Daktronics XML to RTD (DXTR) Software

Installation & Operation Manual

DD1699931   *Rev 1 – 11 July 2013*

DAKTRONICS

DAKTRONICS, INC.

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Section 1:   Introduction

The purpose of this manual is to assist users with outputting and displaying XML files as Real-Time Data (RTD) using the Daktronics XML To RTD (DXTR) application. The XML files may be stored locally, as generated by another program, or read live over the Internet, such as from an RSS feed.

This manual includes the following main sections:

- **Introduction** covers basic information about the program and this manual.
- **Installation & Registration**, **Setup & Operation**, and **Creating Display Sequences** explain how to control and configure the application.
- **Contact Information** offers details about who to contact for help.

Daktronics identifies manuals by an ED or DD number located on the cover page. Any other documents referenced in this manual will be identified by the ED/DD number. For example, this manual would be referred to as *DD1699931*.

1.1   Software Requirements

- Windows® XP or higher
- CPU: 1 GHz or faster
- Memory: 512 MB

- 20 MB free hard disk space
- Internet access required when reading XML files online

1.2   Software Conventions

This manual contains the following software conventions and terminology:

Bold	Indicates an item that requires direct action, such as clicking, pressing, selecting or formatting.
Italics	Indicates onscreen text or labels that are not clickable.
Bold Italics	Used to reference items within the manual, such as figures or sections, as well as other documents and important notes.
[X]	Represents a keyboard key that needs to be pressed.
"Quotes"	Text or commands that may be typed. Quotes also indicate folder names.
Click	Press and release the left mouse button.
Double-click	Press and release the left mouse button twice.
Right-click	Press and release the right mouse button.
Select	Highlight or mark, such as by placing a check mark ✓ in a nearby box; clicking will not necessarily perform an action.
>	Followed by (ex. **File > Open**).

Section 2:   Installation & Registration

2.1   Installation

The DXTR program can be downloaded from the Internet:

1. Open an Internet browser.
2. Type "http://dakfiles.daktronics.com/downloads/Sports_Products/DXTR/" into the address bar.
3. Click the "DXTR_Install.exe" file.
4. In the window that appears, click **Run**. If an additional window opens, click **Run** once more.
5. Follow the onscreen instructions.
6. Click **Finish** when done.

2.2   Registration

When the DXTR program is first opened, users are required to attain a new software license in order for the program to work.

To renew the subscription:

1. Highlight and Copy the *Lock Code*.
2. Email the *Lock Code* to support@dakstats.com with the subject line "DXTR Lock Code" and a license file will be emailed back.
3. When the license file is received, save it to a location that is easy to remember, such as "My Documents" or the "Desktop".
4. Click **Load License**, and then locate and open the license file.
5. Click **Continue** to begin using the DXTR program.

Section 3:   Setup & Operation

After opening the DXTR program, users will see the main application screen (*Figure 1*). Here users may view and configure the RTD outputs from the preconfigured inputs, as well as adjust the paging settings for the input maps. Users may also view messages of all application actions that have taken place since it was first opened.

3.1   Inputs

Creating Inputs

To create inputs, the user must contact Daktronics with a detailed description of what XML file or URL will be used, as well as what specific data should be taken from the file.
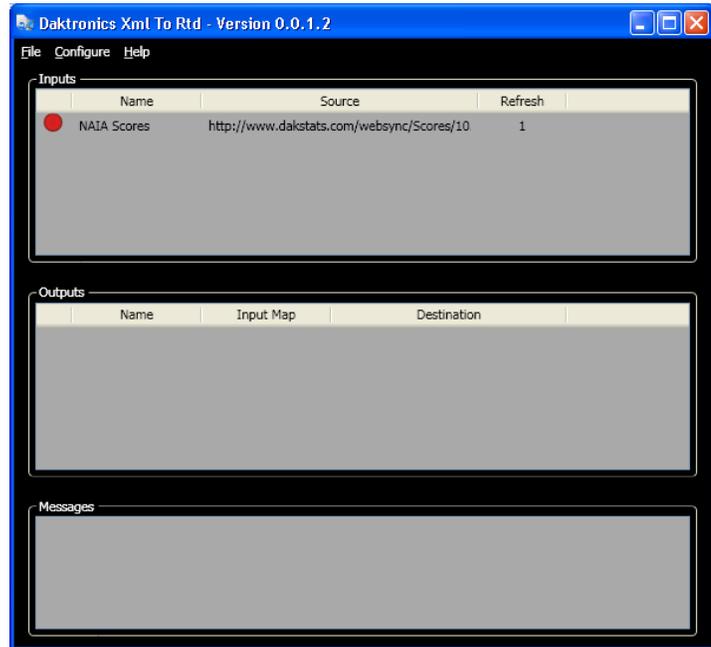

Figure 1: DXTR Main Application Screen

IMPORTANT! Users must have permission from the data provider to show the desired information on their displays. Daktronics may not be held responsible for unauthorized transmission of copyrighted content.

