



EM 220

Mobile Printer

SDK API Reference Guide

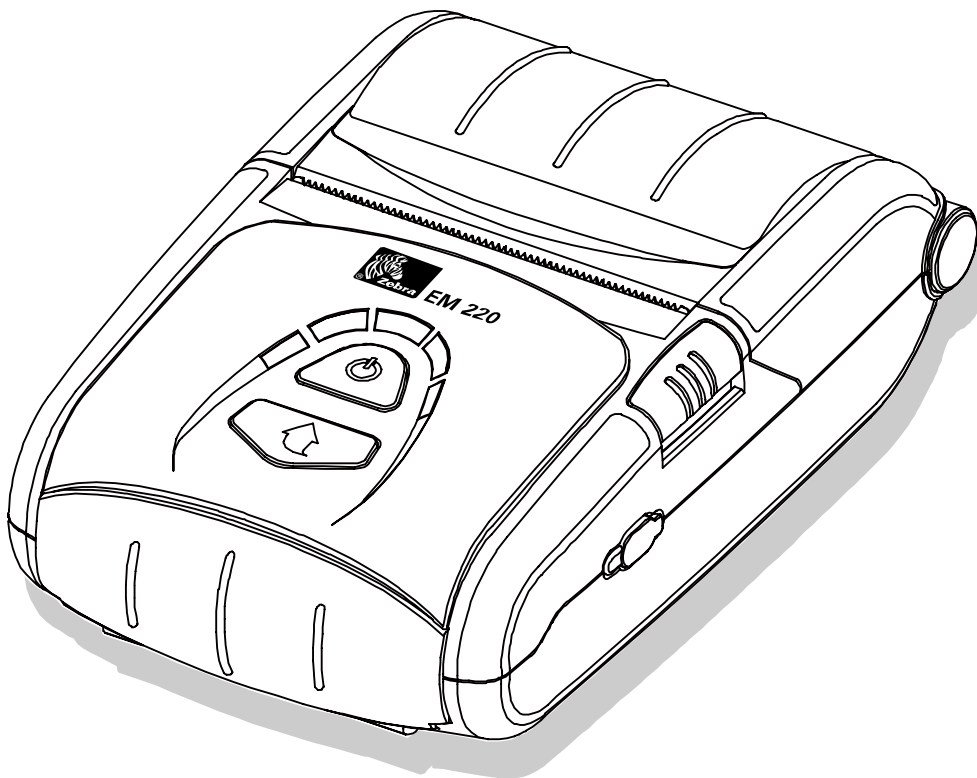


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- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet or circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WARNING: Exposure to Radio Frequency radiation. To conform to FCC RF exposure requirements this device shall be used in accordance with the operating conditions and instructions listed in this manual.

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1. Manual Information

This SDK Manual provides information on the dll files required for Windows application program development.

1-1 Supporting O/S & Platform

- O/S
 - Microsoft Windows CE 3.x / 4.x / 5.x / 6.x

- Platform
 - Pocket PC 2002
 - Pocket PC 2003
 - Pocket PC 2003 second edition
 - Windows Mobile 5
 - Windows Mobile 6
 - Custom Platform for Armv4i CPU
 - * supported .Net Framework

1-2 Supporting Devices

This is a list of verified devices. If your PDA cpu type is Armv4 or Armv4i, it is compatible with our module driver.

- Symbol MC3000 / MC7090 / MC9000
- Innoteletek MC3000 /
- Intermec CN2
- CASIO DT-X10M10E
- ATID AT570
- HP iPaq Series

2. Properties

The constant values used in the dll files provided are declared in the BxlConst.h file.
The development environment was based on C++.

2-1 CharacterSet (LONG R/W)

As the attribute that defines the Code Page of the printer, the default setting is BXL_CS_437. Use the SetCharacterSet(), GetCharacterSet() functions to set values or recall previously set values.

