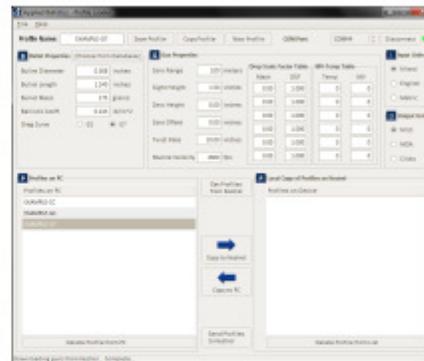


# **Kestrel**<sup>®</sup> **Shooter's Weather Meter** with Applied Ballistics

## APPLIED BALLISTICS PROFILE LOADER APPLICATION INSTRUCTIONS



[NKhome.com](http://NKhome.com)

800.784.4221

## Overview

The Applied Ballistics Profile Loader has been created to easily create profiles which contain both bullet and weapon information. Profiles may be created on a PC through the application or directly on the Kestrel and transferred via the software. Through this application, the entire Applied Ballistics Custom Drag Curve database as measured by Bryan Litz is available. By utilizing these drag curves instead of the standard G1 or G7, greater accuracy can be achieved at farther distances.

*Note: In order to connect to the device, a Bluetooth connection or Kestrel Computer Interface device must be utilized. This tutorial does not cover installing the Bluetooth or the Kestrel Computer Interface. Instructions for both are located on the Nielsen-Kellerman Kestrel Web Site.*

## Choosing the Correct Version of the Profile Loader

In order to ensure compatibility between the Applied Ballistics Profile Loader and the Kestrel device, you must use the correct version of the profile loader. The Kestrel firmware version is shown as the device starts and the version of the profile loader can be determined by selecting the About menu option.

Kestrel Firmware Version	Applied Ballistics Profile Loader Version
<b>4.76</b>	<b>Build 024</b>
<b>4.78</b>	<b>Build 029</b>

## Migrating Profiles from an Older Version of the Profile Loader

Version 4.78 of the Kestrel firmware has several upgrades to the Applied Ballistics software. To migrate existing profiles from pre-existing versions of the profile loader, the following steps are recommended.

- 1) Use Build 024 of the Profile Loader to connect to the Kestrel running version 4.76 of the firmware
- 2) Download the Profiles from the Kestrel to the PC and ensure that they are listed in the **Profiles on PC** by using the **Copy to PC** button.
- 3) Navigate to the folder where the profile loader is located and create a copy of the **Profiles** folder on your desktop.
- 4) Download Build 029 of the profile loader to your computer and extract to the desired location.
- 5) Navigate to the folder where the new profile loader is located.
- 6) Move the contents of the **Profiles** folder on your Desktop (Step 3) into the new profile loader folder.
- 7) Upgrade the Kestrel firmware per the instructions on the Nielsen Kellermen web site to version 4.78.



Name	Date modified	Type	Size
Device	10/22/2013 1:02 PM	File folder	
Files	10/22/2013 1:02 PM	File folder	
Profiles	10/22/2013 2:47 PM	File folder	
Launch AB Profile Loader	4/30/2013 12:00 PM	Shortcut	2 KB

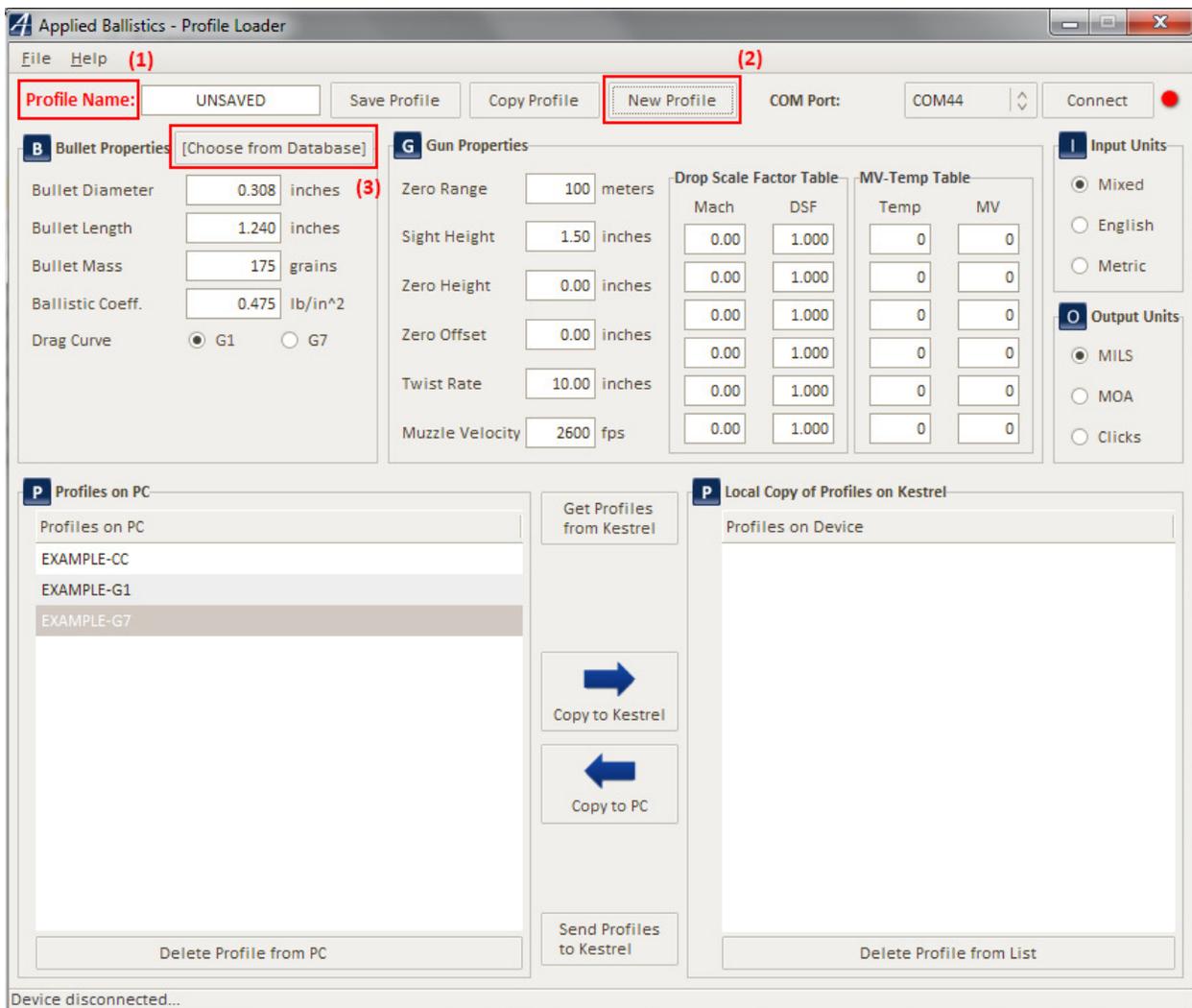
The upgrade is now complete and Build 029 of the profile loader will work with the upgraded firmware.

