Checklist for Replacement of Aydin Display Generators and Monitors

Mirador Software's PC5200 PC-hosted emulation software can be configured in a number of different ways to replace a number of different models of Aydin Controls display generators.

Configurations of the Aydin Controls 5200 series display generators can vary widely. There are several models, including the 5205, the 5215 and the 5217, each having specific characteristics, and for each model, there is a range of options. Accordingly, it is important for Mirador to understand exactly how a given Aydin DG is set up in order to be able to taylor its

1) <u>Graphics character set</u>. Aydin provided a standard SCADA character set for the 5215 and 5217.

  05-5125 (05-5014A) 64 std alphanumeric and punctuation characters
  05-5052A (05-5014A) 32 std graphics characters (low codes)
  05-5053A (05-5014A) 32 std graphics characters (high codes)
  05-5055B (05-5054) 32 large Greek characters
  05-5056B (05-5054) 32 large numeric and punctuation characters
  05-5057B (05-5054) 32 large uppercase alpha characters
  05-5058B (05-5054) 32 large lowercase alpha characters

However, many Aydin DGs are fitted with special character sets customized for particular applications.

These character sets, or custom replacements for one or more of them, are defined by code in ROMs on the 5217 digital boards.   The situation is similar for the 5215. When Aydin did a custom character set, it usually produced a drawing of the character set and gave it a number in the same form as the numbering of the standard sets. Check system documentation for information about the character set(s) used, or have to look at the labels on the ROMs in the DG to see if there is a custom set there.

Another way to get at least a general idea about the character set is to compare the characters that appear on your displays with the characters represented on the standard key legends. (Take a look at the soft keyboard on my web site, which represents the standard configuration. The symbols on the keys correspond to the standard displayed characters.)

If it turns out that your DGs have custom characters, and these are not characters Mirador has already encountered elsewhere, then it will be necessary to make a special character set. If you have good documentation (a drawing showing each character) Mirador can work from that. If you don't have documentation, then the character set will have to be

documented (a drawing made of each character, a note made of the code = keyboard key associated with it).

2) Keyboard and function key assignments. Are the function keys on the DG keyboards assigned special functions by the system software? This refers especially to the array of 45 keys at the top of the keyboard. But the keys in the pad on the right side of the keyboard are also used as function keys. If these keys are assigned special functions, it might be desirable to have special legending on a replacement keyboard, or on the emulator's on-screen "soft" keyboard.

The standard builds of the emulator support standard 101-key PC keyboards. All Aydin keys are mapped to standard PC keys, but because of the limited number of keys on the PC keyboard, some PC keys must do "double duty" (certain Aydin functions become available only with Shift, etc. of certain PC keys.) Users who do not make extensive use of the Aydin function keys will probably find the standard PC keyboard satisfactory. However, some users might prefer a replacement keyboard that provides a separate physical key for each of the original Aydin keys.

The PC5200 can be configured to support a special 122-key PS/2 keyboard. This keyboard has a sufficient number of keys to permit one-to-one mappings of all the main keypad keys on the original Aydin keyboard. (It cannot provide individual keys to emulate the 45 function keys that are sometimes present above the main Aydin keypad.)

In addition, the Windows version of PC5200 has a "soft keyboard" in the form of a dialog window. The soft keyboard represents faithfully all the keys on the original Aydin keyboard, including the 45 function keys above the main Aydin keypad. This soft keyboard can be configured with special legending as desired.

3) Communications interface: The 5217 and 5219 use RS-232 serial communications with the system host. The 5217 supports a non-standard baud rate -- 25000 baud. This baud rate is not supported by the standard Windows serial device driver, and the Windows version of the emulator depends on that device driver. So, if we have to work at this baud rate, it will be necessary to use the DOS version of the emulator. There, Mirador has complete control of the serial device drivers. But it is more likely that your system is using a more standard baud rate like 19,200 or 9600.

The 5205 and 5215 can be configured for serial communications with the host system, but they are typically configured for parallel I/O. The most common parallel interface is a bi-directional 8-bit (plus parity) interface that supports a data transfer rate of about 600K bytes/second. This type of interface is implemented either with an ELCO 90-pin connector, or an Amp 2x50 pin connector (TVD-139 card).

For some host systems (e.g. Gould/Encore), the 5215 is fitted with a 16-bit bi-directional parallel interface implemented with an Amp 2x50 pin connector (TVD-239 card).

To support a interface, it is necessary to install a special digital I/O card in the PC that

will host the PC5200 emulator, and to configure the PC5200 emulator to use this card for communications.

4) Display format: Aydin DGs can be configured for a variety of different display formats:

   72 characters x 48 lines (504 pixels H x 336 pixels V) 5215 and 5217
   80 characters x 48 lines (560 pixels H x 336 pixels V) 5215 and 5217
   80 characters x 43 lines (560 pixels H x 301 pixels V) 5215 only
   80 characters x 34 lines (560 pixels H x 238 pixels V) 5215 only
   72 characters x 34 lines (504 pixels H x 238 pixels V) 5215 only

The standard build of the emulator supports the 80x48 format. If you are using one of the other formats, a special build of the emulator can be provided to handle this format properly.

5) Color palette: The older 5215 DGs could be configured to display orange (the default) or not. The standard build of the emulator supports the default color palette, including orange. If you don't use orange, or if there are other custom colors used, a special build of the emulator will be needed.

6) Display channels: The 5217 typically supports a single display channel (one RGB monitor), while the 5215 supports 4 text display channels and 4 trend display channels. The 5215 often used a separate monitor for each of the four channels. There are two ways to implement an emulator here. The 5215/17 emulator can drive a single display, and can display one of the four channels at a time. The operator can switch between channels. This is the way the standard build of the PC5200 emulator works.

Alternatively, it is possible to install a multi-port PCI graphics card in the PC that is hosting the emulator, and configure the emulator to support this type of graphics card. It is then possible to connect multiple monitors to the graphics card and have them display the separate channels simultaneously, emulating exactly the function of some 5215s. However, this alternative requires a special build of the emulator.

7) External alarm or other device. The 5215 and 5217 support connection of an external alarm (or other device that is controlled by a relay) that is under software control. Currently, the PC5200 implements this function as an alarm function using the PC sound card for the alarm. If it is necessary to control an external alarm or other device, a special build of the emulator will be required.

10) Additional configurable items. Other things, like DG address, character blink mode (to black or the default to reverse) can be handled with simple settings in the emulator menu system.

Trending

Some Aydin DGs are equipped with light pens. With the PC5200 emulator, the light pen, if present, is replaced with the PC mouse. The emulator already provides support for this function. It can be turned on and off at will by way of menu selections.

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