

Data Logging to USB Mass Storage Devices - Feature Overview

The file system on SCADAPack 300 Series controllers may be used for data logging to file. Included is the ability to log that data to a USB mass storage device, or to automatically transfer the log files to a connected mass storage device when inserted. The file system is also capable of retaining files when a firmware change occurs.

This document provides an overview of the new functionality in the latest firmware release of the SCADAPack 300 Series.

Availability

Support for data logging to USB mass storage devices is provided by the SCADAPack 330/334 and by the SCADAPack 350/357 with firmware upgrade to version 1.40.

A new PC application, called **SCADALog Data Converter**, is provided to retrieve logged data from the controller. This data log conversion utility converts binary files saved on USB mass storage devices to CSV file format. CSV files can then be ported to other applications for subsequent manipulation and analysis. This application is available free of charge.

Data Log to File - Use Cases

The use cases below demonstrate three methods where data logging to file may be used.

Case 1 – Log Internally with Transfer to Mass Storage

In this case multiple data logs are being performed to the internal file system and the auto transfer feature is enabled. When a USB mass storage device is inserted the data logs are copied or moved to the mass storage device. The mass storage device is removed from the controller and connected to a PC running SCADALog Data Converter, which then imports the log files from the mass storage device.

Case 2 – Log to Mass Storage

In this case there is a mass storage device already connected to the controller. Multiple data logs are configured to write the data to the mass storage device. At some point in time the mass storage device is removed. The data continues to be logged, but is stored to internal non-volatile memory. When a mass storage device is inserted the buffered data is copied to the mass storage device. SCADALog Data Converter is used to import the log files directly from the mass storage device.

Case 3 – Log to Mass Storage, Minimum On-Time

In this case the user desires a large storage capacity but at a minimum power budget. The USB host port is normally kept powered down to reduce power consumption. The data logs are configured to write to the mass storage device. Since the host port is powered down, the mass storage device is not accessible so the data is buffered to non-volatile RAM. At defined intervals the USB host is powered up for a fixed amount of time. When this happens, the mass storage device is recognized and the data logs are written to the mass storage device.

The mass storage device can be exchanged and taken to a PC running SCADA Log Data Converter so that the files can be imported directly from the mass storage device.

USB Media Supported

The mass storage device may be a USB memory stick or a USB hard drive.

Programming

Data logging to USB mass storage devices may be configured using TelePACE, ISaGRAF or C++ applications and is supported by new releases of the following products:

- **TelePACE 3.30**
- **ISaGRAF 2.40**
- **SCADAPack 300 Series C++ Tools 1.40**
- **Firmware Loader 2.50**