

## **UPDATING YOUR CODE PLUG**

### **Why you need to update your code plug**

Updating your code plug is as important as updating your firmware. If not done right, your radio will effectively be bricked. First, I need to give an explanation of why the code plug needs to be updated.

The Connect System series of radios has gone through many iterations over the years. The CS800 and CS750 have gone from 1,000 channels and 1,000 contacts to 2,000 channels and 65,000 contacts, to finally 4,000 channels and 130,000 contacts.

The CS800D started out with 2,000 channels and 65,000 contacts and then went to 4,000 and 130,000 contacts. The CS800D went from 16 channels per zone to a dynamically adjustable number of channels per zone where the range is from 1 channel per zone to over 999 channels per zone.

For those who know how to write software, the problem is obvious, for those that do not know how to write software, an explanation of memory maps is in order.

The parameters for the radio such as channels, contacts, zones, and almost everything else is stored in an 8-megabyte flash memory. The location of the data is defined by a memory map. A memory map is simply the location in memory where the parameters are stored.

Let's start out with a radio with 1,000 channels and 1,000 contacts. This configuration is prevalent for the early CS800 and CS750 radios as well as contemporary commercial radios. Let's assume each channel is defined by 64 bytes of memory and each contact is defined by 16 bytes of memory. A memory map of this radio is as follows:

Location 0            First Channel

.  
. .

Location 64,000    Last Channel

Location 64,001    First Contact

.  
. .

Location 80,000    Last Contact

Now let's take the current version of the radio where you have 4,000 channels and 130,000 contacts. A memory map if this radio is as follows:

Location 0            First Channel

.  
. .

Location 256,000    Last Channel

Location 256,001    First Contact

.  
. .

Location 2,336,000    Last Contact

If you try to transfer the data from the first memory map to the second memory map without any compensation, then both the channels and the contacts will end up in the channels of the second memory map.

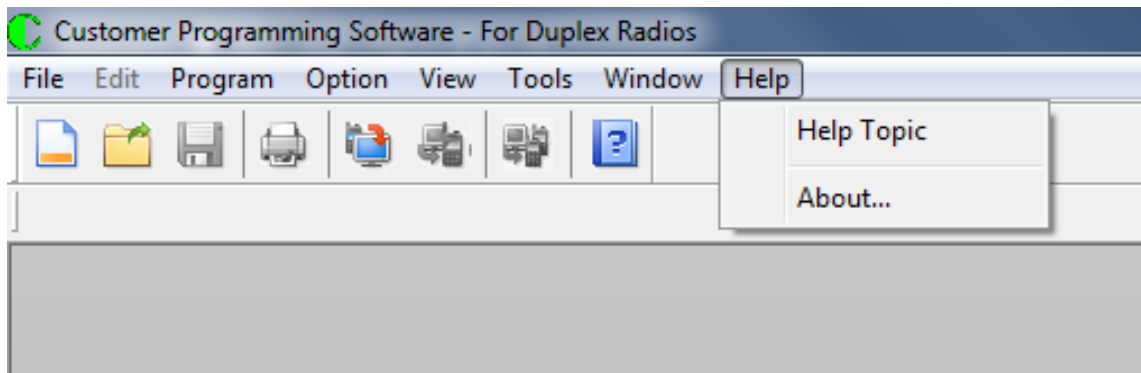
The new radio with the larger memory map will see the first 1,000 channels correctly but everything after that will be garbage. You effectively bricked your radio if you do that. So hopefully you can see that you need a utility to transfer the data correctly between different versions of the radio. This utility exists in the Tools section of the CPS for the radio.

The first thing you need to do is get the correct version of your code plug. A correct version of the code plug is that version that was saved before you started trying to do any updating and was generated by the version of the CPS that was made for your firmware version of your radio.