Daktronics will create an appropriate input map file and send it to the user. All input map files must be saved in the following directory:
"C:\Documents and Settings\All Users\Application Data\Daktronics\DXTR\Maps" for **Windows XP** or "C:\ProgramData\Daktronics\DXTR\Maps" for **Windows 7**.

When the DXTR program is opened, all configured inputs (max of 10) should appear under the *Inputs* list at the top of the screen (*Figure 1*).

Configuring Inputs

To configure an input:
- Click on an input from the list and then go to **Configure > Edit Input**.
- Right-click on an input from the list and select **Edit Input**.

In the *Configure Input* window (*Figure 2*), the following settings may be edited:

- The *Refresh Time* sets the number of seconds to wait between reading the information coming from the XML file. The default and minimum number is "6".
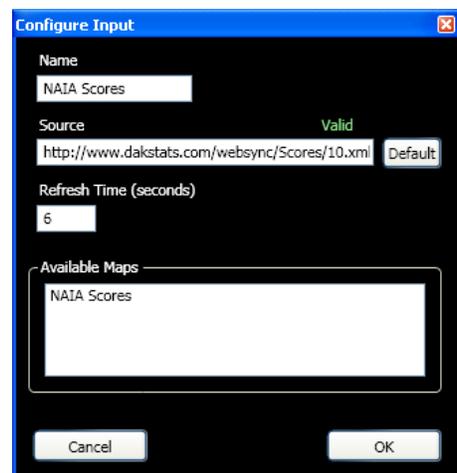

Figure 2: Configure Input Window

- The *Source* is the path from which DXTR is pulling the information. If the source is incorrectly formatted, Invalid will appear above it; otherwise it will display Valid. Click **Default** to return to the original source settings.

Click **OK** when finished.

Monitoring Inputs

Right-click the input in the list and select **Monitor**. This will open the *Input Monitor* window (*Figure 3*) to view the XML file that the input is currently reading from.

Use this window to make sure the input is reading the correct XML file.
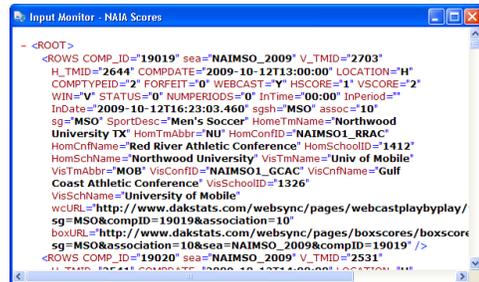
Figure 3: Input Monitor Window

3.2 Outputs

Creating Outputs

To create an output:

- Go to **Configure > Add Output**.
- Right-click in the *Outputs* list and select **Add Output**.

In the *Configure Output* window (*Figure 4*), enter the following settings:

- *Name:* type in a descriptive name for the output.
- *Map:* select an input map to read from.
- *Flush Buffer Duration:* type in the number of seconds to wait before resending the output data; leave at "0" to send data only at the specified hold time (see *Section 3.3*).
- *Port Configuration:* click **Configure** to set up the output port (*Figure 5*):
  - *Type:* Typically this will be **UDP/IP**.
  - *Port:* With **UDP/IP** selected, type in an available port number.
  - Click **OK** when finished configuring the port.

- Click **OK** when finished configuring the output.

