

# FIRESTORM TX2 SCRIPT INSTRUCTIONS

We recommend that you use our free FireStorm Show Maker Software to create firing scripts. The software provides an easy way to generate and error check scripts for the FireStorm Firing System.

## FireStorm Script Introduction

A script for the FireStorm TX2 Control Desk can be written in Microsoft Excel, Notepad, or your favourite spreadsheet or text editor. The file is saved as a .txt or .csv file to a common USB memory stick. The memory stick is then inserted into the TX2 Control Desk. The user should follow the prompts on screen to validate the script and send it to the FireStorm firing modules.

Note that the TX2 Control Desk itself can not be used to create or edit scripts. You must use a computer for this. If you wish to edit scripts on site we recommend taking a laptop.

## File Information

- Valid file types are .txt or .csv
- We recommend using an "8.3" naming convention. This means a maximum of 8 characters for the file name + 3 characters for the file extension. Eg. "Show1.txt" not "Show-July-15-awesome.txt". This is because the TX2 display will cut off the end of your filename and it will be hard to select the correct file on the screen.
- Multiple shows can be stored on one USB memory stick. You can select the file when you insert the memory stick into the TX2. Just ensure you select the correct file!
- The file must be in the root directory of the USB memory stick. It must not be in any sub folders.
- The file system must be NTFS or FAT32 formatted (this is standard for Windows). We recommend you select and keep a memory stick just for TX2 scripts.

## Script Information

- Anything after a "#" will be ignored, this should be used for comments etc.
- Any line that doesn't start with "segment", "time", "#" or numbers will be ignored.
- The whole file is case insensitive so MiXiNG UppER aNd lOWer is OK.
- All numbers can have leading zeroes, eg. 1 = 01 = 00000001.
- All fields must be separated by a comma (,).
- Only the first 255 character of a line are interpreted. The rest is ignored.
- Duplicate channel and cue numbers within a script flag up an error and are not allowed.
- Maximum script events per file is 3500.
- Maximum channels are 200.
- Maximum paired devices are 200.

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## Script Minimum & Maximum Values

The following are the minimum and maximum values when writing a Firestorm script.

| Item        | Minimum Value | Maximum Value | Notes  |
|-------------|---------------|---------------|--|
| Segment     | 1             | 99            | Each script file must start with Segment <u>1</u> and following Segments must be ordered sequentially with no missing numbers i.e. 1, 2, 3, 4, 5 ...<br>Segments are useful for splitting up longer shows or segregating your show so that you can skip over sections should they fail for some reason.                                  |
| Time        | 0:00.00       | 99:59.999     | Format (Minutes : Seconds . Milliseconds) i.e. 01:30.45 is 1 Minute 30 Seconds 450 Milliseconds.<br>Each section must not exceed 3 characters i.e. 99.59. <u>999</u><br>Leading 0's can be omitted for the Minutes digits.<br>Although times can be specified down to 1ms timing accuracy is not guaranteed below 10ms.                  |
| Channel     | 1             | 200           | 200 channels are available. For simplicity we recommend only bonding 1 firing module to each channel, and bonding it at the Cue 1 position. This means when writing a script you do not have to consider any cue offsets. However it is perfectly possible to bond modules to other Cue positions should you desire this.                |
| Cue         | 1             | 99            | 99 cues are available on each channel. Again we recommend only bonding 1 firing module to each channel, and bonding that module to Cue 1. This makes scripts easy to write and understand.   |
| Pulse       | 5             | 65000         | Optional field. Pulse duration in milliseconds. The default is 500ms (0.5 seconds). Can be used in some segments and not others. This field is useful for controlling valves, solenoids and other electrical devices. For pyrotechnic e-matches or talon igniters it is not necessary to use this field. The default value will suffice. |
| Description | -             | -             | This field can be used for a description of the line. Only the first 255 characters per line will be interpreted.  |

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## Example Layout of Script in Excel

| #Example Script for the FireStorm TX2 Transmitter |         |     |             |
|---|---------|-----|-------------|
| Segment   | 1       |     |             |
| Time  | Channel | Cue | Description |
| 00:00.0   | 1       | 1   | Blue Comet  |
| 00:00.0   | 1       | 2   | Red Comet   |
| 00:00.0   | 1       | 3   | Blue Comet  |
| 00:00.0   | 1       | 4   | Red Comet   |
| 00:00.0   | 1       | 5   | Blue Comet  |
| 00:00.0   | 1       | 6   | Red Comet   |
| Segment   | 2       |     |             |
| Time  | Channel | Cue | Description |
| 00:00.0   | 2       | 1   | Golden Mine |
| 00:00.2   | 2       | 2   | Golden Mine |
| 00:00.4   | 2       | 3   | Golden Mine |
| 00:00.6   | 2       | 4   | Golden Mine |
| 00:00.8   | 2       | 5   | Golden Mine |
| 00:01.0   | 2       | 6   | Golden Mine |