## Creating a New Profile and Selecting a Bullet from the Database

When the application is launched, a default profile is created. The default profile is referred to as UNSAVED to help remind users that the current profile is not saved and additionally, the **Profile Name (1)** label is turned red. The **Profile Name (1)** will always turn red when the user has made a change to the profile and the current changes are not yet saved.

To create a new profile and select a bullet from the database:

- Click the **New Profile (2)** button – Note that the **Profile Name** has turned red and the name is **UNSAVED**.
- Click the **Choose from Database (3)** button and a new dialog box will appear for selecting a bullet from the database.

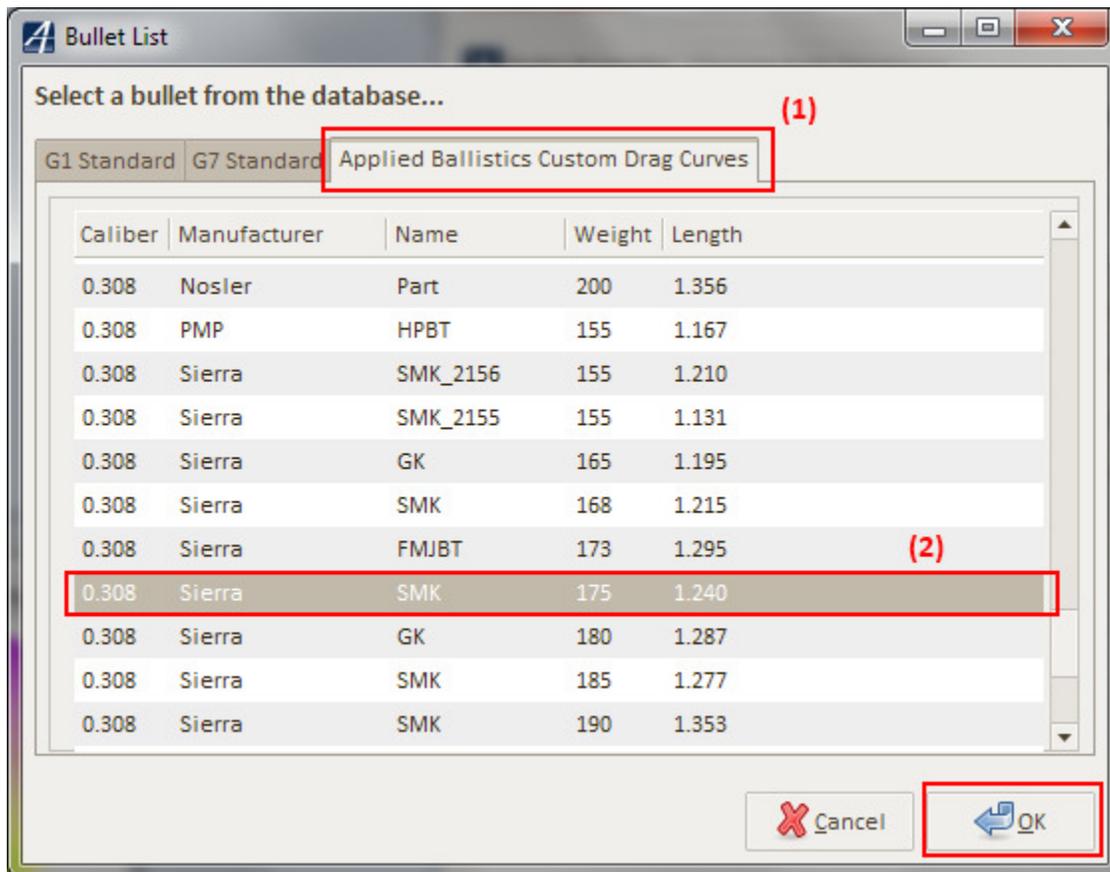


## Selecting a Custom Drag Curve from the Applied Ballistics Library

The Applied Ballistics bullet database contains the ballistic Coefficients (BC) as measured by Bryan Litz for several bullets. However, to gain the greatest accuracy at extreme ranges, utilizing one of the **Applied Ballistics Custom Drag Curves (1)** is recommended.

To access a bullet from the database:

- Select either the **G1 Standard**, **G7 Standard**, or **Applied Ballistics Custom Drag Curves (1)** tab from the bullet database window.
- Select the bullet from the database by double clicking it or selecting it and clicking the OK button. In this case, we've selected the **175 grain 0.308" SMK (2)** custom drag curve.