After creating an output, it will appear in the *Outputs* list in the middle of the main application screen.
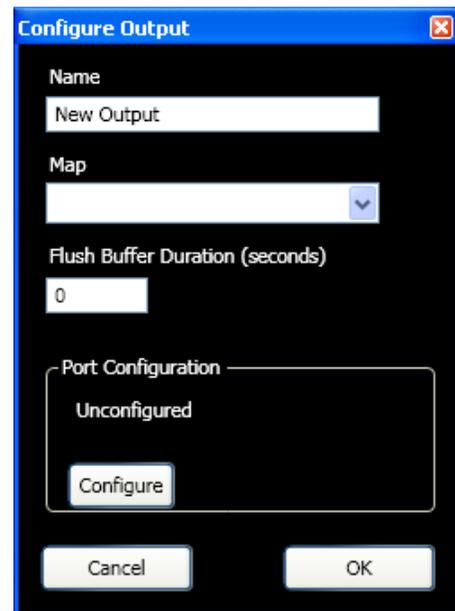
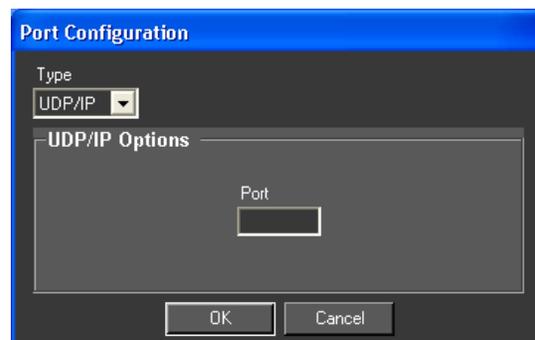*Note:* There is a maximum of 10 outputs.

Figure 4: Configure Output Window

Figure 5: Port Configuration Window

Editing Outputs

To edit an output:

- Click on an output from the list and then go to **Configure > Edit Output**.
- Right-click on an output from the list and select **Edit Output**.

Editing an output will open the *Configure Output* window as shown in . Adjust any of the output settings as needed and click **OK** when finished to save the changes.

Deleting Outputs

To delete an output:

- Click on an output from the list and then go to **Configure > Delete Output**.
- Right-click on an output from the list and select **Delete Output**.

Monitoring Outputs

Right-click the output in the list and select **Monitor**. This will open the *Output Monitor* window (*Figure 6*) to view the information being outputted as RTD.

Use this window to make sure the output is correctly sending out data.

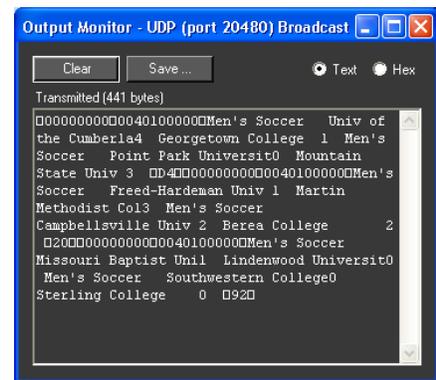*Note:* In order to see the output data, users must first start the output (see *Section 3.5*)

Figure 6: *Output Monitor Window*

3.3   Editing Input Maps

Maps link between the information that comes through an input and the fields that will be displayed. Maps are created by Daktronics (see *Section 3.1*), but there are a few settings that users can configure.

1. Go to **Configure > Edit Maps**.
2. In the *Configure Map* window (*Figure 7*), select the map to edit from the *Maps* drop-down box.
3. Under the *Paging* options, use the drop-down box to select the type of data to page. The same XML input may have several paging lists with different information to display.
4. Use the *Hold Time* to determine how long in seconds to display each group of items before moving to the next data set.
5. Enable **Wrap Items At End** to place items at the end of the list that would normally be at the beginning to fill in all the spaces. If this option is disabled, there may be blank spaces at the end of the list.
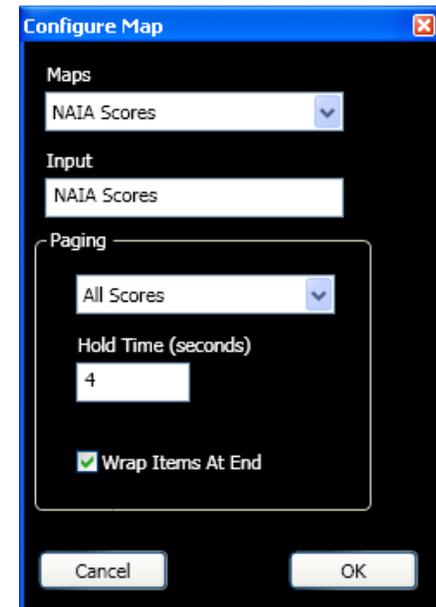
Figure 7: *Configure Map Window*

Note: Individual items may also be word wrapped across several lines. This must be specified to Daktronics when creating the input maps.

