XYCOM™ AUTOMATION

OPERATOR INTERFACE PRODUCTS
APPLICATION NOTE

Subject: Barcode Reader setup for GP/GLC 2x00 series   AN# 1108B
Date: 01/14/2001
Name: Paul Derbyshire
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Description: Barcode Reader requirements and setup with a GP/GLC 2x00 series product.

Affected Products:

- GP 2300, 2400, 2500
- GLC 2300, 2400, 2500

Problem:

Which Barcode Readers can I use with the GP/GLC 2x000 series on the Extended SIO port (COM 2)?

How do I set up my GP/GLC to use a Bar Code Reader (2-dimensional or otherwise) ?

Solution:

Compatibility with Extended SIO port

Any Barcode reader including 1 and 2 dimensional readers can be used as long as its output is similar to one of following examples. Please contact Xycom Automation Support or reference your manual for a tested barcode reader list.

Code Data	CR*

Code Data	CR + LF**

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Header	Code Mark***	# of digits (4bytes)	Code Data	CR*	BCC

Header	Code Data	CR + LF**

The wiring diagram of the Extended SIO port is shown below. Please be aware that this port only supports RS-232.

Pin Assignments	Pin No.	Signal Name	Signal Direction	Condition
(D-Sub 9pin male)	1	CD	Input	Carrier detect (RS-232C)
	2	RD	Input	Receive data (RS-232C)
	3	SD	Input	Send data (RS-232C)
	4	ER	Output	Enable receive (RS-232C)
	5	SG	———	Signal Ground
	6	DR	Input	Data Set Ready (RS-232C)
	7	RS	Output	Request Send (RS-232C)
	8	CS	Input	Clear send (RS-232C)
	9	RI/VCC	Input/Output	Ring Indicate (RS-232C) +5V+5% 0.25A

Barcode Communications Example

There are two Barcode Reader (BCR) drivers available on the GP.

- Serial BCR (KTAG)
- Serial BCR (LS)

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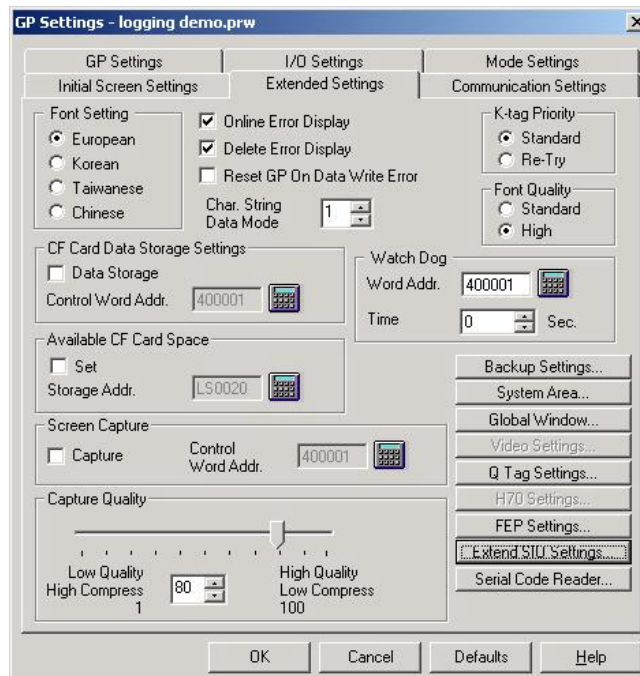
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Serial BCR (KTAG) – Enable entry on the GP/GLC by setting a bit high, scan in the data, and then fire another bit which closes and moves the data to a storage word range.

Serial BCR (LS) – Data string is read and automatically sent to a specified LS area word range. An optional bit can be enabled to indicate read complete. This read complete bit must be reset to allow further scans.

For most barcode applications the Serial BCR (LS) will be preferred. Select Serial BCR (LS) as your driver for COM2

In GP setup go to the Extended Settings tab and choose *Extended SIO Settings.*

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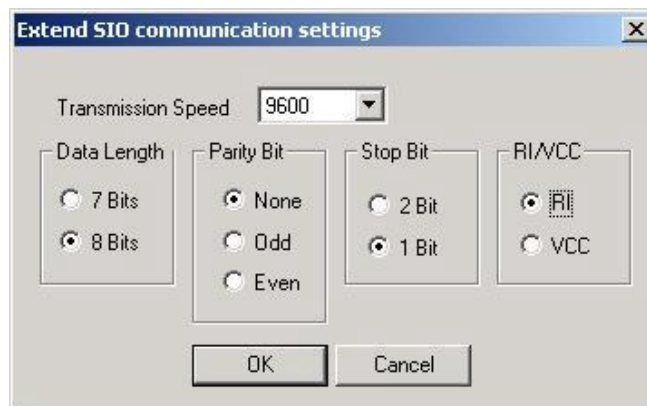Date: 01/14/2002
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Choose your communications settings pertinent to your Barcode scanner.