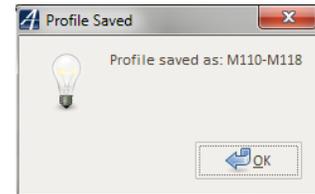
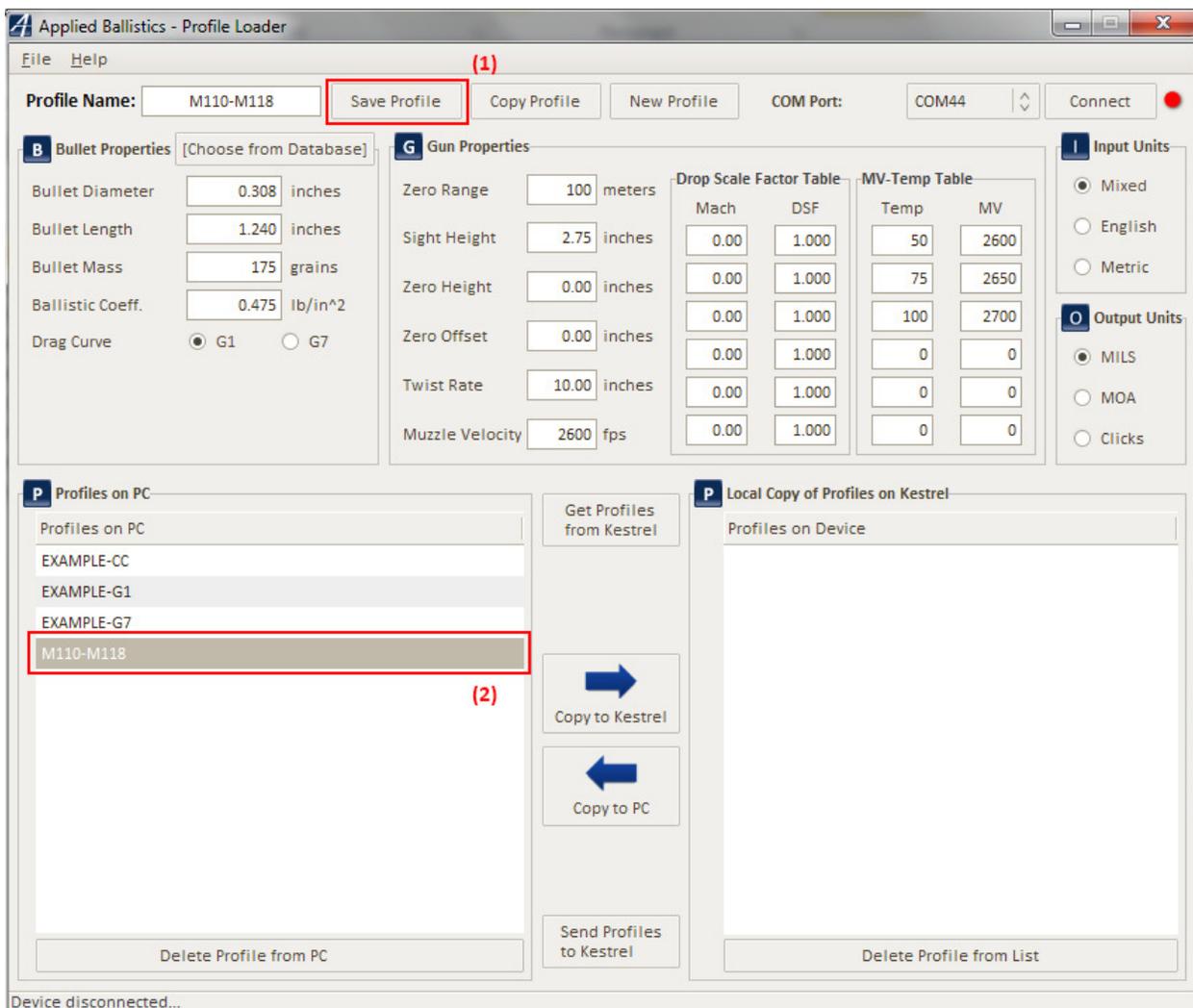


## Saving a Profile

Once the bullet has been selected from the database, the **Bullet Properties** will populate automatically. Alternatively, the bullet properties may be entered manually. The user is responsible for entering the **Gun Properties** as each weapon will be unique.

To save a profile:

- Provide **Profile Name** that is 10 characters or less that you will remember and be easily able to recall on the Kestrel Shooter's Weather Meter.
- Click the **Save Profile (1)** button and the dialog box to the right will confirm that the profile is saved.
- The newly saved profile will be listed in the **Profiles on PC (2)**.

**Applied Ballistics - Profile Loader**

File Help

Profile Name: M110-M118 **(1)** Save Profile Copy Profile New Profile COM Port: COM44 Connect

**B** Bullet Properties [Choose from Database]

Bullet Diameter: 0.308 inches  
 Bullet Length: 1.240 inches  
 Bullet Mass: 175 grains  
 Ballistic Coeff.: 0.475 lb/in<sup>2</sup>  
 Drag Curve:  G1  G7

**G** Gun Properties

Zero Range: 100 meters  
 Sight Height: 2.75 inches  
 Zero Height: 0.00 inches  
 Zero Offset: 0.00 inches  
 Twist Rate: 10.00 inches  
 Muzzle Velocity: 2600 fps