3.4   Generating ITFs

An Input Template File (ITF) is needed for Daktronics display controllers to know when one piece of data ends and another piece of data begins within a continuous output stream. ITFs are used when creating the RTD display sequences (see *Section 4*).

To generate an ITF:
- Click on an input from the list and then go to **File > Generate ITF**.
- Right-click on an input from the list and select **Generate ITF**.

1. In the *Browse For Folder* window, navigate to the directory where the ITF should be saved, and then click **OK**. ITFs will typically be saved in the "C:\V7000" or "D:\V7000" folder.

   Note: If an input has more than one map, users will have to select which map to use before saving the ITF.

2. When the file is successfully generated, click **OK**.

3.5   Sending Data

Before starting the output(s), make sure all of the following steps have been performed:

- Configure the input(s) (*Section 3.1*).
- Create the output(s) (*Section 3.2*).
- Set the input map paging options (*Section 3.3*).
- Generate an ITF (*Section 3.4*).

Once the above settings are correct, go to **File > Start** to begin outputting the data across the configured port(s).

   Note: If all inputs and outputs are properly configured, the output(s) will autostart the next time the program is opened.
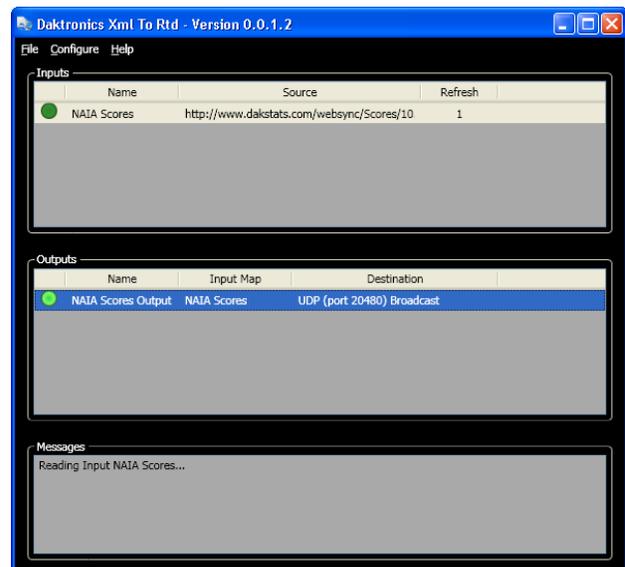

***Figure 8:** Output Started*

The indicators to the left of each input and output turn bright green when sending or receiving and dark green when connected but idle (*Figure 8*). If an input indicator is orange, the XML source cannot be read, and the error will also be displayed in the *Messages* area.

3.6   Help Menu

- Go to **Help > About** to view program, licensing, and system information.
- Go to **Help > View Manual** to open a PDF version of the software manual.
- Go to **Help > View Today's Log File** to open a text file containing a list of program events for the current day. Use the log file to troubleshoot any problems with the input or output connections.

Section 4:   Creating Display Sequences

With the DXTR program running and minimized and the correct ITF generated, users may create the display sequence that will show the XML data as RTD.

Note: This section focuses on the Venus® 7000 display control software. Refer to the documentation provided with the particular Daktronics display control software in use for more information on setting up RTD inputs and display sequences.

4.1   RTD Input Setup

1. Open the "Venus 7000 Shell".
2. Click **Configure**, and then click the **RTD Inputs** tab.
3. Click an available RTD input, and then click **Edit Input**.
4. Set up the input as follows (*Figure 9*):
   - *Name:* A descriptive name that makes sense to the user for the type of data being displayed
   - *Source Type:* **UDP/IP SOCKET**
   - *Source:* Enter the UDP output port number set up in DXTR (refer to *Section 3.2*)
   - *Protocol:* **Enhanced**
   - *Default Input Template:* Select the ITF created in DXTR (refer to *Section 3.4*).

