# APPLICATION NOTE

## *Running PC9000 with Dynamic Data Exchange*

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## Overview

This application note describes the method used to set up Microsoft Excel as a remote monitor for data provided by PC9000 Application Software. There are two methods described here. The first uses Excel on the same computer that PC9000 is running on. The second method describes using Excel on a remote computer connected to your network.

## PC9000 and Excel on the Same Computer

Start PC9000 and select DDELinker from the Realtime menu of PC9000. The Field, Label, and Value from the fields will be shared through the DDE link. Up to ten DDE Link windows can be opened at one time. If more than one window is open, subsequent windows will be labeled with sequential numbers (i.e., DDE Linker 1, DDE Linker 2, …. DDE Linker 9, DDE Linker 10).

### Field

The number associated with each field variable is listed in this column. The link parameters for the Field's DDE remote reference include:

- Program: PC9000.
- Topic: DDELinkX, where X (range: 1 to 10) refers to the incident of the DDE Linker window.
- Cell: FieldNum(Y), where Y (range: 1 to 50) refers to the location of the desired cell.

> An example formula for Excel would be:
> =PC9000|DDELink1!'FieldNum(2)'.

### Label

The field names or labels associated with the selected table's variables are shown here. The link parameters for the Label's DDE remote reference include:

- Program: PC9000.
- Topic: DDELinkX, where X (range: 1 to 10) refers to the incident of the DDE Linker window.
- Cell: Label(Y), where Y (range: 1 to 50) refers to the location of the desired cell.

An example formula for Excel would be:
=PC9000|DDELink1!'Label(6)'.

## Value

The field values of the selected table are shown here. The link parameters for the Value's DDE remote reference include:

- Program: PC9000.
- Topic: DDELinkX, where X (range: 1 to 10) refers to the incident of the DDE Linker window.
- Cell: Value(Y) , where Y (range: 1 to 50) refers to the location of the desired cell.

An example formula for Excel would be:
=PC9000|DDELink1!'Value(8)'.

Start Excel on the same computer and enter the appropriate formula in the cell that is to receive data from PC9000. If the first row and first column in Excel is to receive data from the first Value row of the DDELinker 1 window, then enter the following formula in the Excel cell:

=PC9000|DDELink1!'Label(1)'

If the second row and first column in Excel is to receive data from the second Value row of the DDELinker 3 window, then enter the following formula in the Excel cell:

=PC9000|DDELink3!'Label(2)'

Up to 10 DDELinker windows can be opened at once with each one having fifty different data values being displayed. All of the 500 resultant values can be linked to Excel. Tests have shown that the data can be transferred at about 200 data values per second. This rate is dependent on the speed of the computer being used and other factors.

# Excel Running on Remote Computer

It is possible to run PC9000 on one computer and monitor the values on several different computers running Excel (Clients), all at the same time. In fact, it is possible to have several computers running PC9000 (Servers), each connected to a different datalogger, while monitoring the values from any or all Servers on any number of Clients. Confusing? Not really.

Running DDE over the network is only slightly more complex than running DDE on the same computer. The computer running PC9000 is referred to as the DDE Server. The remote computer running Excel is referred to as the DDE Client. There can be any number of DDE Server computers and Client computers operating at the same time. To install in Windows 95, follow these steps:

## Set up the DDE Server

1. Run DDESHARE.EXE which can be found in the Windows for Workgroups Resource Kit.
2. In the "Share Name" box, enter PC9000_1$.
3. In the "Topic Name" box, enter DDELink1.
4. Click on "Read-Only" under Access Type.
5. For each additional incident of DDE Server that will be run in PC9000 (when running more than 1 Real Time "DDE Linker" window), repeat steps 2 through 4 incrementing by one the number in the Share Name (PC9000_2$) and Topic Name boxes (DDELink2).
6. Run PC9000.
7. Select the DDE Linker from the RealTime menu and a table to monitor.

## Set up the DDE Client

1. Run NETDDE.EXE on each remote DDE Client. NETDDE.EXE is located in the Windows directory of the computer.
2. Start Excel and enter ='\\MIKE_ADAMS\NDDE$'|'PC9000_1$'!'Value(1)' in the first cell of excel that is to receive data ("MIKE_ADAMS" refers to the network ID of the host computer running PC9000).
3. To import additional shared data values to other cells of Excel, increment the index number following Value, ='\\MIKE_ADAMS\NDDE$'|'PC9000_1$'!'Value(2)'.

# Summary

This is an inexpensive and uncomplicated way to monitor data at several different locations at once. Each Excel Client can be individually programmed to monitor any available data, numerically and/or graphically as desired. It is left to the user to decide how the data is to be displayed.