**D** Drop Scale Factor Table

Mach	DSF
0.00	1.000
0.00	1.000
0.00	1.000
0.00	1.000
0.00	1.000
0.00	1.000

**M** MV-Temp Table

Temp	MV
50	2600
75	2650
100	2700
0	0
0	0
0	0

**I** Input Units

Mixed  
 English  
 Metric

**O** Output Units

MILS  
 MOA  
 Clicks

**P** Profiles on PC

Profiles on PC

EXAMPLE-CC  
 EXAMPLE-G1  
 EXAMPLE-G7  
 M110-M118 **(2)**

Delete Profile from PC

Get Profiles from Kestrel

Copy to Kestrel

Copy to PC

Send Profiles to Kestrel

**P** Local Copy of Profiles on Kestrel

Profiles on Device

Delete Profile from List

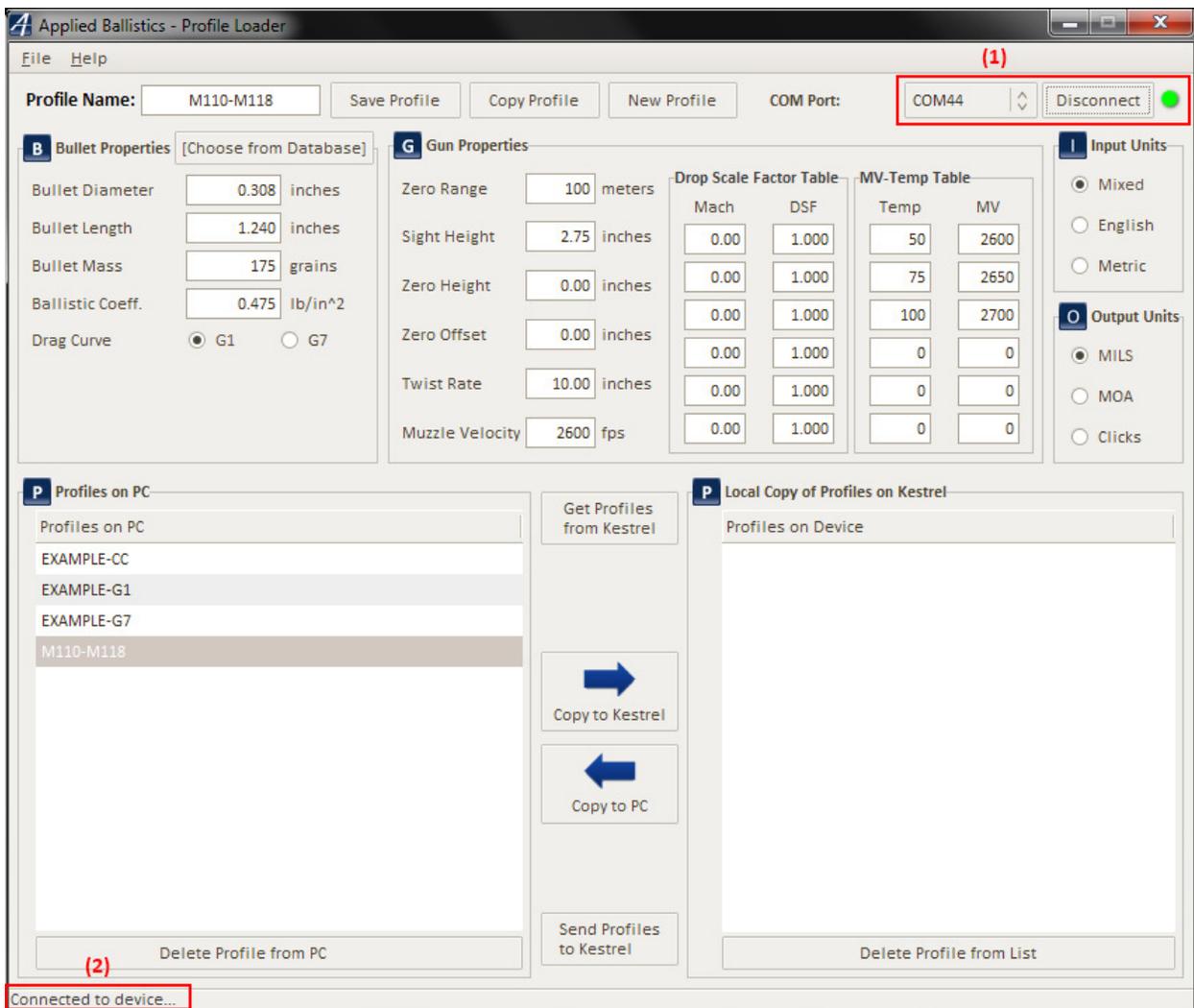
Device disconnected...

## Connecting to the Kestrel Shooter's Weather Meter

To transfer profiles between the Kestrel Shooter's Weather Meter and the PC a Bluetooth connection or the Kestrel Computer Interface must be utilized. The Applied Ballistics Profile Loader utilizes the COM port created by pairing the Bluetooth device or by the installation of the Kestrel Computer Interface. Once the device has been paired or the drivers installed, launch the application (consult user manual and Nielsen-Kellerman web site). Otherwise, the application will not detect the newly created port.

To connect to the Kestrel Shooter's Weather Meter:

- Select an existing COM port from the drop down list and press the **Connect (1)** button.
- The application indicates if it was able to connect to the Kestrel Shooter's weather meter in the status bar by showing that it is **Connected to device... (2)**.



The screenshot shows the 'Applied Ballistics - Profile Loader' application window. At the top, the 'COM Port' is set to 'COM44' and a 'Disconnect' button is highlighted with a red box and labeled '(1)'. Below this, the 'Bullet Properties' and 'Gun Properties' sections are visible. The 'Profiles on PC' list includes 'M110-M118', which is highlighted. The 'Local Copy of Profiles on Kestrel' list is empty. A 'Copy to Kestrel' button is highlighted with a red box and labeled '(2)'. At the bottom of the window, the status bar displays 'Connected to device...'. The interface also includes sections for 'Drop Scale Factor Table', 'MV-Temp Table', 'Input Units', and 'Output Units'.