## Example layout of Script in Excel showing optional Pulse Field

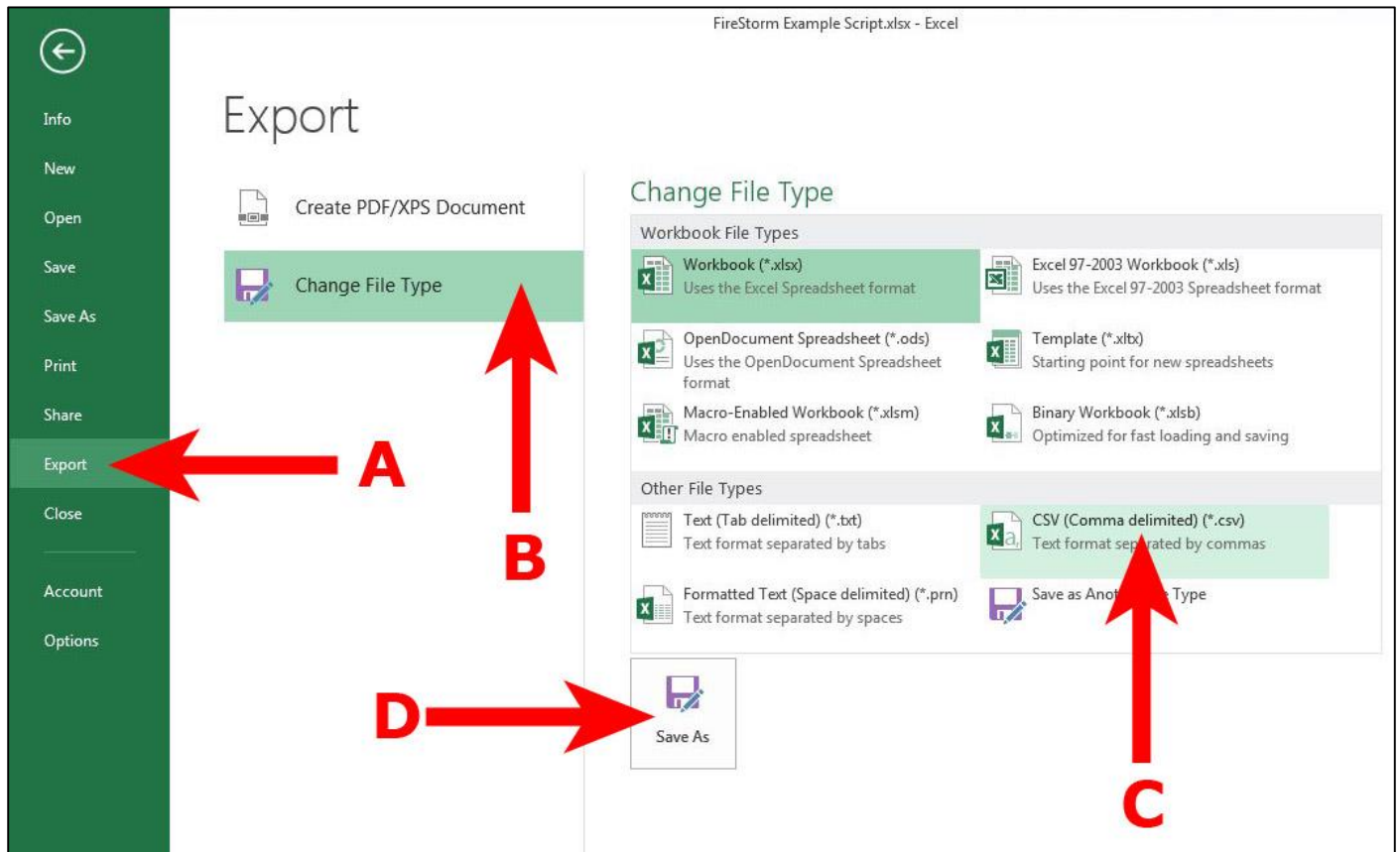
(this is useful for controlling the pulse duration for firing flame projectors, propane valves etc)

