

# Automatic Power-Outage Recovery with an Antaris Process FT-NIR Analyzer and RESULT Software

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One of the primary considerations in putting a Near-Infrared (NIR) analyzer online in a manufacturing process is how the analyzer will react in the event of a power outage on the factory grid. This document discusses the steps needed to set up an Antaris™ FT-NIR process analyzer to recover automatically from a power outage. Once recovered, the instrument can be set to either begin collecting data automatically to monitor and record process information as the plant recovers, or it can be left in a “ready-to-run” state until other systems come online.

The first step configures the Binary Instrument Operating System (BIOS) settings of the computer attached to the instrument to auto-launch the computer after power loss. To set the BIOS options, turn on the computer and, when prompted to enter setup, hit the appropriate key. This will launch the BIOS setup utility. From there, navigate to the section titled “Power Management” and select the “AC Recovery” option (versions of BIOS differ in the location of this setting. If you cannot find power options contact your IT department). Set this option to “On”. The computer will now automatically power on after power interrupt instead of requiring an operator to press a button. Figure 1 is a picture of how the “AC Recovery” option in the BIOS interface might look.

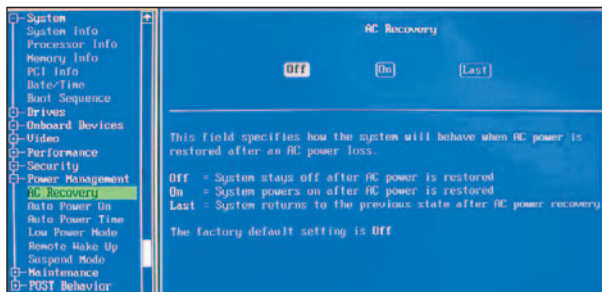


Figure 1: One version of the BIOS Setup utility for a PC

In highly-regulated environments, it is usually required that an operator log into a workstation using either a unique password or a pass key. If login security is required, then there are two main options to accomplish a recovery, remote desktop for the workstation or a remote computer. Remote desktop is the most efficient of the two, enabling a login by an authentic user over a network connection. To set up this feature, Microsoft® Windows® Remote Desktop must be enabled by going into the “System” control panel. The tab labeled “Remote” contains the activation for the Remote Desktop feature (Figure 2). This will allow a registered user to enter the required login over a network after power has been disrupted. Please check with your IT department to ensure compliance with company policy regarding this type of setup.

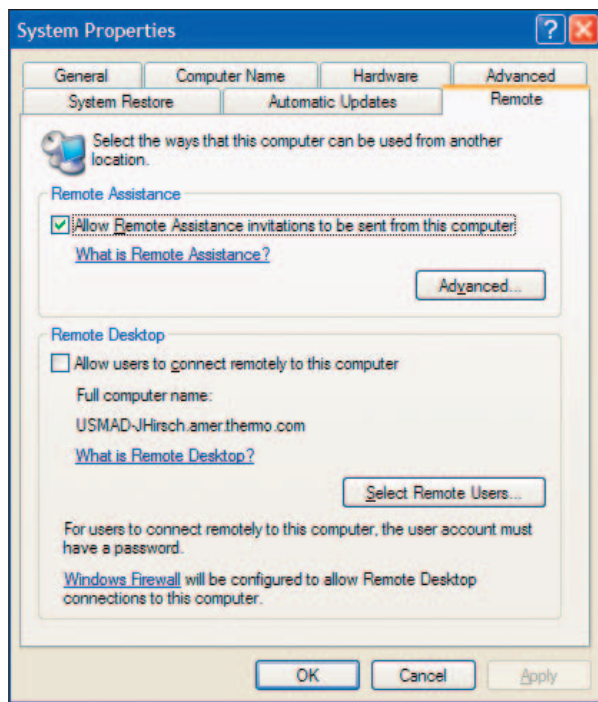


Figure 2: Microsoft Windows' Remote Desktop connection preferences

With the computer on and logged in, RESULT™ software must be automatically started. To accomplish this task, simply place a copy of the RESULT Operation shortcut in the “Startup” folder. To get to this folder, you can either use Windows Explorer (typically found under C:\Documents and Settings\localuser\Start Menu\Programs) or you can go in through the Start Menu Properties. The latter method is explained in detail below.

Right click on the Windows Start Menu and select “Properties.” The screen that comes up in Windows XP is shown in Figure 3a. Click “Customize” and then click “Advanced” on the next screen. You will get a Windows Explorer screen that is defaulted to a folder called “Start Menu” (Figure 3b). Open the “Start Menu” folder, expand the folder called “Programs”, and click once on the folder called “Startup.” The contents of this “Startup” folder will be launched automatically at computer power-up. Make a copy of the RESULT Operation icon on the desktop and place it in this folder. The next time the computer reboots, RESULT Operation will automatically launch. This same task can be accomplished using Windows Explorer to find the same “Startup” folder and copying in the icon.

At this point, both the computer and instrument are powered on, a legitimate user is logged in and RESULT Operation is open, all without operator interaction. The analyzer is now in a “ready-to-run” state.

## Key Words

- Antaris
- FT-NIR
- Power Outage
- Process
- Recovery
- Restart

There is another step that can be taken to get the analyzer online and running a specific workflow without operator interaction. Using either the Industrial Automation options in RESULT Operation or an OPC command, a specific workflow can be loaded and launched.