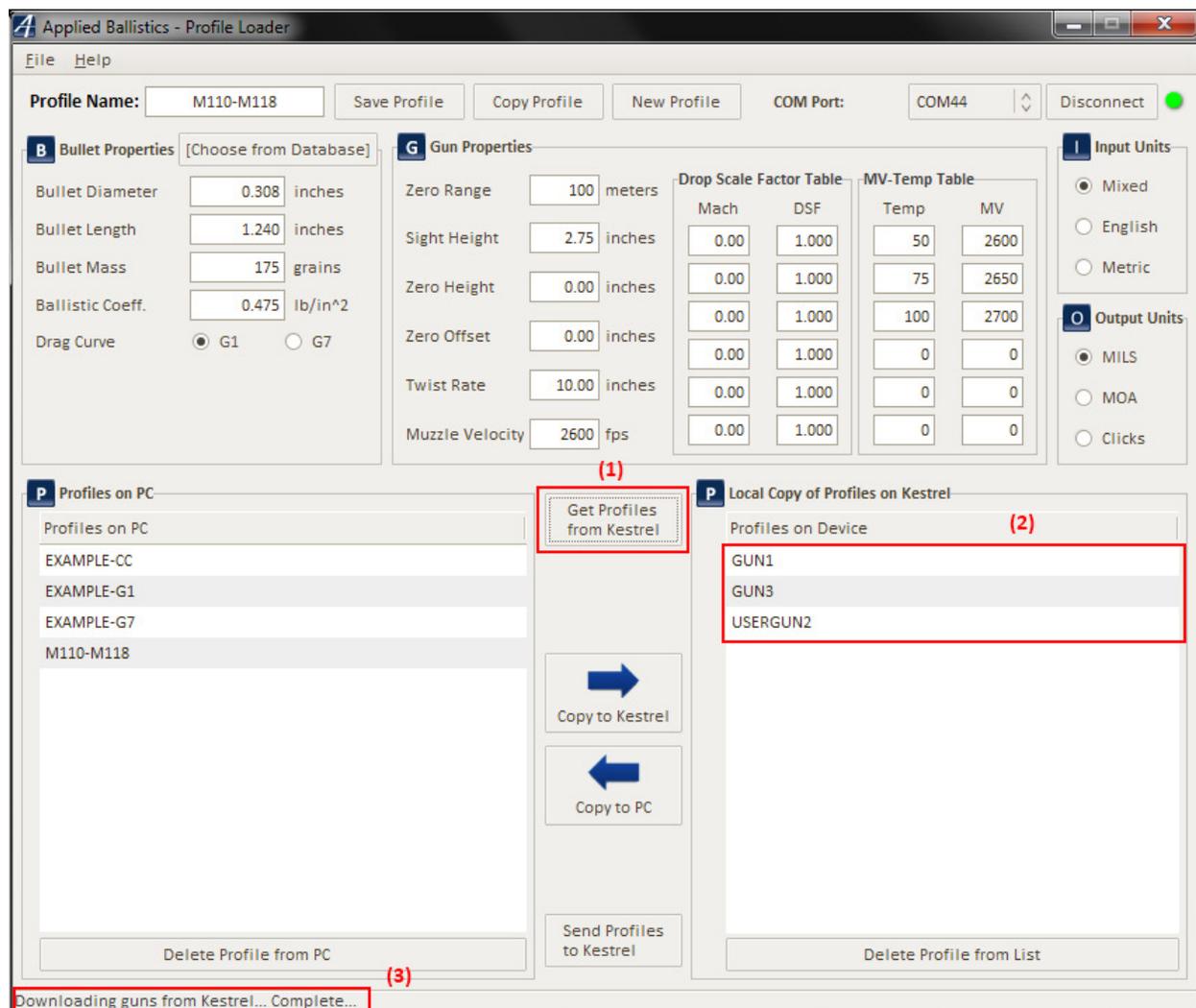
Mach	DSF	Temp	MV
0.00	1.000	50	2600
0.00	1.000	75	2650
0.00	1.000	100	2700
0.00	1.000	0	0
0.00	1.000	0	0
0.00	1.000	0	0

## Downloading Profiles from the Kestrel Shooter's Weather Meter

Several profiles may already exist on the Kestrel Shooter's Weather Meter and should be transferred to the PC for storage and backup.

To download profiles from the Kestrel to the PC:

- Click on the **Get Profiles from Kestrel (1)** button.
- A dialog box will appear with the progress of the transfer from the Kestrel to the PC.
- Once the transfer is complete, all downloaded profiles will appear in the listing under **Local Copy of Profiles on Kestrel (2)**. Keep in mind that you are only editing a local copy of the profile listing within the application and not yet editing the profiles directly on the Kestrel. This occurs at a later step in the process.
- The status bar indicates the current status of the download and if all profiles have been transferred **(3)**.