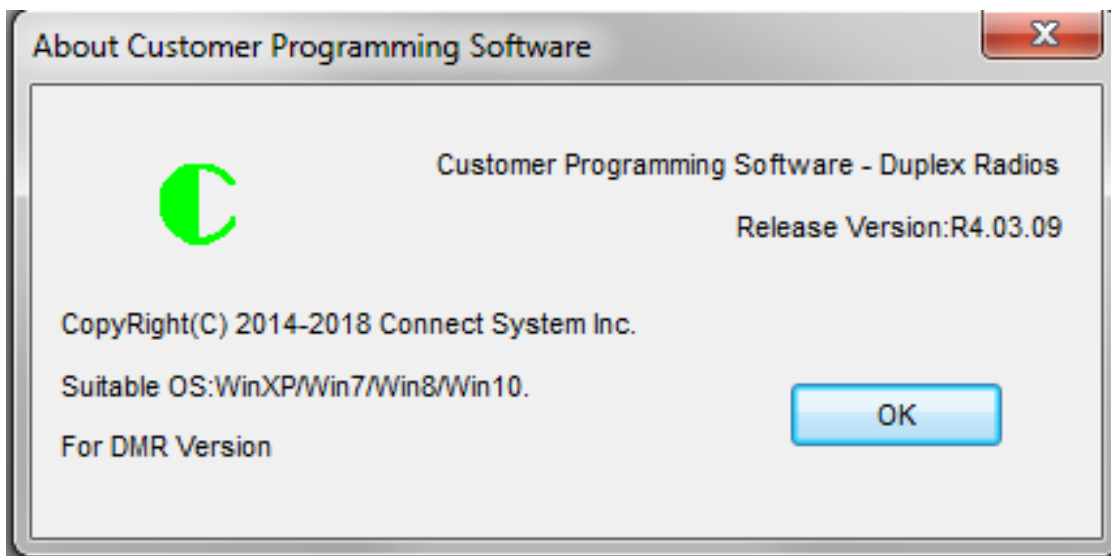
If you read your old radio with a new version of the CPS, your code plug might be corrupted. That version cannot be converted with the method shown below.

## Updating your code plug

Make sure you have the latest CPS. You can find the version in the Help pull down menu and click on “About”.

