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Software Utilities

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There are some software utilities available to the ADAM-5000 systems. The DOS utility software helps you to configure your ADAM-5000. A DLL (Dynamic Link Library) driver is provided to write Windows applications, and a DDE (Dynamic Data Exchange) server is a service that links the ADAM-5000 systems to popular Windows packages such as Intouch, FIX DMACS, ONSPEC, Genesis and Excel.

5.1 ADAM Utility Software

Together with the ADAM-5000 systems you will find a utility disk containing utility software with the following capabilities:

- System and Module Configuration
- Module Calibration
- Data Input and Output
- Alarm settings between analog inputs and digital outputs
- Autoscan of connected modules
- Terminal emulation

The following text will give you some brief instructions on how to use the included utility.

Main Menu

The main screen consists of a menu bar at the top side of the screen and a status field which displays information about the connected modules. When you first start the program, it will automatically scan for any attached modules and display their data. The status field lists module characteristics, module configuration parameters and input or output values.

Figure 5-1 *Main screen*

Normally you will use the Search command to scan the network. Highlight the Search command on the menu bar and press <Enter> (or simply press the "s" key). The "Search Installed Modules" window will then appear to prompt you to enter the range it should scan. Input a value between 0 and 256 decimal.

Note: *When changing configuration, calibration or alarm parameters, you should always make sure that a window appears notifying you that the target module has confirmed the changes.*

An asterix sign "" before the module's address indicates that the module is in the INIT* state.*

Setup

Select Setup from the top bar and a selection bar will appear in the status field. First, move the selection bar over the module you wish to configure and select it by pressing <Enter>. A configuration screen will appear with the setting available for its module type and the

current values of its inputs. An example is shown in Figure 5-2 for an ADAM-5000 system.

Figure 5-2 *Setup options*

There are three different options: System Setting, Module Setting and Output Data.

Highlight the parameter you wish to change and press <Enter>. A window will appear with the configuration options for that parameter. Highlight the proper value and hit <Enter>. For some parameters, you will need to type in a specific value after selecting the parameter.

System Setting

The Checksum and Baud rate options need special attention since they can only be changed when an ADAM-5000 is in the INIT* state. To place a system in INIT* state, its INIT terminal should be connected to its GND terminal. If the ADAM-5000 is not in INIT* mode, an error message will appear. When it is in INIT* mode, a window to change the Checksum or an option window showing you the valid baud rates will appear, depending on your choice.

After you have made the changes for a block of parameters, press <ESC>. You will be asked if you are satisfied with the changes you have made or not. Answer "Y" to keep the changes you have made or "N" to leave the values unchanged.

Module Setting

A similar procedure applies for module setting. Note that only the ADAM-5017 and ADAM-5018 analog input modules provide alarm functions.

Once module setting is selected, the proper I/O module can be highlighted. To choose the highlighted module, press <Enter>. If an analog input module was selected, then options to change I/O type, Alarm functions or Channel settings are presented.

Pressing <Enter> for each available parameter will present a window with possible settings. Highlight the preferred setting and press <Enter> to select.

Channel setting configuration allows you to selectively Enable/ Disable any of the 8 channels numbered from 0-7. This option is only functional in ADAM-5017 and ADAM-5018 modules. Highlight the channel(s) which you wish to change and press the <Spacebar> to toggle between enable or disable. Press <Enter> to accept the change(s) and return to the main menu.

After you have made the changes for a block of parameters, press <ESC>. You will be asked if you are satisfied with the changes you have made or not. Answer "Y" to keep the changes you have made or "N" to leave the values unchanged.

Output Data

If you wish to set the values of a module's outputs, select the proper module from the screen and press <Enter>. Next, highlight the output channel and type its value. Note that digital outputs cannot be used when alarm functions are activated. After you have typed the changes, press <ESC> to exit.

Calibration

Press <Enter> on the Calibrate option on the top bar and a selection bar appears in the status field. Move the selection bar over the module you wish to configure and select it by pressing <Enter>. Only analog input and output modules can be calibrated. If the module is an analog input module, you will be able to choose, for example, Zero Calibration. The screen will then look like Figure 5-3.

Figure 5-3 *Zero Calibration*

File

This option allows you to update the status field using the Save option and can give you a hardcopy of all the connected modules that are shown on the screen by using the Print option.