Figure 9: Edit RTD Input Window

5. Click **OK** on the *Edit RTD Input* and *System Configuration* windows, and then restart the sign service when prompted.
6. To make sure the settings have been configured properly, click **Diagnostics,** and then click the **RTD** tab.
7. Select the DXTR Input that was just created, and data from the XML file should appear (*Figure 10*).
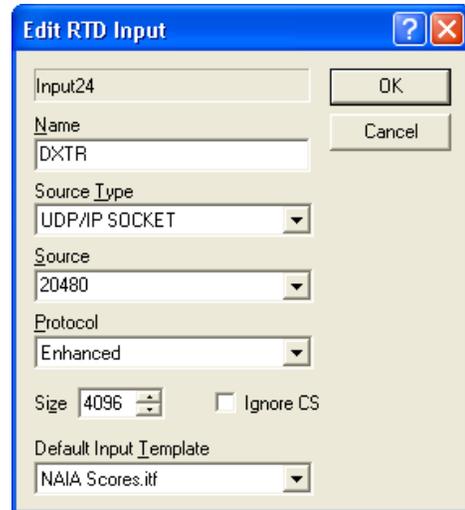
   Note: It may be necessary to click **Refresh** to make the data appear.
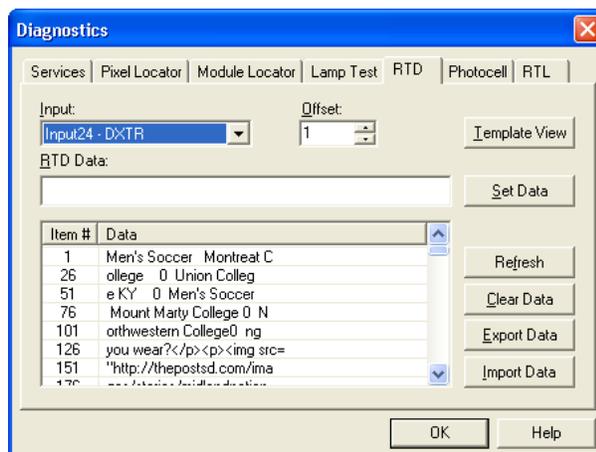
Figure 10: RTD Diagnostics

4.2　RTD Sequence Setup

1. From the "Venus 7000 Shell", click **Edit**.
2. Open or create a new sequence for the sign that will display the XML data.
3. Go to **Frame > Insert > Data Frame**.
4. In the *Frame Properties* window, click the **Data Field Parameters** tab.
5. Set up the data field as follows:
   - *Field Type:* **RTD**
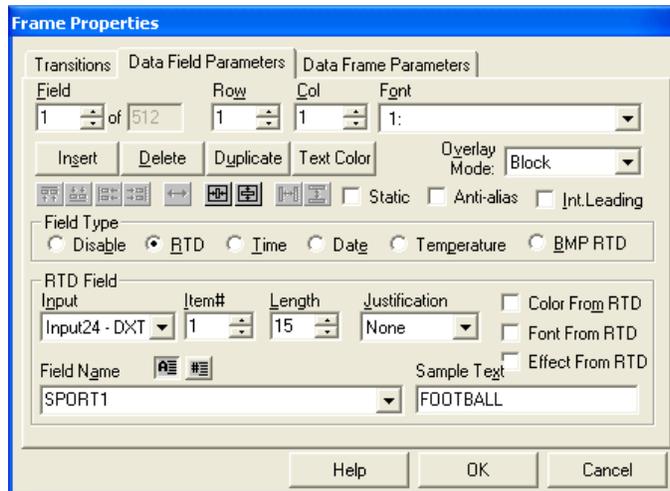   - *Input:* Select the input created in *Section 4.1*

Figure 11: Frame Properties Window

6. Under the *Field Name*, select a field from the ITF that corresponds to a piece of data from the XML file.
7. Change the *Field* number to "2" and repeat steps 5-6 until all desired pieces of data are in the display sequence.
8. After assigning the item numbers to each data field, click **OK**. Be sure to delete the first graphic frame (**Frame > Delete**).
9. Click the preview button (or press **[F5]**) to view the sequence and ensure the correct data is displaying (*Figure 12*).
10. Modify the appearance of the sequence as desired and **Save**.

Figure 12: Sample Display Sequence

Section 5:   Contact Information

If there are any questions about the DXTR program, please contact DakStats Customer Service:

Mail: Daktronics, Inc., Customer Service
201 Daktronics Drive
P.O. Box 5128
Brookings, SD   57006

Phone: DakStats Help Desk: 1-888-325-7828

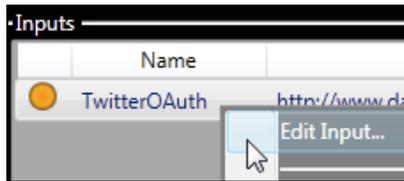**DakStats Fax:** 1-605-697-4700 Attn: DakStats

Email: support@dakstats.com

Appendix A: Twitter Feeds

Input Creation & Authorization

Twitter requires authentication before DXTR can read and parse tweets for display.