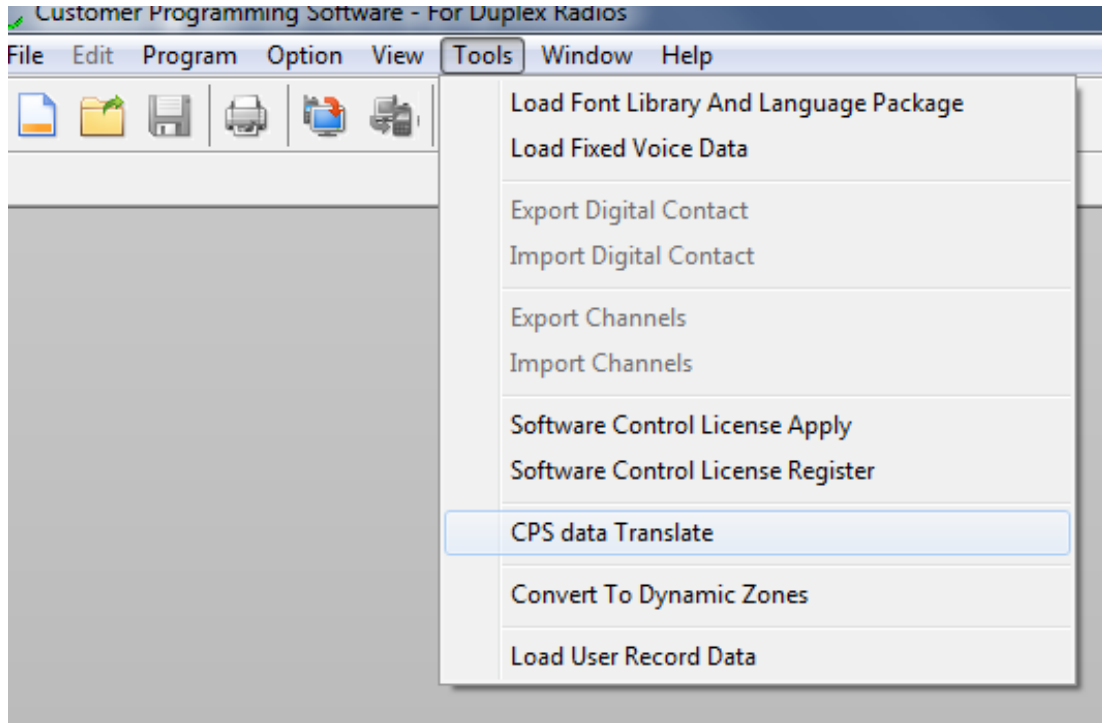


When you press the “About” entry you get:

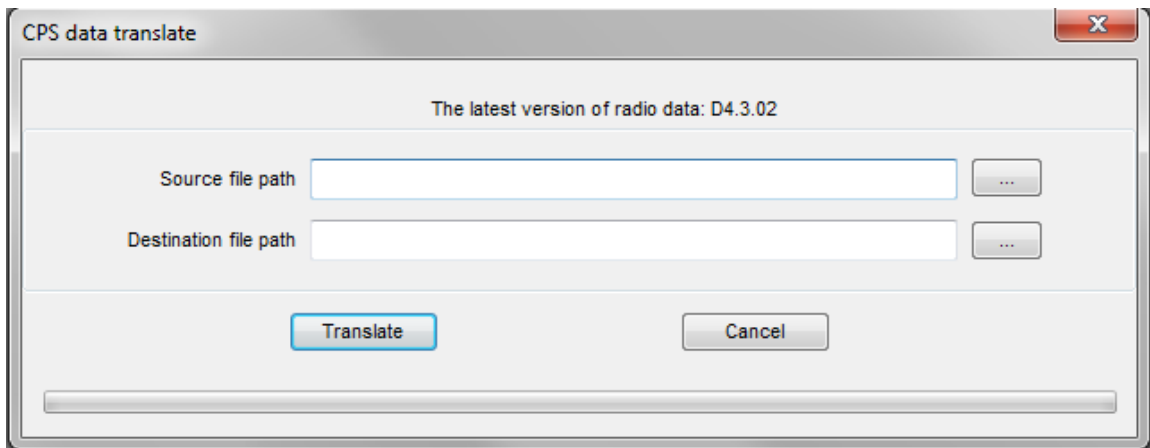


Make sure the Release Version is the one you want.

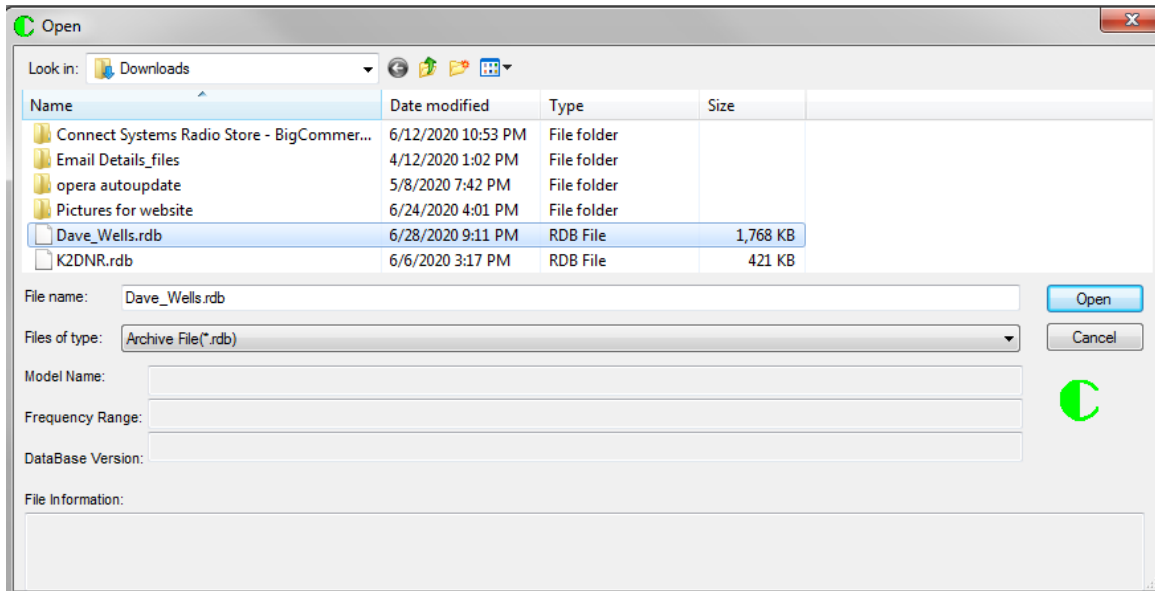
Now go to the Tools pulldown menu and press “CPS Data Translate”.



