	51 33 3
4 4 EOT	20 14 DC4	36 24 \$	52 34 4
5 5 ENQ	21 15 NAK	37 25 %	53 35 5
6 6 ACK	22 16 SYN	38 26 &	54 36 6
7 7 BEL	23 17 ETB	39 27 '	55 37 7
8 8 BS	24 18 CAN	40 28 (56 38 8
9 9 TAB	25 19 EM	41 29)	57 39 9
10 A LF	26 1A SUB	42 2A *	58 3A :
11 B VT	27 1B ESC	43 2B +	59 3B ;
12 C FF	28 1C FS	44 2C ,	60 3C <
13 D CR	29 1D GS	45 2D -	61 3D =
14 E SO	30 1E RS	46 2E .	62 3E >
15 F SI	31 1F US	47 2F /	63 3F ?

ASCII Hex Symbol	ASCII Hex Symbol	ASCII Hex Symbol	ASCII Hex Symbol
64 40 @	80 50 P	96 60 `	112 70 p
65 41 A	81 51 Q	97 61 a	113 71 q
66 42 B	82 52 R	98 62 b	114 72 r
67 43 C	83 53 S	99 63 c	115 73 s
68 44 D	84 54 T	100 64 d	116 74 t
69 45 E	85 55 U	101 65 e	117 75 u
70 46 F	86 56 V	102 66 f	118 76 v
71 47 G	87 57 W	103 67 g	119 77 w
72 48 H	88 58 X	104 68 h	120 78 x
73 49 I	89 59 Y	105 69 i	121 79 y
74 4A J	90 5A Z	106 6A j	122 7A z
75 4B K	91 5B [107 6B k	123 7B {
76 4C L	92 5C \	108 6C l	124 7C
77 4D M	93 5D]	109 6D m	125 7D }
78 4E N	94 5E ^	110 6E n	126 7E ~
79 4F O	95 5F _	111 6F o	127 7F □



Star Micronics is a global leader in the manufacturing of small printers. We apply over 50 years of knowhow and innovation to provide elite printing solutions that are rich in stellar reliability and industry-respected features. Offering a diverse line of Thermal, Hybrid, Mobile, Kiosk and Impact Dot Matrix printers, we are obsessed with exceeding the demands of our valued customers every day.

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1.0.0	July 2011
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1.2.0	Jan. 2012
2.0.0	Mar. 2014
2.1.0	July 2014

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