



Abstract

The core of our old dEX (starting from firmware 8.00) is the JSON process and flash player for the GUI. There was a bit of reconstruction on JSON processes and a bit of rework on GUI starting from firmware version 9.14, but GUI code is still the same flash player

The development of dEX 2.0 software responds to Adobe's announcement about Flash Player's end of life. We develop the software as a stand-alone computer software rather than a web interface like before. This software is no longer part of the logger to provide a better situation for fast sampling application. We did not develop dEX as part of the logger because the onboard implementation would limit sampling and loading speed. That will degrade the logger capability of measurement.

Introduction

The core scripting in dEX 2.0 uses Angular JS, a JavaScript framework that allows a single page application, and Electron to provide screen rendering GUI on the Windows platform. The extensive development of the core component to address dynamic scripting in DataTaker comprising schedules, channels, and option variants.

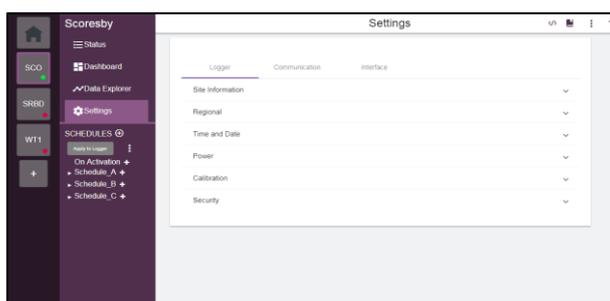


Figure 1: One Page Approach of dEX 2.0

The design of dEX 2.0 has simplicity in mind, thus using a one-page approach to access programming and data viewing. The software utilizes JSON call, and because the operational core resides in the computer, it minimizes the size of communication to the logger.

The data viewing feature does not use any database; thus, the data will get lost when exiting the software, it may change in a future release.

The Requirement

a. Operating System

At this moment, dEX 2.0 supports Windows, Mac, Linux, and Debian operating systems. You can download the software from this link: <https://datatakerforum.com/index.php?u=/topic/946/dex-2-0-version-2-1-25>

**b. The Firmware**

The onboard dEX (old dEX) since firmware version 9.14 and newer has a flash player script that contains JSON calls. dEX 2.0 uses the same JSON calls, making it possible to run it under a firmware version of 9.14, 9.16, and 9.18. But those versions of firmware have various bugs that are not suitable for installing in the logger.

The recommended version would be 9.20 or 9.22, which are downloadable from this link:

<https://datatakerforum.com/index.php?u=/topic/858/datataker-firmware>

c. The Logger Series

Within the DataTaker product, series 1, series 2 and series 3 are the past version. And the latest version is series 4. We recommend using dEX 2.0 on series 3 and 4 because these series have a 100% wiring configuration match with dEX 2.0.

If you question whether dEX 2.0 can also access your series-2 logger, the answer is yes but in a limited fashion, specifically on wiring arrangement. When we develop a series-3 logger, we add many new wiring configurations such as 2-wire resistance (1*R(2W)). That wiring was not available in series 2. So please take precautions on wiring configuration if you are using a series-2 logger. While for the series-1 logger, that series itself has no web interface; therefore, the hardware has no support to be accessed by dEX 2.0

Access Problem and Diagnostic

Even after the users manage to meet the above requirement; they may still fail to gain access to dEX 2.0. These are some of the common problems.

a. Port Restriction

dEX 2.0 utilizes port 80, so if there is a security setting that prevents access on port 80, you must disable it. Some of the security settings on port 80 could be anti-virus web security service, firewall, and gateway restriction.

One of the easy methods to check this restriction is using an individual PC/ laptop that is not configured with office network settings. If that personal PC can access the logger while the office PC cannot, there is a port restriction. You can set an exemption rule to overcome this.

b. Corrupted Firmware

In a rare case, the firmware upgrade process may trigger a corrupted file system. It usually occurred on a specific upgrade process in which the transfer of firmware.bin to the internal logger memory was not 100% completed. When the system file gets corrupted, you can't access the logger using dEX 2.0

c. PROFILE Setting Restriction

This bit came from the logger PROFILE setting, which you may miss, such as PROFILE HTTP_SERVER PORT=81. That command changes the web interface port from 80 to 81; thus, you can't use port 80 in dEX 2.0.



Because the logger PROFILE's setting controls different features, it will be hard to change each PROFILE to run dEX 2.0 manually. Thus we recommend resetting all PROFILES into the factory setting by sending the FACTORYDEFAULTS command via command interface (i.e., DeTransfer).

Diagnostic

This part is about viewing and diagnosing the fault. You can click on the menu "Development" – "Open Development Tools" and look for the "Console" tab.

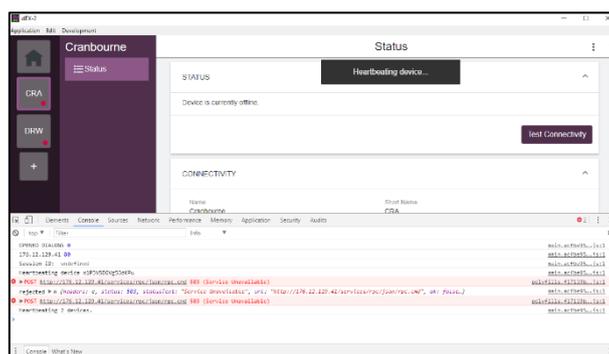


Figure 2: Console Diagnostic

These are some of the meaning of error:

- POST http://xxx.xxx.xxx.xxx/services/rpc/json/rpc.cmd **Heartbeating device**
 - The firmware does not match the requirement.
- POST http://xxx.xxx.xxx.xxx/services/rpc/json/rpc.cmd **503 (Service Unavailable)**
 - Logger is not contactable
- POST http://xxx.xxx.xxx.xxx/services/rpc/json/rpc.cmd **Timeout**
 - Proxy or firewall setting blocked the connection
- POST http://xxx.xxx.xxx.xxx/services/rpc/json/rpc.cmd net::ERR_CONNECTION_REFUSED
 - Incorrect port number or being blocked
 - Invalid IP address or being blocked
 - Use a USB cable, but there is no DTUsb running in the background
- POST http://xxx.xxx.xxx.xxx/services/rpc/json/rpc.cmd net::ERR_INVALID_HTTP_RESPONSE
 - Use a port number that is common for other function such as port 7700
 - The target port was not running on JSON script but still giving a response
- POST http://xxx.xxx.xxx.xxx/services/rpc/json/rpc.cmd **403 (Forbidden)**
 - Failed to open data connection
- POST http://hostname/services/rpc/json/rpc.cmd net::ERR_NAME_NOT_RESOLVED
 - Incorrect host name
 - No setting on DNS server to translate the host name