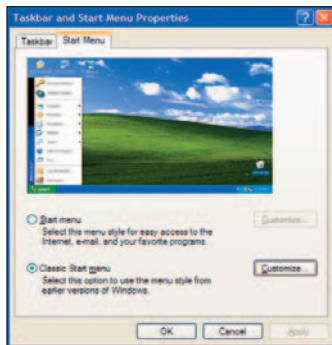


Figure 3a: Start Menu properties

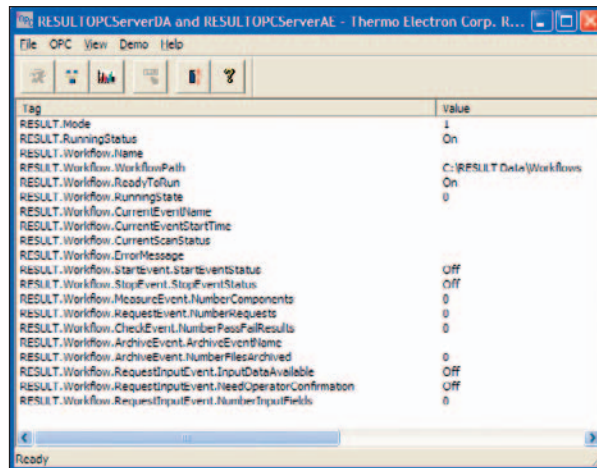


Figure 4: RESULT OPC Test Client General Tab

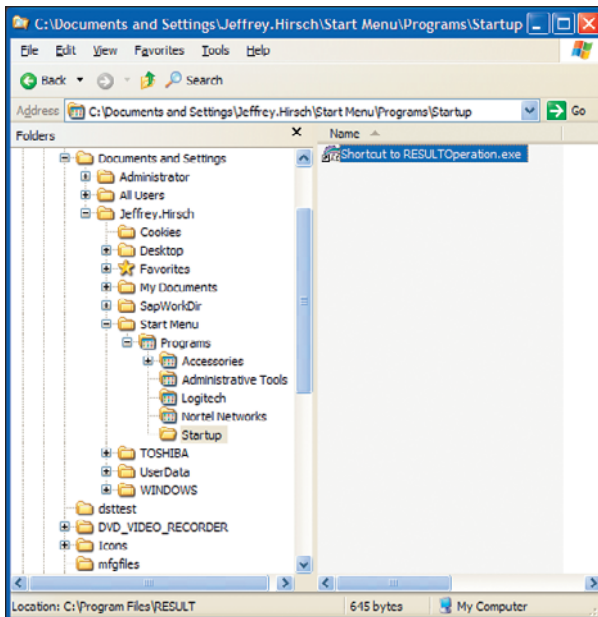


Figure 3b: Copying the RESULT Operation icon into the Startup menu

To use the OPC option available in all configurations of RESULT software, edit the values for the tags labeled Name, WorkflowPath and RunningState (shown in Figure 4 using the RESULT OPC Test Client). This will allow a remote operator to load and initiate any RESULT workflow on the local computer automatically. The only workflows available to be called in this manner are the ones that already exist in RESULT Operation's "Select Workflow" menu.

After power interrupt, if a PLC line is still active, or if the PLC is already online, RESULT software can read its input and use it to do the same thing as above – load and initiate a RESULT workflow. The settings used in this case (as opposed to the OPC case) are found in RESULT's "Industrial Automation Options" in the "Administration"

menu. Figure 5 shows the "Automation Options" dialogue. To have RESULT initiate a workflow, set the "Start Workflow" line number under "Workflow Controls" to the desired number on our Process Communications Controller (this process controller works in tandem with any regular PLC but serves as a bridge to RESULT software). This line should be selected as digital. At the top of this dialogue, under workflow, select the workflow that you would like to run. This setting will allow RESULT, once opened, to automatically select a specified workflow and begin running.

So once the power comes back up after an outage, you can be assured that your Antaris FT-NIR process analyzer will be back online automatically to help with diagnostics or to simply continue normal operation quickly and smoothly.

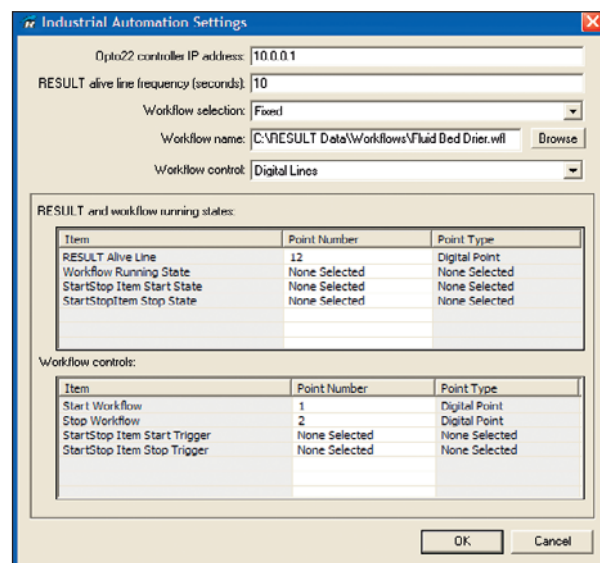


Figure 5: RESULT Industrial Automation Options in RESULT Operation

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