

Connecting Citizen CLP printers to the IBM AS400 This is effectively a Unix type operating system

The Citizen range of Barcode printers have the ability to connect to many different computers. One type, the IBM AS400 seems to generate quite a few calls concerning difficulty printing. It can also cause problems connecting too it as well.

The following printers from our range can be connected to the AS400 (or Unix) type computers:

CLP 521*, CLP 621* (also the Z versions of these models), CLP 1001, CLP 2001, CLP 6001, CLP 6002, CLP 6401, CLP 7201e*, CLP 7202e*, CLP 7401, CLP 8301, CLP 9001, and CLP 9301 (known below as CLP521, 621, 1, 2, 6, 7, 8 & 9000 series). They will either accept AS400 commands immediately or require a firmware upgrade, depending on the original date of purchase of the particular printer concerned.

* these printers all have an IEEE 1284 interface and the ability to turn it off, which may help with communication between the printer and the AS400. AS400 computers have been known to error when connected to a printer with an IEEE1284 interface. CLP 521/621 - the option is available as standard in the Interface menu. CLP 7200 needs the very latest firmware, available on the web site.

Older printers in our range, CLP 404, CLP 4081 and CLP 4121 will not print from an AS400 unless a special external converter (TWINAX or other) is fitted to the printer. This makes the necessary changes to the code, enabling the printer to understand the commands from the AS400. It effectively converts the EECDIC code to ASCII and also converts non printable to printable characters. Please remember these printers only have the Serial interface.

Getting Started

In order for the CLP 1, 2, 6 & 7200e series and CLP 7401 printers to print from the AS400, the firmware or ROM Version needs to have a number 2 or higher (plus sometimes a letter) at the end of it, found by doing a self-test. If the version still has a 1, the ROM version needs to be upgraded, copies of all the latest ROM versions/firmware are available on our web site in the Distributor area (this is password protected, please contact your individual sales exec's if you do not know your access details).

CLP 521, 621, 7200e series, 8 & 9000 series have the AS400 function available as delivered.

To switch on the function in the printer do the following:

CLP 1, 2, 6 & 7200e series and CLP 7401.

Turn on printer holding down all three keys on the control panel, wait for the printer to react (usually a beep), it will report "**S Maint**" and then change to 9600bps (this is default, this may be different if already changed by the user)

Press **Pause key** (or button) – until "**Cmnd STD**" appears in control panel

Press **Feed key** (or button) – until "**AS4**" appears in the control panel

Press **Stop key** (or button) – This will save the setting (**Note** - if you have other settings to change, do these first in the System setup menu. Once all changes have been made press **Stop key**, all changed settings will be saved).

CLP 8 & 9000 series

Turn on Printer, wait for the “Ready” to show in the control panel, press the **MODE** key and “page set-up” appears.

Press the yellow “Up or Down” keys, until you arrive at “System Set-up”

Press “Select”, and then the yellow “Up or Down” keys until you see “Control Code”

Press “Select”, you will see Code “STD/ALT” with the cursor flashing under STD.

Press “Up or Down” keys to move to “ALT”, then Press “Select”– the control panel will change back to “Control Code”.

Press the “Up or Down” keys until you see “Save Settings”, press “Select”, move the cursor under the “YES” option and press “Select” again. Then “Exit” until you arrive at “Ready” in the Control Panel. (**Note** – not “saving settings” will result in any changes made being lost when the printer is turned off).

CLP 521/621

Turn on the printer holding the **Mode key**, all lamps will come on and the “Condition and Error” lamps will go out briefly. Release the key, the “Condition” lamp will come on and the printer will print about 5 lines of text, headed Citizen CLP 521 (or 621) Vue-Print Menu System, including the question “do you want to reset the factory settings?”

As this printer does not have a control panel is it a good idea to have a hard copy of the printer setup visible, therefore:

Press and release the **Stop key** (to say no to resetting the printer), wait a second or two, the printer will print another line, asking if you want to print “the current menu settings”.

Press and release the **Pause key** - (to say yes to the print out) the printer will print the full Menu settings and an additional section giving Machine information. The last line printed is “Do you want to change the menu settings”?

Look down the list of menu settings and you will see (in System Setup)/Control code - **STD** the normal default. This is the setting, which you need to change to **ALT** (as the CLP 8 and 9000 series)

Press and release the **Pause key** – you will see the question, do you want to change “Page Setup menu”, to say no, press the Stop key.

New question – Do you want to change “System Setup menu”, to say yes, press the **Pause key**.

New question – change sensor level, need to say no but to do this press “**Pause key**” (which actually saves the setting), and the printer will then print the next line.

You now need to move down the menu system until you get to “**Control Code**”, keep pressing the “**Save button**” (actually the **Pause key**) waiting each time for the printer to print.

At “**Control Code**”, you need to “change the value” this time, press “**Stop key**”, ALT will now show, (printer prints a new line) press **Pause key**, to save. You can now exit the menu system by pressing the **Mode key**. You need to press this button 3 times or until the printer beeps, to exit the menu system.

It is also possible to use the VuePrint commands, a much quicker process; this will allow you to change the printer settings just by sending a small PRN file to the printer. Details of these commands are available in the help folder; follow the link from the index. Alternatively go the web site and look for VuePrint commands in the distributor area.

Whichever printer from our range you are using, it is now set to receive AS400 commands

We are told the set up of the **AS400** is very simple. Select the generic printer, or the simplest printer you can find, the IBM 4212 or 4266 if available. By selecting any of these three printers the configuration of the printer port is done automatically, IBM have written all the code required to configure the printer and the output port. The CLP should now be able to receive data via the parallel port as the AS400 thinks it is talking directly to a printer configured by IBM

Once this is done, follow the sample file below, I have changed the "STX" command to "~" only when the code is changed to include the "tilde" will the printer understand the incoming code therefore will print what is required.

Explanation - The AS400 is not capable of sending non-printable commands; therefore the normal Datamax command used to send "start of label" commands etc to the printer, STX or [02] will not work. The change of setting made in the printers above will allow the any of them to interpret the alternative command used, the tilde (~).

Examples of the code changes are as follows; the sample code will print the word Big on three different labels, each label containing a larger print of the word "Big"

Using code which will work in the printers in Standard mode

STXL (the STX file is seen as a small box when viewed in MS notepad)

```
n
D11
1911A4800100010Big
E
STXL
n
D11
1922A4800100010Big
E
STXL
n
D11
1933A4800100010Big
E
```

Using the modified code below it is possible to make the printers work in the AS4 or Alternative (ALT) mode

It is possible to produce the same 3 labels with the word Big on each, using this code, changing only the STX to (tilde) ~ i.e.

```
~L
n
D11
1911A4800100010Big
E
~L
n
D11
1922A4800100010Big
E
~L
n
D11
1933A4800100010Big
E
```

The printer is now setup for AS400 working.

If you do not have immediate access to an AS400 or you want to test your code before installing on an AS400. It is possible to test the above sample or similar (with tilde instead of STX) on a modified printer (AS4 or ALT switched on), by sending the txt or prn file produced, from the Windows printer driver > “send file to printer” function.

Send File to printer via Driver

Click Start > settings > printers and faxes,

Right click on the printer icon, click properties

Click “Tools” Tab

Click “Action” button

Click “Send file to printer”

Presented with “Open Print code file” Window, allows you to locate the folder where the test file is stored.

At the printer, make sure it is on, has paper in it (also AS4 or ALT is Switched ON) and is connected to the Testing PC.

Click the file you want to send

Click open at the bottom right of screen, the file is sent to the printer.

If all is correct the printer should print your test file.