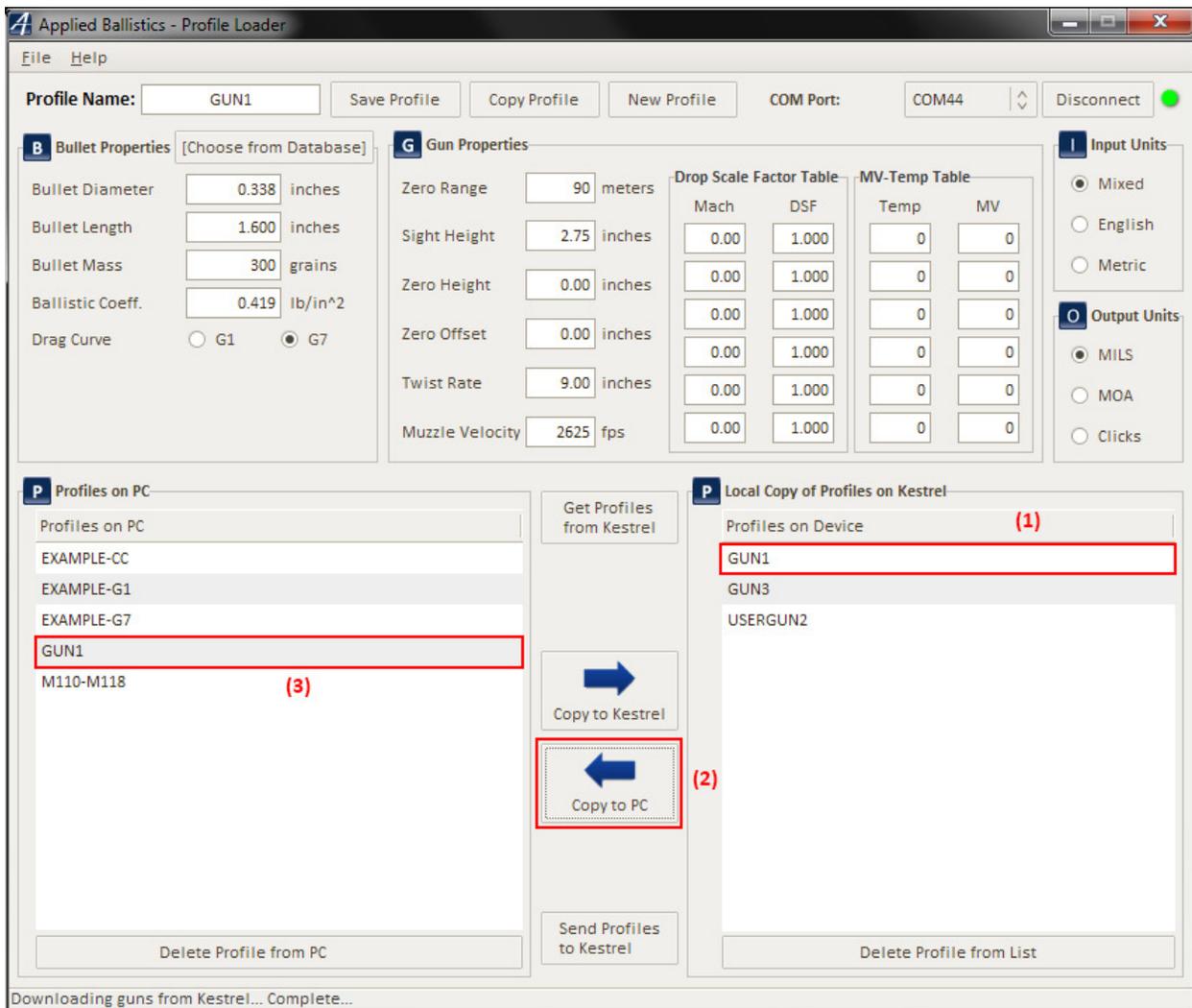


## Copying Profiles from the Kestrel Shooter's Weather Meter to the PC

Once profiles have been downloaded from the Kestrel Shooter's Weather Meter to the PC, they may be copied for local storage on the PC.

To copy a profile from the Kestrel to the PC:

- Select the profile of interest from the **Profiles on Kestrel (1)** listing.
- The bullet and gun properties shown in the application will indicate that the new profile is selected.
- Click the **Copy to PC (2)** button.
- The profile will now be shown in the **Profiles on PC listing (3)**.



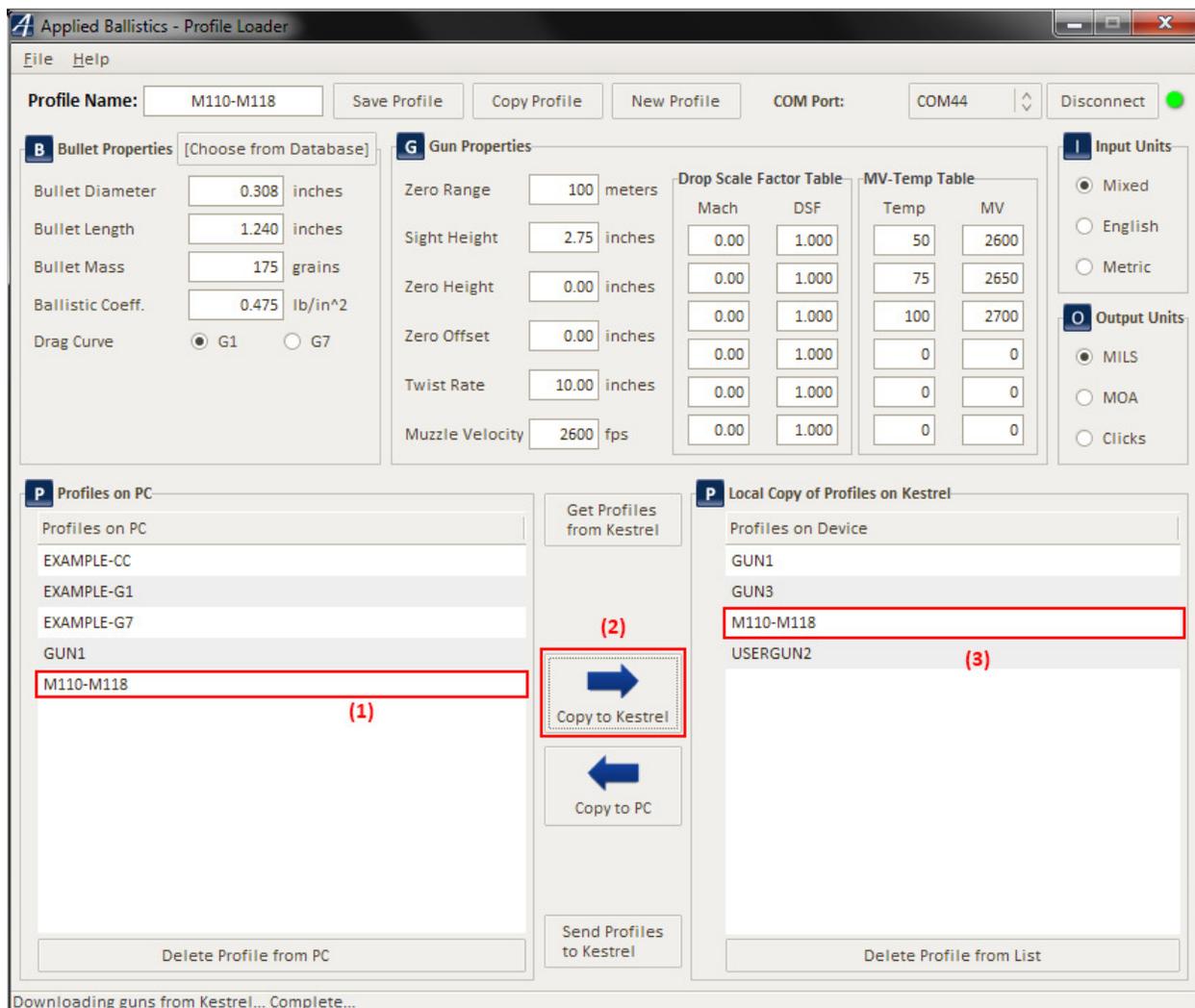
## Copying Profiles from the PC to the Kestrel Shooter's Weather Meter