The Code Pages that can be used are as follows:

Code	Value	Description
BXL_CS_PC437	0	Code page PC437
BXL_CS_PC850	2	Code page PC850
BXL_CS_PC860	3	Code page PC860
BXL_CS_PC863	4	Code page PC863
BXL_CS_PC865	5	Code page PC865
BXL_CS_WPC1252	16	Code page WPC1252
BXL_CS_PC866	17	Code page PC866
BXL_CS_PC852	18	Code page PC852
BXL_CS_PC858	19	Code page PC858
BXL_CS_PC864	22	Code page PC864
BXL_CS_PC874	23	Code page PC874
BXL_CS_WPC1253	24	Code page WPC1253
BXL_CS_WPC1251	28	Code page WPC1251
BXL_CS_PC737	29	Code page PC737
BXL_CS_THAI16	31	Code page THAI16
BXL_CS_PC862	33	Code page PC862
BXL_CS_PC855	36	Code page PC855
BXL_CS_PC857	37	Code page PC857
BXL_CS_USER	255	User set page

2-2 International CharacterSet (LONG R/W)

As the attribute that defines the International Character Set of the printer, the default setting is BXL_ICS_USA. Use the SetInterChrSet(), GetInterChrSet() functions to set values or recall previously set values.

The International Character Sets that can be used are as follows:

Code	Value	Description
BXL_ICS_USA	0	USA code setting
BXL_ICS_FRANCE	1	FRANCE code setting
BXL_ICS_GERMANY	2	GERMANY code setting
BXL_ICS_UK	3	UK code setting
BXL_ICS_DENMARK1	4	DENMARK1 code setting
BXL_ICS_SWEDEN	5	SWEDEN code setting
BXL_ICS_ITALY	6	ITALY code setting
BXL_ICS_SPAIN	7	SPAIN code setting
BXL_ICS_NORWAY	9	NORWAY code setting
BXL_ICS_DENMARK2	10	DENMARK 2 code setting

2-3 State (LONG R)

This attribute sets the printer State. It can only be read, and is automatically set when examining the printer State by using the CheckPrinter function. As State values can be set in duplication, each value can be confirmed via bit calculation. The values of this attribute can be recalled by using the GetState function.

Printer State values are as follows:

Code	Value	Description
BXL_STS_NORMAL	0	Printer status is normal
BXL_STS_PAPEREMPTY	1	No paper in printer
BXL_STS_COVEROPEN	2	The printer paper cover is open
BXL_STS_POWEROVER	4	The printer battery capacity is insufficient
BXL_STS_MSR_READY	8	Currently in MSR read mode, printing not possible
BXL_STS_PRINTING	16	Currently printing or transmitting data
BXL_STS_ERROR	32	An error has occurred
BXL_STS_NOT_OPEN	64	The printer is not open
BXL_STS_ERROR_OCCUR	128	An error has occurred

2-4 PowerValue (LONG R)

This attribute sets the battery capacity value of the printer. It can only be read, and is set every time the status of the printer battery changes. The values of this attribute can be recalled by using the GetPowerValue function.

Battery Capacity values are as follows:

Code	Value	Description
BXL_PWR_HIGH	0	Battery charge status: 95%
BXL_PWR_MIDDLE	1	Battery charge status: 85% or higher
BXL_PWR_LOW	2	Battery charge status: 50% or higher
BXL_PWR_SMALL	3	Battery charge status: 25% or higher
BXL_PWR_NOT	4	Battery charge status: 25% or lower

3. Methods

The functions disclosed in the provided module are declared in the ExportFunc.h file. The development environment was based on C++.

3-1 PrinterOpen

In order to use the module, this function is enabled. For PDA types with different In/Out ports, port settings for each are required. In general, two-way communication is possible with just the strOutPortName setting.

```
long PrinterOpen(
    LPCTSTR strOutPortName,
    Long ITimeout
);
```

Inju

[Parameters]

* strOutPortName

Unicode Data ending with [in] null. The virtual Serial Port number and Baud rate of the currently connected device is conveyed for printing. If strInPortName is NULL, strOutPortName sets to In/Out data processing.(ex: COM4:19200)

* ITimeout

Specifies the timeout, in milliseconds, used to calculate the total timeout period for open operations.

[Return Values]

Code	Value	Description
BXL_SUCCESS	0	Returns after function success
BXL_CREATE_ERROR	102	Failure to create communication target
BXL_NOT_OPENED	101	Unable to open communication port
BXL_STATUS_ERROR	103	Error occurred during status check
BXL_WRITE_ERROR	300	Failure to transmit data
BXL_READ_ERROR	301(0)	Error in received value or reception failure

3-2 PrinterClose

This function disables the SDK module. Functions related to printing and MSR are no longer available for use.

```
long PrinterClose();
```

[Parameters]

None

[Return Values]

Code	Value	Description
BXL_SUCCESS	0	Returns after function success

3-3 LineFeed

This function dictates line feeding to the integer value conveyed for printing.

```
long LineFeed (
    int nFeed,
);
```

[Parameters]

* nFeed

The [in] integer value conveys the number of lines for line feeding in the form of printing value.