Terminal

This option allows you to directly send and receive commands on the RS-485 line. It has two options: Command Test and Terminal Emulation.

Choose the Single Line option to use the Command Test mode. You send commands one at a time by typing them on the Command line and pressing <Enter>. The response appears in the Response line

underneath. To resend a command simply press <Enter>.

Choose Full Screen to select Terminal Emulation mode. This mode provides additional information on the configuration status under Settings shown at the right side of the screen. Previous commands and responses will remain on the screen for reference. To repeatedly send a command, press <F10> and a dialog box will appear into which you can enter the command. Press <Enter> to send the command which will automatically repeat. Press any key to stop repeating the command.

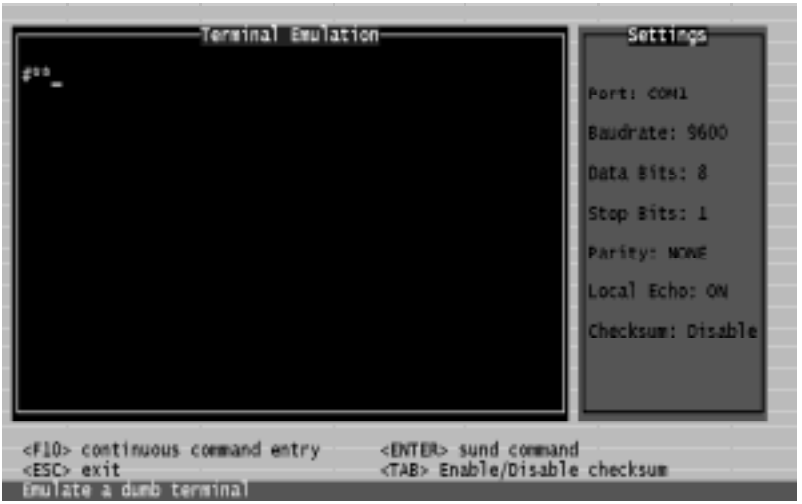

Figure 5-4 *Terminal emulation*

Download Procedure: New ADAM-5000/485 Firmware

A new set of firmware is provided for the ADAM-5000/485 to account for use of new ADAM-5000 I/O modules with the ADAM-5000 system. Follow the steps provided below to download the new firmware before attempting to use the new ADAM-5000 I/O modules.

1. Connect the COM port of the host computer with the RS-232 port on the ADAM-5000.

2. Set the node ID of the ADAM-5000/485 system to “0” and reset the ADAM-5000 system.
3. Run the ADAM Utility (ADAM.exe) under DOS to search for the ADAM-5000/485 at address “00h”.
4. When the ADAM-5000/485 appears on the screen, choose “Setup” and select “Download”.
5. Follow the steps listed on the screen to complete the firmware download

Note: The files ADAM.EXE, DOWNLOAD.IMG and RSROM.IMG should be installed in the same directory.

Quit

Choosing the Quit option exits the ADAM utility program.

5.2 DLL (Dynamic Link Library) Driver

The ADAM-5000 API Dynamic Link Library (DLL) enables you to quickly and easily write Windows applications for ADAM-5000 systems. The library supports both C++ and Visual Basic. Since ADAM-5000 systems communicate with a host computer through the host‘s COM port, no additional driver (DRV or VxD) needs to be installed. The DLL includes all necessary function calls to utilize the ADAM-5000 systems to their fullest extent.

Together with the DLL driver you‘ll find the source code of a Visual Basic example on your diskette. The example provides several control windows to communicate with all types of ADAM-5000 modules. You can customize the source code to create your own tailor-made ADAM-5000 setup program or monitoring system.

For details on the ADAM-5000 function calls refer to the Help file included on the ADAM-5000 API diskette.

5.3 DDE (Dynamic Data Exchange) Server

The ADAM-5000 DDE server takes advantage of DDE, a built-in Windows communication service. The DDE server acquires data from the ADAM-5000 systems and passes it to your application program via the hot link (DDE). The software can also pass control and configuration commands to the ADAM-5000 systems using the DDE protocol. You can now use ADAM-5000 systems with most Windows-based data acquisition software that supports DDE. Examples include Intellution's FIX DMACS, Wonderware's InTouch, ONSPEC, Paragon and Excel.

For details on the ADAM-5000 DDE server refer to the DDE server manual for the ADAM-5000.