Similar to how profiles are copied from the Kestrel to the PC, up to 15 profiles may be copied onto the Kestrel Shooter's Weather Meter.

To copy a profile from the PC to the Kestrel:

- Select the profile of interest from the **Profiles on PC (1)** listing.
- The bullet and gun properties shown in the application will indicate that the new profile is selected.
- Click the **Copy to Kestrel (2)** button.
- The profile will now be shown in the **Local Copy of Profiles on Kestrel listing (3)**.

**Note:** The profiles have not yet been uploaded and the copy of the profile is only a working copy within the PC application until the profiles are uploaded.

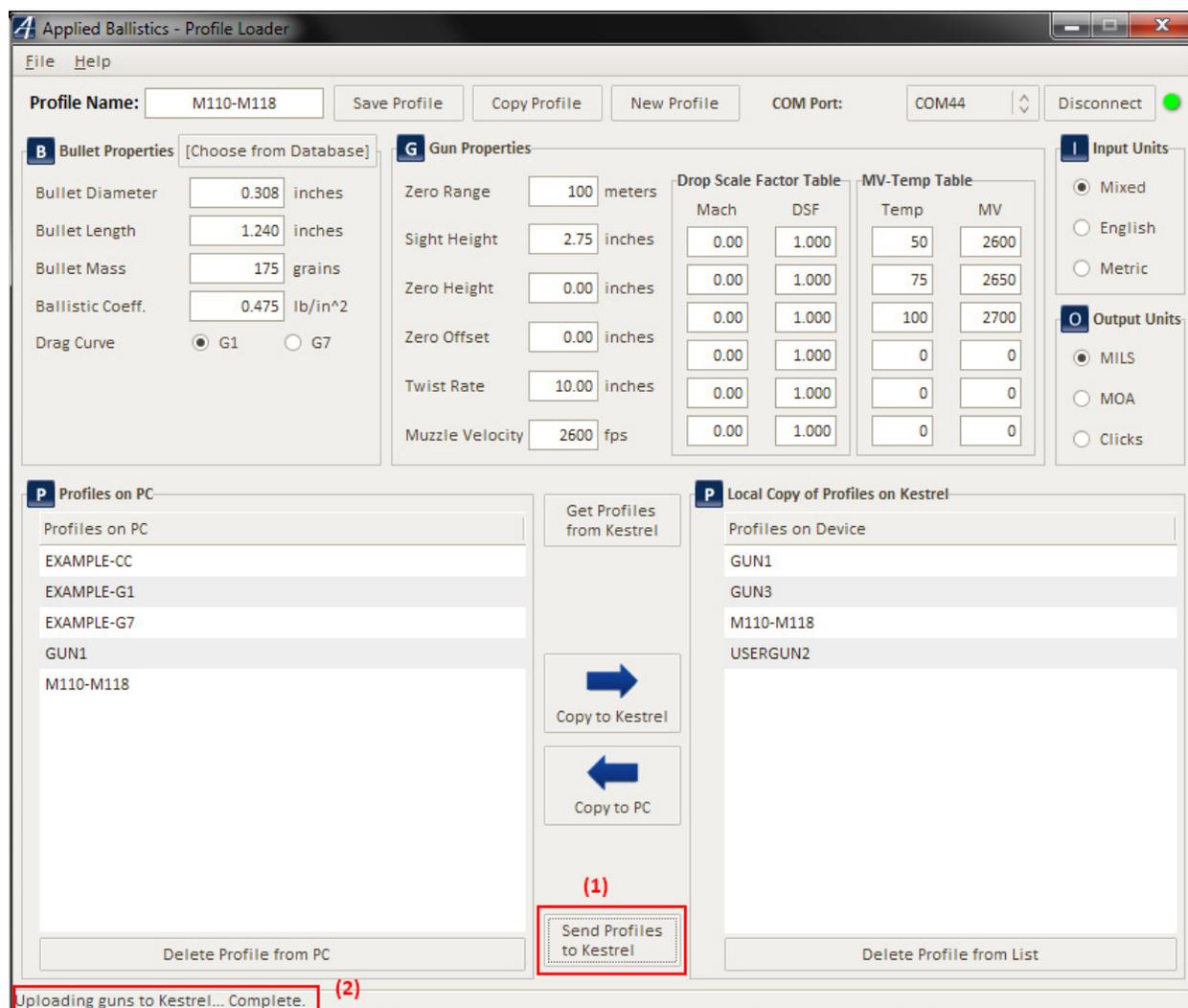


## Uploading Profiles to the Kestrel Shooter's Weather Meter

Once the profiles have been copied within the application from the PC to the Kestrel Shooter's Weather Meter, it is necessary to upload all of the profiles to the device to store them. When the upload begins, all current profiles on the device are erased and replaced with those selected within the application.

To upload profiles from the PC to the device:

- Click on the **Send Profiles to Kestrel (1)** button.
- A dialog box will appear with the progress of the transfer from the PC to the Kestrel.
- Once the transfer is complete, the application will indicate in the status bar that all profiles have been uploaded to the device **(2)** and the operation is complete.

