



# AN-101

## APPLICATION NOTE

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### USING WINDOWS 95 HYPERTERMINAL TO COMMUNICATE WITH THE FM300

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#### INTRODUCTION

This application note describes how you can control the FM300 through the communications port of a PC, using the Hyperterminal application that comes with Windows® 95 and NT 4.0. With this connection you can set the FM300 measurement conditions, read a data sample, activate *Snapshot* and *Record* data collection functions and save FM300 data to a disc file or send it to a printer.

#### CREATING THE CONNECTION

To create a Hyperterminal connection:

1. From the *Start* menu, select *Accessories* then the *Hyperterminal* folder and then *Hyper Terminal*.
2. In the *Connection Description* dialog box, enter a name for the connection (e.g., FM300) and select an icon.
3. In the *Connect To* dialog box, click on the down arrow in the *Connect using* selection box and select the COM port that you are using to communicate with the FM300. Click the OK button.
4. In the *Port Settings* dialog box, set the *Bits per second* to 9600, the *Data bits* to 8, the *Parity* to none, the *Stop bits* to 1 and *Flow control* to none.
5. Select *Properties* from the *File* menu. Then select the *Settings* tab in the *FM300 Properties* dialog box.
6. In the *Settings* property sheet, click on the *ASCII Setup* button and check *Append line feeds to incoming line ends* in the *ASCII Receiving* group box.
7. If you wish to see what you type, check the *Echo typed characters locally* box. Then

click the OK buttons until you are back at the main screen.

The PC is now connected to the FM300 and you are ready to start communicating with the FM300. Make sure the RS232 cable is connected between the FM300 and the PC communications port, and the FM300 is in the remote mode.

#### SENDING COMMANDS TO THE FM300

To send a command to the FM300, just type it into the Hyperterminal main screen. The FM300 Instruction Manual lists the commands that can be sent to the FM300 and the corresponding FM300 responses. For example, type an \* and this will place the FM300 into the default measurement mode: rectangular coordinates, absolute measurement and X axis as the displayed component. The FM300 will respond with an A followed by the end-of-transmission (EOT) control character. The EOT character will appear as a clear square box indicating that the character is not printable.

To take a single sample, type ?. The FM300 will respond with A followed by the EOT character then the values of the three vector components separated by commas and finally, a D followed by the EOT character as shown below:

```
?A 2479,-6850, 58199
```

```
D
```

The A indicates that the command was received and the D indicates that the response is complete. If there is an error, an E will be displayed. If there is no response, the FM300 is not in remote mode or the RS232 cable is not connected between the FM300 and the computer.

## CAPTURING DATA TO A FILE

To capture FM300 responses to a data file:

1. From the *Transfer* menu, select *Capture Text*.
2. In the *Capture Text* dialog box, click *Start* to accept the default file name or enter a file name in the edit box and then click *Start*.

From this point on, data received from the FM300 will be appended to the specified file until the connection is closed or the *Capture Text* is stopped.

To stop capturing FM300 data, select *Capture Text* from the *File* menu then click *Stop*.

## SENDING DATA TO A PRINTER

To send FM300 responses directly to a printer:

1. From the *Transfer* menu, select *Capture to Printer*.

From this point on, all your typed commands and the FM300 responses will be sent to the printer as well as the screen.

To stop sending data to the printer:

1. From the *Transfer* menu, select *Capture to Printer*.

The *Capture to Printer* function will have a check mark in front of it when it is active.

## CLOSING THE CONNECTION

To terminate a Hyperterminal connection:

1. From the *Call* menu select *Disconnect*.
2. From the *File* menu select *Exit*.
3. In the *Hyperterminal* dialog box click *Yes* to save the FM300 session settings.

The next time you want to open a connection with the FM300, just double click the FM300 icon in the Hyperterminal folder.

## VIEWING CAPTURED DATA

You can view the data captured in a disk file by using a text editor such as Notebook (which is included in Windows 95) or Microsoft Word. The data is in standard printable ASCII characters (except for the EOT character) and is suitably formatted for importing to spreadsheets.

## SUMMARY

This application note has described how you can communicate with the FM300 through a COM port of a PC using the Hyperterminal application that accompanies Windows 95 and NT 4.0.

The FM300 Front Panel application that comes with the FM300 can also be used to remotely control the FM300. But it can only be run under Windows 95 or NT. For other operating systems, a simple serial communications application that is similar to Hyperterminal can be used to satisfy many needs. The only requirement is that the serial communication settings must conform to the following:

- Baud rate: 9600
- Data bits: 8
- Parity: none
- Stop bits: 1
- Flow control: none