| #Example Script for the FireStorm TX2 Transmitter |         |     |             |                                |
|---|---------|-----|-------------|--------------------------------|
| Segment   | 1       |     |             |                                |
| Time  | Channel | Cue | Description |                                |
| 00:00.0   | 1       | 1   | Blue Comet  |                                |
| 00:00.0   | 1       | 2   | Red Comet   |                                |
| 00:00.0   | 1       | 3   | Blue Comet  |                                |
| 00:00.0   | 1       | 4   | Red Comet   |                                |
| 00:00.0   | 1       | 5   | Blue Comet  |                                |
| 00:00.0   | 1       | 6   | Red Comet   |                                |
| Segment   | 2       |     |             |                                |
| Time  | Channel | Cue | Pulse       | Description                    |
| 00:00.0   | 2       | 1   | 2000        | Propane Valve 1 - Stage Right  |
| 00:00.2   | 2       | 2   | 2000        | Propane Valve 2 - Stage Centre |
| 00:00.4   | 2       | 3   | 2000        | Propane Valve 3 - Stage Left   |
| 00:00.6   | 2       | 4   |             | Golden Gerb                    |
| 00:00.8   | 2       | 5   |             | Golden Gerb                    |
| 00:01.0   | 2       | 6   |             | Golden Gerb                    |

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## Export a file from Microsoft Excel

(example given from Excel 2013)



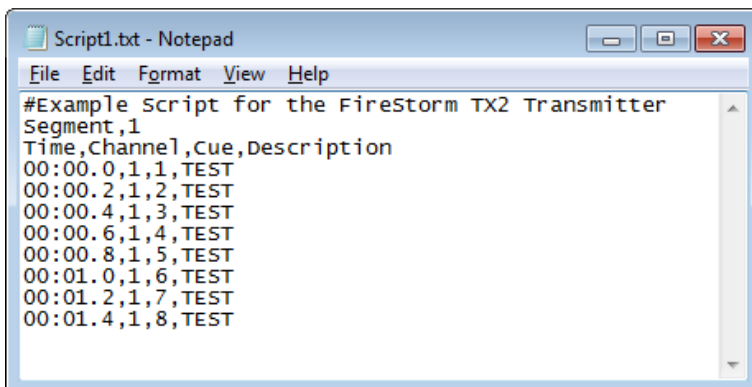
Click **FILE** in the top left of Excel.

Then click **Export (A)**, **Change File Type (B)**, **Select .CSV file (C)** and **Save As (D)**.

Select the USB memory stick and save the file.

## Example of a Script in MS Notepad

This is the raw form of the script. It is useful for debugging and understanding the script. If a script has problems and fails validation in the TX2, we recommend opening it in Notepad and checking if Excel has introduced quotation marks ( " ") around the values. This can happen when the cell type in Excel is incorrect. The cell type should be set as "General" for all numerical and text fields and not "Text" or "Number". The Time column is set to a custom type of "Custom" with format "mm:ss.0". We recommend using our example FireStorm Script as a template for your own scripts to avoid problems.



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## A note on Script Segments

Segments are useful to split up your show in separate parts. This may be useful if there is a break in the show for some other event. Also, it is useful for show planning and control of your show. For example if some part of the show fails, you could skip straight to the next segment. You may also script your entire show in one segment.

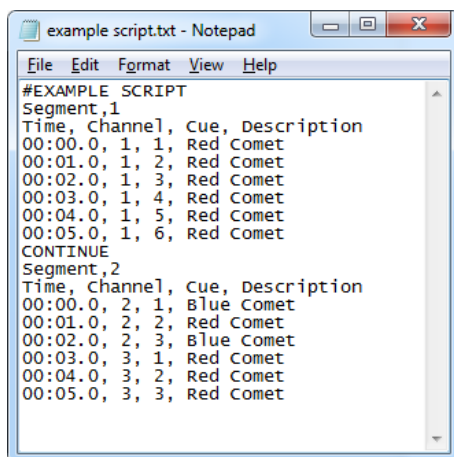
Segments must be numbered sequentially starting from 1. i.e 1,2,3 ... 10,11,12 etc.

The default behaviour for the TX2 is to stop at the end of a segment. You must press the PLAY button to continue to the next segment.

Placing the word CONTINUE at the end of a segment will cause the TX2 to automatically flow into the next segment.

Note that the last cue of the preceding segment and the first cue of the proceeding segment will fire at the same time when CONTINUE is used, when the first cue of the proceeding segment has a time of 00m00.00s.