Press OK when complete.

Back at the Extended Settings Tab select *Serial Code Reader*.

Choose the start address to which your scanned data will be saved. In this case we have chosen LS Area word 500 as the first word.

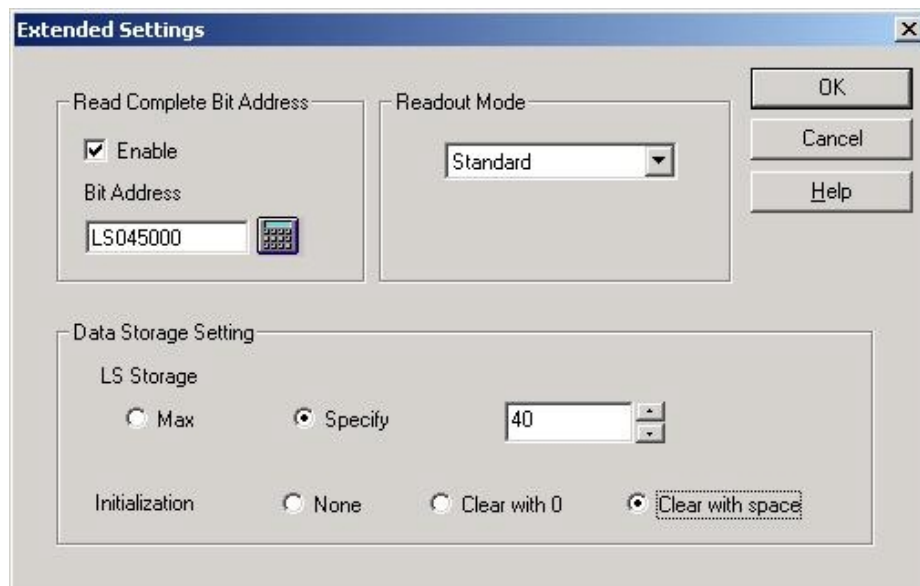Subject: Barcode Reader setup for GP/GLC 2x00 series   AN# 1108B
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Press the *Extended* button.

Read Complete Bit address – This bit is set high when a CR or CR+LF is detected. This bit represents the scanner having sent and completed a full read. As long as this bit is high all consequent scans are ignored. To input another scan to the GP/GLC this bit must be set low. Resetting this bit can be accomplished by using a button, logic, PLC, D-Script, Pro-Server or GP-Web.

Readout Mode – This is the format which the Scanner will be sending its data. Most North American Bar code readers use *Standard.*

        Standard -

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Code Data	CR

Code Data	CR + LF**

Binary data is not supported

Denso -

Header	Code Mark***	# of digits (4bytes)	Code Data	CR*	BCC

Touken -

Header	Code Data	CR + LF**

Data Storage Setting   - # or words used to store scanned data into the LS Area, starting
at LS0500 (previously set up), is either limited (*Specify*) or dynamic (*Max*). Dynamic
allow the # of words to vary depending on the length of the string being scanned.   If
you specify a finite length you can take advantage of the clearing features. The Length
is specified in BYTES. (Remember, 2 bytes = 1 word….. eg. 40 bytes = 20 words).

None -   word range is not cleared

Clear with 0 - word range is cleared first when a scan occurs by placing '0'
                            throughout the specified length in bytes

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Clear with Space -
>   This is the preferred method.

All the required setup has been accomplished. To extract or view data collect one must understand the way the data is stored. Let use the previous pages as a guide.

We chose LS0500 as the Start word.   When we scan in using a Standard setting a 40 byte string we get

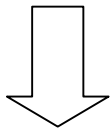LS0500   =   length of the scanned string in bytes
LS0501   =   Status

>   0001h = data has been successfully read
>   0002h = Error reading data. Data cannot be stored in
>   LS area
>   0003h = Data exceeds maximum storable bytes in LS
>   area

LS0502   =   Scanned Data (40 bytes worth)

LS0522

To display this data we would use an S-TAG with a start address of LS0502. The S-TAG automatically knows to display the entire length of the string.