1. Contact Daktronics (support@dakstats.com) to request the DXTR Twitter Map File.

2. Once the "TwitterOauth.xml" file is received, copy it to:
    "C:\Documents and Settings\All Users\Application Data\Daktronics\DXTR\Maps" for
    Windows XP or "C:\ProgramData\Daktronics\DXTR\Maps" for **Windows 7**.

3. Open DXTR after copying the map file to the correct directory.

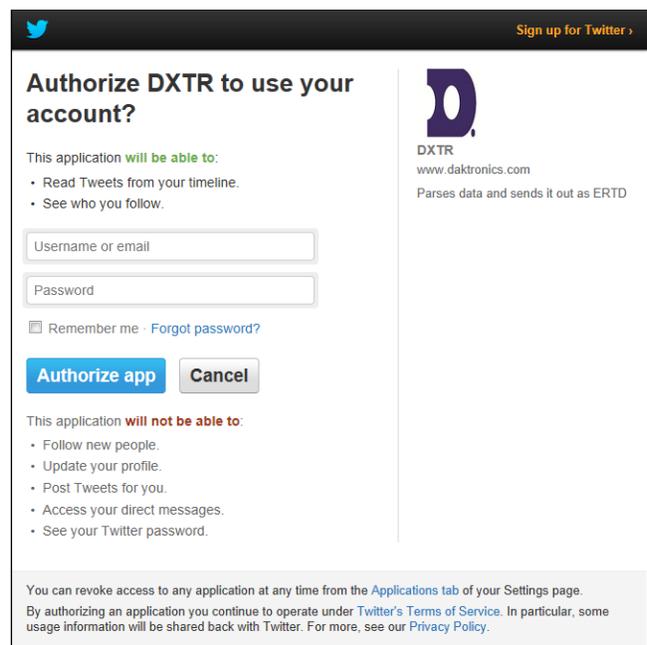4. Right-click "TwitterOAuth" in the *Inputs* section and select **Edit Input**.

5. In the *Configure Input* window, click **Authenticate**.
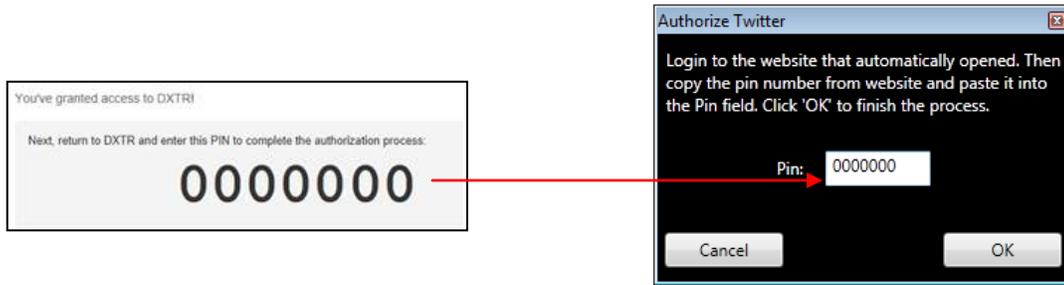

6. At this point, the software will bring up an internet browser window requiring the user to login to their twitter account.

7. Enter valid Twitter account login credentials and click **Authorize app**.

> **Note:** This is not necessarily the account that tweets will be pulled from; Twitter just requires a valid login for the DXTR software to access their data feeds.

8. Once logged in, Twitter will provide a unique PIN. Copy and paste the PIN into the *Authorize Twitter* window in DXTR, and then click **OK**.

9. Back on the *Configure Input* window, notice that the word "Authenticated" now appears after successfully granting access to DXTR.