[Return Values]

Code	Value	Description
BXL_SUCCESS	0	Returns after function success
BXL_NOT_OPENED	101	Unable to open communication port
BXL_STATUS_ERROR	103	Error occurred during status check
BXL_WRITE_ERROR	300	Failure to transmit data

3-4 PrintBarcode

This function supports the 1-dimension and 2-dimension barcode printing function.

```
long PrintBarcode(
    PCHAR Data,
    long symbology,
    long Height,
    long Width,
    long Alignment,
    long TextPosition
);
```

[Parameters]

* Data

ANSI Code Data ending with [in] null. Barcode data to be printed are conveyed.

* symbology

Defines the [in] barcode type. The barcode type is defined in Bxldll.h.

Code	Value	Data Number Limit	Data Value Range
BXL_BCS_UPCA	101	$11 \leq n \leq 12$	$48 \leq \text{data} \leq 57$
BXL_BCS_UPCE	102	$11 \leq n \leq 12$	$48 \leq \text{data} \leq 57$
BXL_BCS_EAN13	103	$12 \leq n \leq 13$	$48 \leq \text{data} \leq 57$
BXL_BCS_JAN13	104		
BXL_BCS_EAN8	105	$7 \leq n \leq 8$	$48 \leq \text{data} \leq 57$
BXL_BCS_JAN8	106		
BXL_BCS_Code39	107	$1 \leq n \leq 255$	$48 \leq \text{data} \leq 57, 65 \leq \text{data} \leq 90,$ $\text{data} = 32, 36, 37, 43, 45, 46, 47$
BXL_BCS_ITF	108	$1 \leq n \leq 255$ (even number)	$48 \leq \text{data} \leq 57$
BXL_BCS_Codabar	109	$1 \leq n \leq 255$	$48 \leq \text{data} \leq 57, 65 \leq \text{data} \leq 68,$ $\text{data} = 36, 43, 45, 46, 47, 58$
BXL_BCS_Code93	110	$1 \leq n \leq 255$	$0 \leq \text{data} \leq 127$
BXL_BCS_Code128	111	$2 \leq n \leq 255$	$0 \leq \text{data} \leq 127$
BXL_BCS_PDF417	200	$2 \leq n \leq 928$	$0 \leq \text{data} \leq 255$
BXL_BCS_MAXICODE	201	Not supported	Not supported
BXL_BCS_QRCODE	202	Not supported	Not supported

* Height

This value sets the [in] barcode height in Dot units. The value range is 1~255. Two dimensional barcodes are not affected.

* Width

This value sets the [in] barcode width according to a value range of 2~7. If the print area of the barcode exceeds the printing paper, barcode printing may not be possible. Two dimensional barcodes are not affected by this value.

*** Alignment**

This value sets the [in] barcode alignment.

Code	Value	Description
BXL_ALIGNMENT_LEFT	0	Left-aligned
BXL_ALIGNMENT_CENTER	1	Centered
BXL_ALIGNMENT_RIGHT	2	Right-aligned

*** TextPosition**

This value sets the print position of the [in] barcode data. Two dimensional barcodes have only the BXL_BC_TEXT_NONE value.

Code	Value	Description
BXL_BC_TEXT_NONE	0	Barcode data not printed
BXL_BC_TEXT_ABOVE	1	Barcode data printed above barcode
BXL_BC_TEXT_BELOW	2	Barcode data printed below barcode

[Return Values]

Code	Value	Description
BXL_SUCCESS	0	Returns after function success
BXL_NOT_OPENED	101	Unable to open communication port
BXL_STATUS_ERROR	103	Error occurred during status check
BXL_WRITE_ERROR	300	Failure to transmit data
BXL_BC_DATA_ERROR	500	Error in barcode data
BXL_BC_NOT_SUPPORT	501	Barcode type not supported

3-5 PrintText

This function supports the text printing function.

```
long PrintText(
    LPCTSTR Data,
    long Alignment,
    long Attribute,
    long TextSize
);
```

[Parameters]

*** Data**

Unicode Data ending with [in] null. Conveys the barcode data to be printed.

*** Alignment**

This value sets the [in] barcode alignment.

Code	Value	Description
BXL_ALIGNMENT_LEFT	0	Left-aligned
BXL_ALIGNMENT_CENTER	1	Centered
BXL_ALIGNMENT_RIGHT	2	Right-aligned

*** Attribute**

This value sets the [in] text properties. The following values can be duplicated.