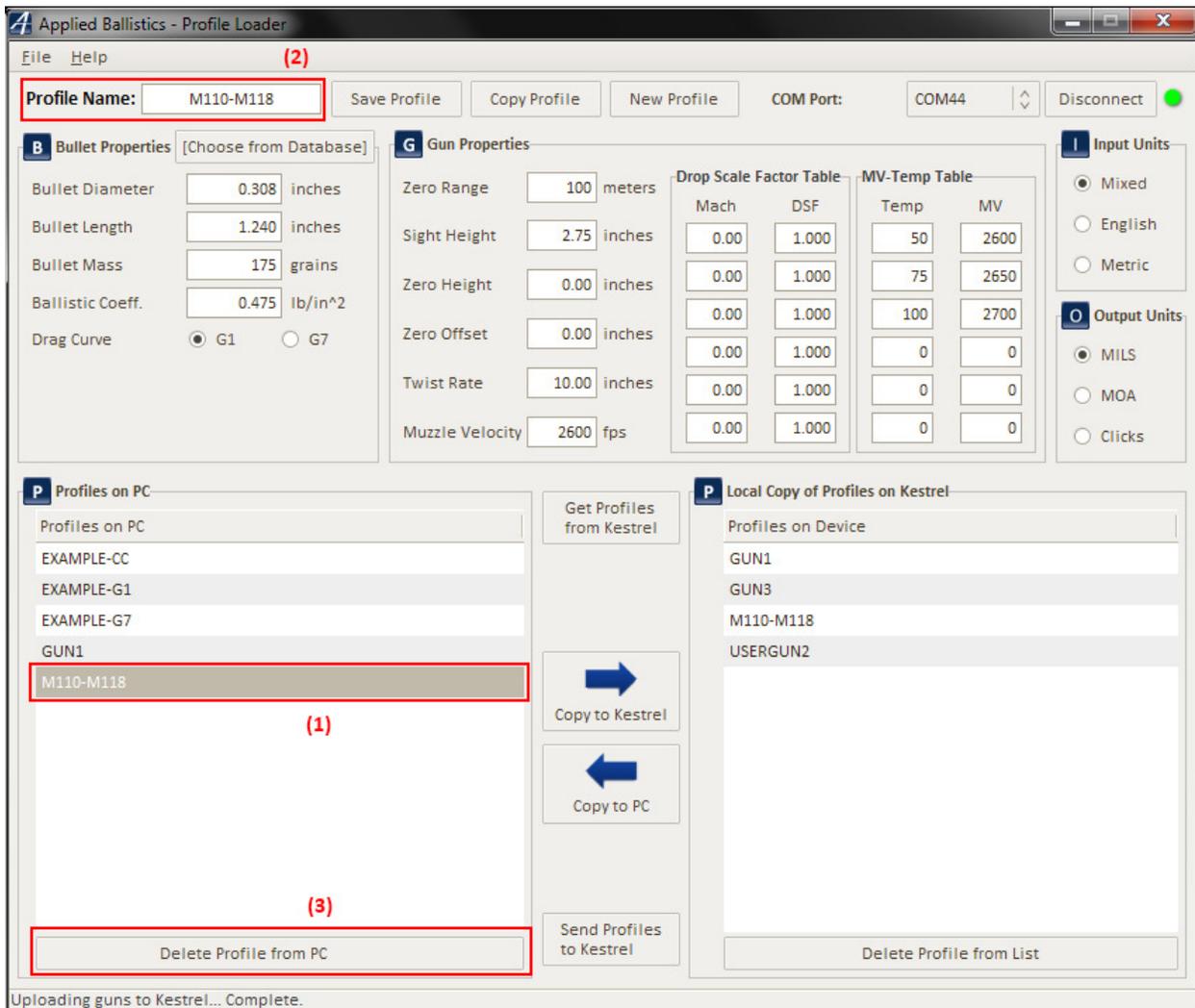


## Deleting Profiles from the PC and Kestrel Shooter's Weather Meter

At any time, profiles may be deleted from the PC or Kestrel.

To delete a profile:

- Select the profile from either the PC or Kestrel listing **(1)**.
- Ensure that the profile of interest is shown in the **Profile Name (2)**.
- Click on the **Delete from PC** or **Delete from List Button (3)**.
- A confirmation dialog box will appear that will ask to confirm that the profile should be deleted. Click **OK** to delete the profile or **Cancel** to cancel the operation.



The screenshot shows the 'Applied Ballistics - Profile Loader' application window. At the top, the 'Profile Name' field contains 'M110-M118' and is highlighted with a red box and labeled (2). Below this are buttons for 'Save Profile', 'Copy Profile', and 'New Profile'. The 'COM Port' is set to 'COM44' and there is a 'Disconnect' button. The main interface is divided into several sections: 'Bullet Properties' (with fields for diameter, length, mass, ballistic coefficient, and drag curve), 'Gun Properties' (with fields for zero range, sight height, zero height, zero offset, twist rate, and muzzle velocity), 'Drop Scale Factor Table' (a table with Mach and DSF columns), 'MV-Temp Table' (a table with Temp and MV columns), 'Input Units' (radio buttons for Mixed, English, and Metric), and 'Output Units' (radio buttons for MILS, MOA, and Clicks). At the bottom, there are two lists: 'Profiles on PC' and 'Local Copy of Profiles on Kestrel'. The 'Profiles on PC' list has 'M110-M118' selected, highlighted with a red box and labeled (1). Below this list is a 'Delete Profile from PC' button, highlighted with a red box and labeled (3). The 'Local Copy of Profiles on Kestrel' list contains 'GUN1', 'GUN3', 'M110-M118', and 'USERGUN2'. At the bottom of the window, a status bar reads 'Uploading guns to Kestrel... Complete.'