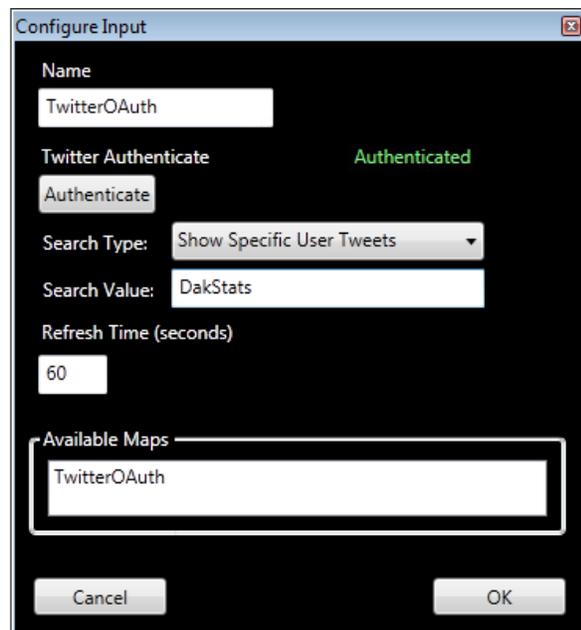   **a.** Select the *Search Type*:

- **Show Specific User Tweets**: (*Recommended*)
  Select to show tweets for the specific Twitter account entered in the *Search Value* field.

  Use this option to show tweets that are retweeted to a specific "display only" Twitter account to allow for message moderation.

- **Search All Tweets**: Select to return all tweets that include the term(s) in the *Search Value* field.

  Use this option carefully!
  There is no moderation with this option, so any tweet that includes the *Search Value* will be returned.
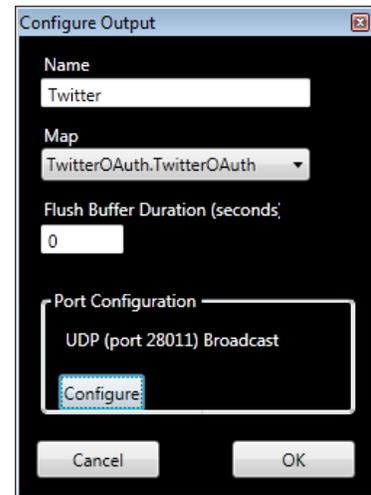

Entering multiple search terms will make the search more exclusive NOT inclusive. For example, "DakStats, Daktronics" will only show tweets that include both of these terms and not every tweet that has either term.

    b. Ensure the *Refresh Time* is no less than 30 seconds. Twitter will turn off an RSS feed if something hits it more than 150 times per hour, so a refresh rate over 30 seconds shouldn't max that out.

10. Click **OK** when finished.

Output Creation & ITF Generation

1. Go to **Configure > Add Output**. In the *Configure Output* window, set up the output as follows:
    *   *Name:* "Twitter" or descriptive name of feed
    *   *Map:* "TwitterOAuth.TwitterOAuth"
    *   *Flush Buffer Duration:* typically "0"
    *   *Port Configuration:* Click **Configure**, select **UDP/IP** as the *Type*, set the *Port* number (typically "28000" range), and click **OK**.
    *   Click **OK** again when finished.

2. Close and reopen DXTR. There should be green indicators next to both the *TwitterOAuth* input and *Twitter* output to show they have been created and authenticated correctly. If not, double-check the settings and right-click the input/output and select **Monitor** to verify data is being received/transmitted.

3. Right-click the input and select **Generate ITF**. Navigate to the appropriate directory (typically "D:\V7000") and then click **OK**.

    Note: If using Content Studio for DMP-7000 or DMP-8000, there are a couple additional files that will be needed. Please contact Daktronics to have these files created and installed.

4. Create the Venus 7000 RTD input to match the UDP output, and then create the display sequences with RTD fields like any other data source. Refer to *Section 4*.

    Note: Again, if using Content Studio, additional setup is required to create RTD inputs. Please contact Daktronics.

RTD Field Settings

ITF: "TwitterOAuth"

RTD Field Name	Item#	Length	Field Type
Twitter_1_Username	1	30	RTD
Twitter_1_ScreenName	31	30	RTD
Twitter_1_UserAvatar	61	200	BMP / Media RTD
Twitter_1_TweetText_1	261	100	RTD
Twitter_1_TweetText_2	361	100	RTD
Twitter_1_TweetDate	461	20	RTD
Twitter_1_TweetPic	481	200	BMP / Media RTD

The default ITF is configured to show up to 200 characters of text per tweet, wrapping to a new line at 100 characters. There are also extra fields for username, screen name, user avatar, tweet date, and a tweet pic if applicable. DXTR will display all tweets specified in the input *Search Value* one tweet at a time for 10 seconds each. To change any of these default settings, please contact Daktronics.