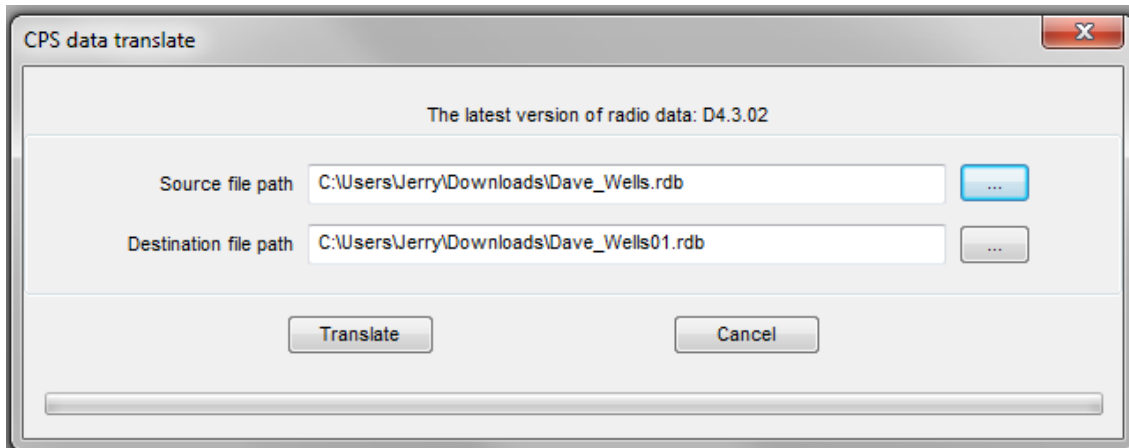
When you press “CPS Data Translate” you get:



Now press the button with the “...” next to the Source file path and you will get:

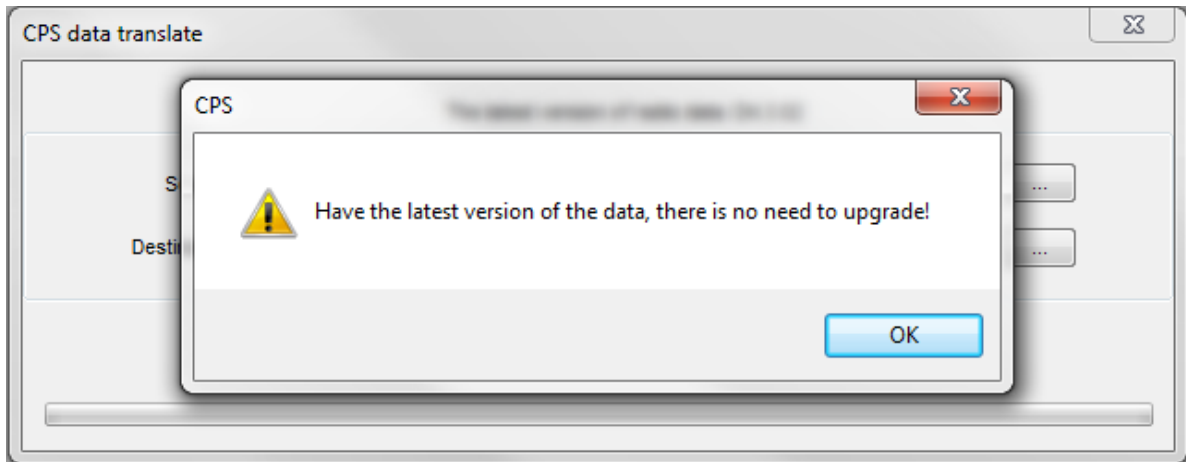


Locate your code plug you want to update and then double click on that file. You will then get:

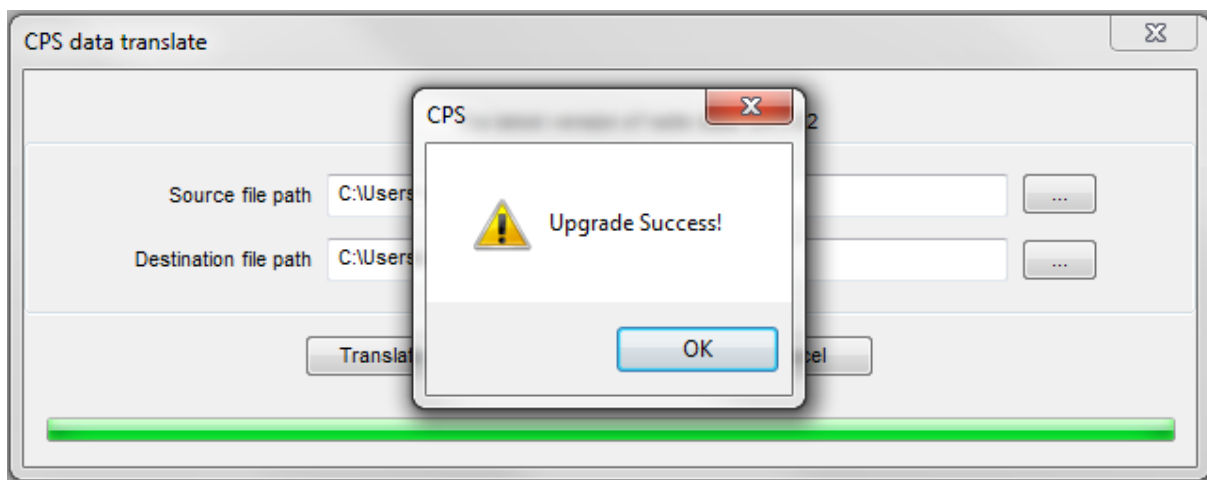


Notice the program automatically generates a destination file path and file name. The original file is not modified.

Press the “Translate” key and you will get:

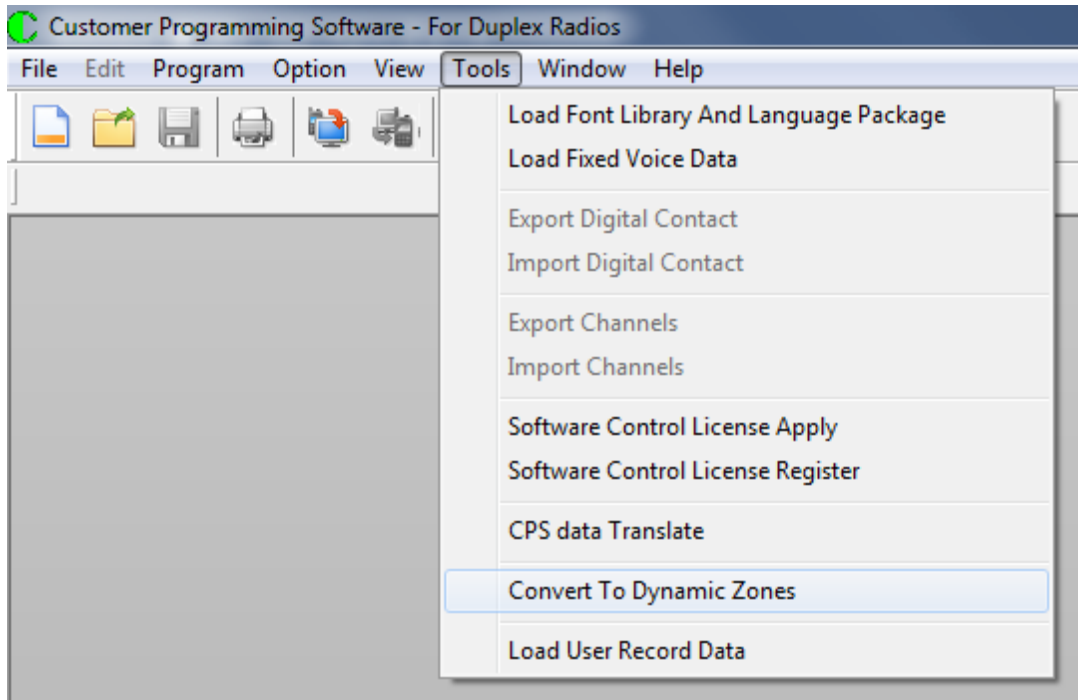


In this case the file was already updated and there was no need to do anything. However, if the file was not the latest, then you will get the following message:

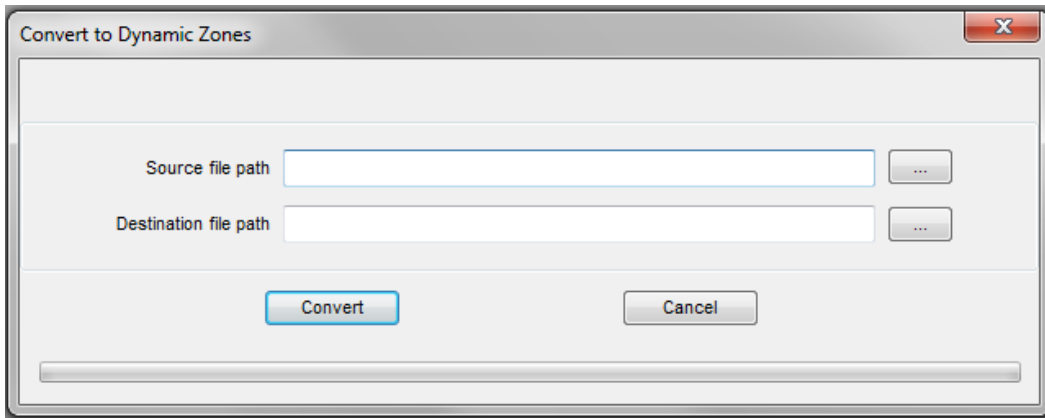


Having the message where it says there is no need to upgrade might be a problem if your original file was from a code plug that was created before the Dynamic Zones was first used. This could happen because you read the radio with a CPS version that was created at the time the Dynamic Zones was first used or later. If that happens continue reading this application note.

Go to the tools pull down menu and press the “Convert To Dynamic Zones”.