Code	Value	Description
BXL_FT_DEFAULT	0	Font A, print using the basic device font Basic setting value
BXL_FT_FONTB	1	Set to Font B
BXL_FT_BOLD	2	Adds Bold lettering attribute
BXL_FT_UNDERLINE	4	Adds Underlining attribute
BXL_FT_REVERSE	8	Adds Reverse lettering attribute

* TextSize

This value sets the [in] text size properties. The width and height values can be duplicated.

Code	Value	Description
BXL_TS_0WIDTH	0	Width magnification set to x1
BXL_TS_1WIDTH	16	Width magnification set to x2
BXL_TS_2WIDTH	32	Width magnification set to x3
BXL_TS_3WIDTH	48	Width magnification set to x4
BXL_TS_4WIDTH	64	Width magnification set to x5
BXL_TS_5WIDTH	80	Width magnification set to x6
BXL_TS_6WIDTH	96	Width magnification set to x7
BXL_TS_7WIDTH	112	Width magnification set to x8

Code	Value	Description
BXL_TS_0HEIGHT	0	Height magnification set to x1
BXL_TS_1HEIGHT	1	Height magnification set to x2
BXL_TS_2HEIGHT	2	Height magnification set to x3
BXL_TS_3HEIGHT	3	Height magnification set to x4
BXL_TS_4HEIGHT	4	Height magnification set to x5
BXL_TS_5HEIGHT	5	Height magnification set to x6
BXL_TS_6HEIGHT	6	Height magnification set to x7
BXL_TS_7HEIGHT	7	Height magnification set to x8

[Return Values]

Code	Value	Description
BXL_SUCCESS	0	Returns after function success
BXL_NOT_OPENED	101	Unable to open communication port
BXL_STATUS_ERROR	103	Error occurred during status check
BXL_WRITE_ERROR	300	Failure to transmit data

3-6 PrintBitmap

This function prints image files. Only Bmp files are supported.

```
long PrintBitmap (
LPCTSTR FileName,
long Width,
long Alignment,
long Level
);
```

[Parameters]

* FileName

Expressed as a row of Unicode characters, the full path of the [in] image file is set.

* Width

This value is the width of the [in] image file to be converted. The value range is 0~384. When setting the value as below, the image size is modified to fit conditions.

Code	Value	Description
BXL_WIDTH_FULL	-1	Set to a value of 384, image is fit to full size of paper
BXL_WIDTH_NONE	-2	No variation given to image size

* Alignment

This value sets the [in] barcode alignment.

Code	Value	Description
BXL_ALIGNMENT_LEFT	0	Left-aligned
BXL_ALIGNMENT_CENTER	1	Centered
BXL_ALIGNMENT_RIGHT	2	Right-aligned

* Level

This value sets the color level of the [in] image. The value range is 0~100.

[Return Values]

Code	Value	Description
BXL_SUCCESS	0	Returns after function success
BXL_NOT_OPENED	101	Unable to open communication port
BXL_STATUS_ERROR	103	Error occurred during status check
BXL_WRITE_ERROR	300	Failure to transmit data
BXL_BITMAPLOAD_ERROR	400	Failure to read image file

3-7 CheckPrinter

This function checks printer status and sets the printer status properties.

```
long CheckPrinter ();
```

[Parameters]

None

[Return Values]

Code	Value	Description
BXL_SUCCESS	0	Returns after function success
BXL_NOT_OPENED	101	Unable to open communication port
BXL_READ_ERROR	301(0)	Failure to receive data
BXL_WRITE_ERROR	300	Failure to transmit data

3-8 MsrReadReady

This function switches the printer to MSR Ready status. Printing is not possible when in Ready status.

