

GPS system operator's reference 11/04/2018

Ctrl-c operations

The Ctrl-c performs the following functions:

- 1- Logs the latitude and longitude of the position to ***datafile.txt***.
- 2- Changes the time standard to either EST or DST.
- 3- Plays a music track.

If a monitor is connected to the Raspberry Pi and you press the ctrl-c keys, the system will prompt you to:

enter a **location** OR **est** or **dst** OR **music**. Without a monitor you can still enter any of the options. Whatever is entered will be saved in the ***datafile.txt***.

Changing the time from EST to DST. Introduced in version 404-47.

To change the time standard, enter either of the two time-standards **in lower case**.

This information is stored in the text file ***est_dst.txt***.

The time standard can also be change by creating the ***est_dst.txt*** file on the ***USB_DISK***.

There are two files on the flash drive. They are ***est.txt*** and ***dst.txt***. Just copy either one of these as ***est_dst.txt***. When the system is rebooted, this file will be uploaded to the system ***SD*** memory card to change the time standard. The file ***est_dst.txt*** will then be deleted from the ***USB_DISK*** flash drive.

The ***est_dst.txt*** file contains one line.

For Eastern Standard time it is **5EST**. This is what is in ***est.txt*** file.

For Daylight Savings time it is **4DST**. This is what is in ***dst.txt*** file.

Utility files:

check_for_audio_files.py

check_for_audio_filesPC.py

play_nb.py
play_sb.py
play.py

These files help to manage the audio clips stored in the **audio_tracks** folder.

The ***check_for_audio_files.py*** loads the ***gps_data.csv*** file and compares the audio file names found with the files in the **audio_tracks** directory. If it cannot find a file, it lists the file in the ***missing_audio.txt*** file. If the flash drive is mounted on the system, the ***missing_audio.txt*** file is copied to it.

To use this utility program:

Open a new window

At the command line, change to the **gps_2017** directory by typing:

cd gps_2017 (change directory)

At the command line enter: ***python check_for_audio_files.py***

The ***check_for_audio_filesPC.py*** runs on a PC system.

The utility files ***play_nb.py*** and the ***play_sb.py*** will play all of the audio tracks that will be played on the route based on the contents of the ***load_csv_data.csv*** file. To play them in the proper sequence, the ***gps_data.csv*** file should be sorted by the latitude column.

To use the following utility programs:

Open a new window

At the command line, change to the **gps_2017** directory by typing:

cd gps_2017 (change directory)

At the command line enter: ***python play_nb.py*** or

python play_sb.py

Tip: When using these utility programs, pressing the q key will stop the audio clip that is playing and start the next clip. See all of the omxplayer commands in appendix 1.

play.py

This utility program will play any clip in the audio_tracks folder at any volume level

At the command line, in the gps_2017 folder type:

python play.py

The screen will display all of the audio files in the **audio_tracks** folder.

It will then prompt you to enter a file name. Enter the file name ***without the .mp3*** extension.

It will then prompt you to enter a gain level. This can be any number between -2500 and +1000.

The program will then play the audio file at the desired gain level and the program will end.

If you wish to replay the audio clip, launch the program again and when prompted to enter a file name, hit the Enter key

If you wish to change the gain, at the prompt, enter a new gain number and hit Enter key. If you wish to play the file at the same level just hit the ENTER key and it will play it at the previous gain level.

The previous file name and previous gain level are stored in the play.txt file.

Note that it is more convenient to have subfolders which contain the audio files for specific events. For example, a Halloween effects folder and Bonsal test files folder. When using these audio files, copy them from the subfolder to the ***audio_tracks*** folder.

In summary:

The following files need to be in the operational directory: (/home/pi/gps_2017)

gps1.py (The main operating program)
gps_data.csv (The spreadsheet file containing the data)
load_csv_data.py (Loads the spreadsheet data)
gpssock.sh (see below)
est_dst.txt (stores the time standard)
play_nb.py (Utility to play audio tracks)
play_sb.py (Utility to play audio tracks)
play.py (Utility to play and change the audio tracks)
check_for_audio_files.py

The following files will be created:

logfile.txt (logs whenever an audio clip is played)
datafile.txt (store latitude data captured by ctrl-c)
play.txt (stores data from the play.py file)
bootlog.txt (stores data from the last startup)
missing_audio.txt (Created by the **check_for_audio_files.py** file.)

A Flash drive is optional. It needs to have the name: **USB_DISK**.

It can be used to configure the system “offline”, by adding files to this drive from another PC and to download and analyze the data saved by the system offline without removing the system from operation.

When the system boots up it will:

- 1- Upload a new **gps_data.csv** file.
- 2- Download the files **logfile.txt** and **datafile.txt**.
- 3- Change the time standard to Eastern Standard or Daylight Savings time.
It should have the two text files **est.txt** and **dst.txt**. To change the time standard, copy either file to a new file **est_dst.txt**.
- 4- Delete the **logfile.txt** and the **datafile.txt** from the system SD card. This is accomplished by having a file named **rm_logfile.txt** and **rm_datafile.txt** on the **USB_DISK**. Just copy

est.txt to the *rm_* files. When the system is started, the files will be erased from the SD card and the *rm_* files will be erased from the Flash Drive.

As stated above, the audio clips used are stored in a separate folder.

In the `/home/pi/gps_2017` directory, create a folder **audio_tracks**

Place the audio files, in .mp3 or .wav format, into the folder:

`/home/pi/gps_2017/audio_tracks`.

Tip: WAV files can be edited using Audacity, a free audio editing program. MP3 files were used in a previous version of the system that used an mp3 player and cannot be edited.

Tip: Files can be captured using Sound Trap, a free streaming audio recorder.