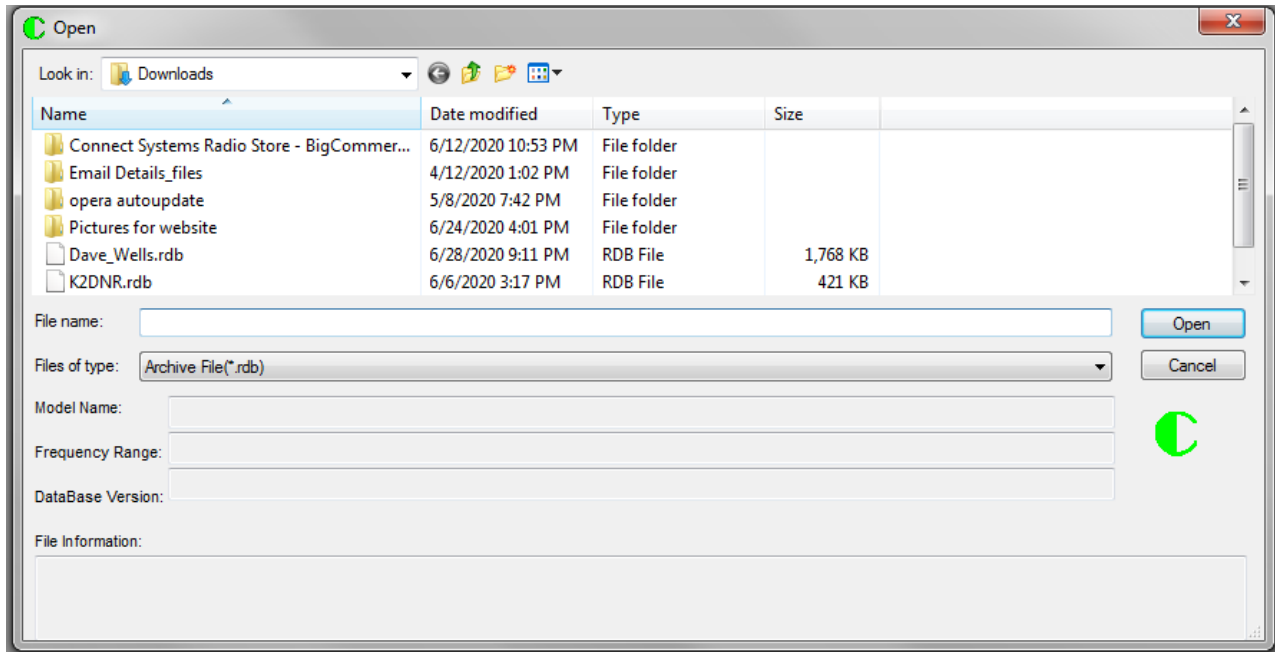


When you press “Convert To Dynamic Zones” you get:

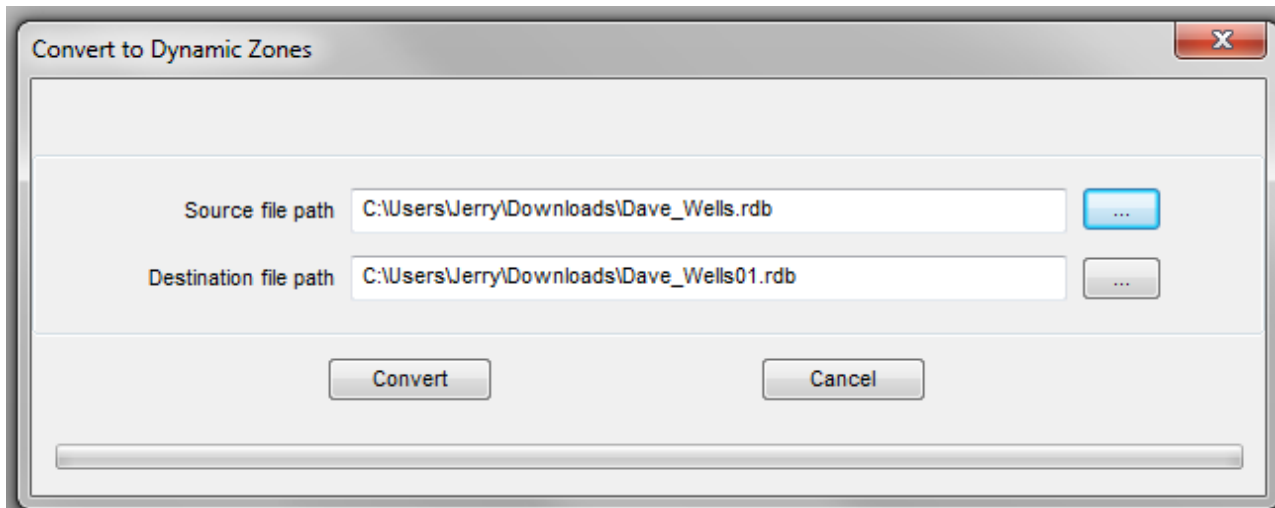




Now press the button with the “...” next to the Source file path and you will get:

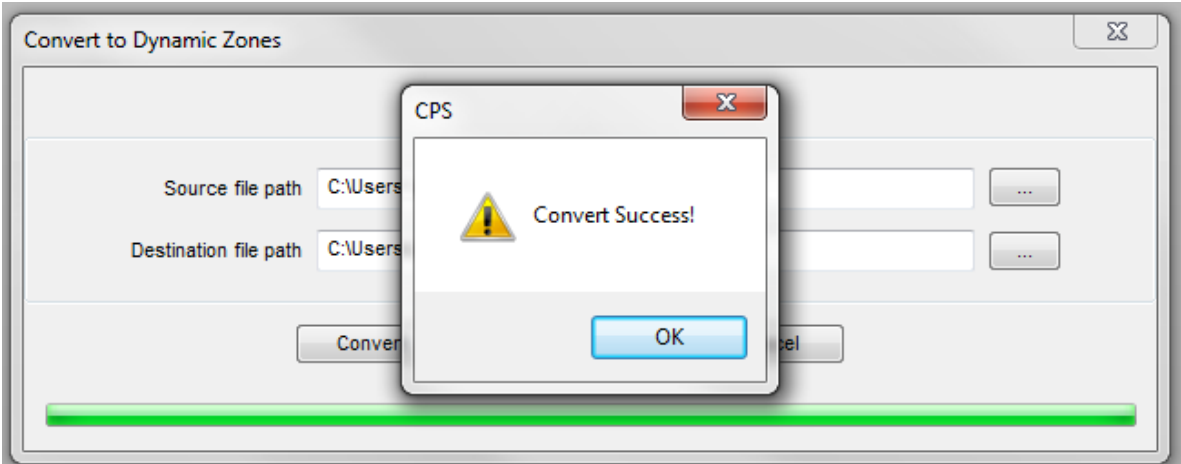


Locate your code plug you want to update and then double click on that file. You will then get:

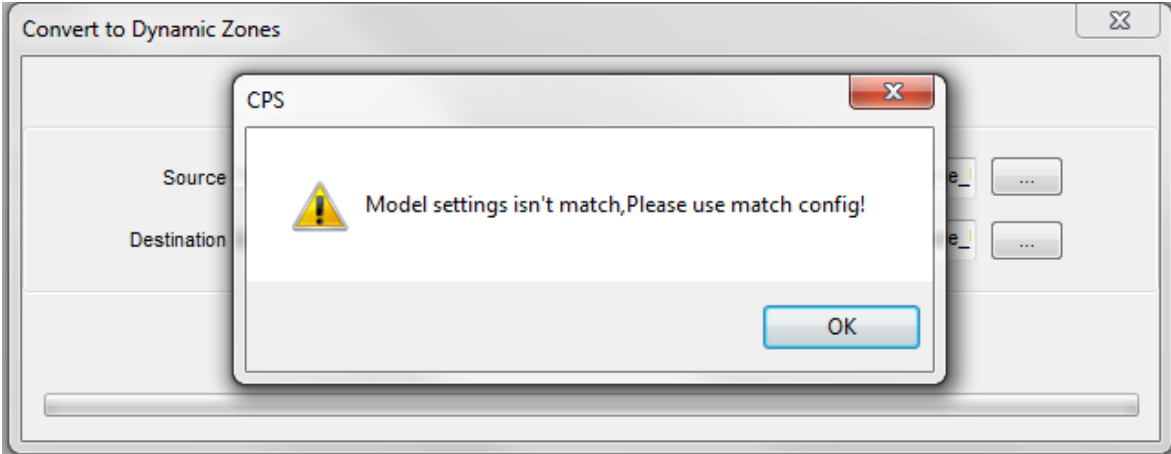


Notice the program automatically generates a destination file path and file name. The original file is not modified.

Press the "Convert" key and you will get:



If there was something wrong with your code plug, you might get a message that looks as follows:



In this case we tried to convert a CS800 code plug.