After returning via BXL_SUCCESS and if the m_IState is BXL_STS_MSR_READY, the standby status is deemed normal.

```
long CheckPrinter ();
```

[Parameters]

None

[Return Values]

Code	Value	Description
BXL_SUCCESS	0	Returns after function success
BXL_NOT_OPENED	101	Unable to open communication port
BXL_WRITE_ERROR	300	Failure to transmit data

3-9 MsrReadCancel

This function deactivates the MSR Ready status of the printer.

```
Long MsrReadCancel();
```

[Parameters]

None

[Return Values]

Code	Value	Description
BXL_SUCCESS	0	Returns after function success
BXL_NOT_OPENED	101	Unable to open communication port
BXL_WRITE_ERROR	300	Failure to transmit data
BXLMSR_NOTREADY	602	Not in READY status
BXLMSR_FAILEDMODE	601	In automatic read mode

3-10 MsrReadTrack

This function recalls MSR data. If the MSR is in read mode and BXLMSR_DATAEMPTY is returned, the card has not yet been read in the MSR. Scanning the card in the MSR again can be tried, or the MsrReadCancel function can be used to cancel read mode.

```
Long MsrReadTrack (
    PCHAR Data1,
    PCHAR Data2,
    PCHAR Data3
);
```

[Parameters]

- * PCHAR Data1
[in, out] MSR Data Track 1 read from the buffer defined by the caller.
- * PCHAR Data2
[out, out] MSR Data Track 2 read from the buffer defined by the caller.
- * PCHAR Data3
[out, out] MSR Data Track 3 read from the buffer defined by the caller.

[Return Values]

Code	Value	Description
BXL_SUCCESS	0	Returns after function success
BXL_NOT_OPENED	101	Unable to open communication port
BXL_WRITE_ERROR	300	Failure to transmit data
BXLMSR_DATAEMPTY	603	Not in READY status

3-11 DirectIO

This function can send and read data defined by the user.

```
Long DirectIO (
    PCHAR Data,
    UINT uiWrite,
    PCHAR pRequet,
    UINT uiRead
);
```

[Parameters]

- * PCHAR Data,
Data to be sent to the [int] printer, data is ANSI code
- * UINT uiWrite
Size of data to be sent to the [in] printer
- * PCHAR pRequet
Sets the values read from the buffered defined by the [in,out] caller
- * UINT uiRead
Converts the size of date to be read by the [in, out] caller to the actual size of read data

[Return Values]

Code	Value	Description
BXL_SUCCESS	0	Returns after function success
BXL_NOT_OPENED	101	Unable to open communication port
BXL_STATUS_ERROR	103	Error occurred during status check
BXL_WRITE_ERROR	300	Failure to transmit data
BXL_READ_ERROR	300(1)	Error in received value or reception failure

3-12 NextPrintPos

If the label function is set, the paper is fed up to the next printing position.

```
Long NextPrintPos ();
```

[Parameters]

* None

[Return Values]

Code	Value	Description
BXL_SUCCESS	0	Returns after function success
BXL_NOT_OPENED	101	Unable to open communication port
BXL_STATUS_ERROR	103	Error occurred during status check
BXL_WRITE_ERROR	300	Failure to transmit data

3-13 GetTrack1

This function returns MSR Track1 data. If the MSR is in read mode and NULL is returned, the card has not yet been read by the MSR. Strip the card with the MSR again or wait for WM_MSR_ARRIVED message. MSRReadCancel function can be used to cancel read mode.

```
TCHAR * GetTrack1 ();
```

[Parameters]

* None

[Return Values]

If the function is successful, MSR Track1 data will be returned. If it has failed, the function will return NULL pointer.

3-14 GetTrack2

This function returns MSR Track2 data. If the MSR is in read mode and NULL is returned, the card has not yet been read by the MSR. Strip the card with the MSR again or wait for WM_MSR_ARRIVED message. MSRReadCancel function can be used to cancel read mode.

```
TCHAR * GetTrack2 ();
```

[Parameters]

* None

[Return Values]

If the function is successful, MSR Track2 data will be returned. If it has failed, the function will return NULL pointer.

3-15 GetTrack3

This function returns MSR Track3 data. If the MSR is in read mode and NULL is returned, the card has not yet been read by the MSR. Strip the card with the MSR again or wait for WM_MSR_ARRIVED message. MSRReadCancel function can be used to cancel read mode.

```
TCHAR * GetTrack3 ();
```

[Parameters]

* None

[Return Values]

If the function is successful, MSR Track2 data will be returned. If it has failed, the function will return NULL pointer.

4. Message

If some events have occurred in printer, the SDK will send WM_BXL_PRINTER_UPDATED message.

4-1 BXL_LPARAM_MSR

This message will be posted when the printer reads MSR Track data from MSR sensor.

lParam = 0

wParam

wParam is set by the following data.

Value	Description
BXL_MSG_TRACK1	0x01
BXL_MSG_TRACK2	0x02
BXL_MSG_TRACK3	0x04

Example) BXL_MSG_TRACK1 + BXL_MSG_TRACK2 = 0x03



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