For example:

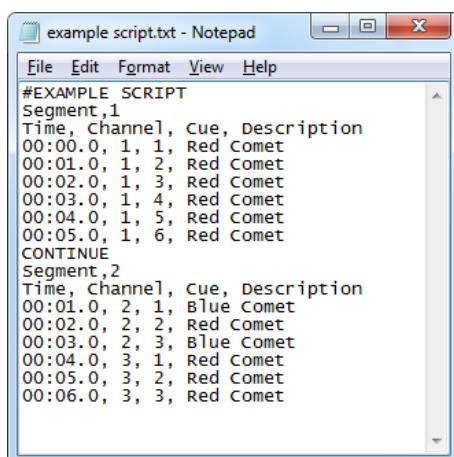


```
example script.txt - Notepad
File Edit Format View Help
#EXAMPLE SCRIPT
Segment,1
Time, Channel, Cue, Description
00:00.0, 1, 1, Red Comet
00:01.0, 1, 2, Red Comet
00:02.0, 1, 3, Red Comet
00:03.0, 1, 4, Red Comet
00:04.0, 1, 5, Red Comet
00:05.0, 1, 6, Red Comet
CONTINUE
Segment,2
Time, Channel, Cue, Description
00:00.0, 2, 1, Blue Comet
00:01.0, 2, 2, Red Comet
00:02.0, 2, 3, Blue Comet
00:03.0, 3, 1, Red Comet
00:04.0, 3, 2, Red Comet
00:05.0, 3, 3, Red Comet
```

The last cue of Segment 1 and the first cue of Segment 2 will fire at the same time.

To avoid this ensure the first time of the proceeding segment is a non-zero value.

For example:



```
example script.txt - Notepad
File Edit Format View Help
#EXAMPLE SCRIPT
Segment,1
Time, Channel, Cue, Description
00:00.0, 1, 1, Red Comet
00:01.0, 1, 2, Red Comet
00:02.0, 1, 3, Red Comet
00:03.0, 1, 4, Red Comet
00:04.0, 1, 5, Red Comet
00:05.0, 1, 6, Red Comet
CONTINUE
Segment,2
Time, Channel, Cue, Description
00:01.0, 2, 1, Blue Comet
00:02.0, 2, 2, Red Comet
00:03.0, 2, 3, Blue Comet
00:04.0, 3, 1, Red Comet
00:05.0, 3, 2, Red Comet
00:06.0, 3, 3, Red Comet
```

The last cue of Segment 1 will fire and then one second later the first cue of Segment 2 will fire.

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## How do I set up and fire a scripted show?

The following instructions assumes some familiarity with how the FireStorm System operates. If you need to understand this, please see the FireStorm Instruction Manual.

1. Decide how many firing modules you need. In this example we will assume 4 x RX18 (18 Cue Module) are used to give 4 x 18 = 72 cues.
2. We recommend you clear the TX2 before each show is setup to ensure that only the correct modules are bonded to the correct cues. Do this by pressing and holding the OK /CLR button until you see the confirmation message.
3. Bond each Firing Module to a channel and cue **one module at a time**. We recommend only 1 module per channel, and bond that module to cue 1. This provides the simplest possible mapping between script lines and cues on modules. It will also allow easy writing and debugging of the script. In this example we bond the Modules as below.

| Module | Channel | Cue |
|--------|---------|-----|
| A      | 1       | 1   |
| B      | 2       | 1   |
| C      | 3       | 1   |
| D      | 4       | 1   |

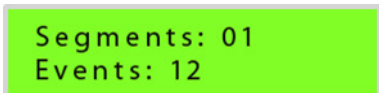
We recommend writing the channel number clearly on each module using duct tape and marker pen.

4. Load the script by putting the USB memory stick into the TX2.
5. Select the **correct** script using the right hand UP and DOWN arrows. We recommend only having 1 script on the USB memory stick. This will help avoid any mistakes.
6. Press OK to load and validate the script.  
If the script is valid then the display will show



We recommend paying close attention to the following steps as it will provide several checks to ensure you have written a correct script.

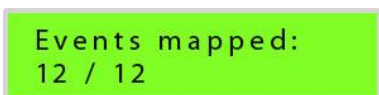
7. The display will then show the Number of Segments and the Number of Events (lines) in the script.



Is this correct?  
Press OK to continue.

8. The next step is useful to ensure you have bonded the correct number of modules to the transmitter to completely fire your script. Note that you can still proceed by pressing OK even if there is a problem.

The display will show the number of Script Events that have been matched to bonded cues. You want these numbers to be the same. For example with 12 events in a script and 1 x 18 Cue Module bonded to the transmitter, there are 12 available cues to map to 12 events in your script. Everything is good!



Is this correct?  
Press OK to continue.

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However if you had written a 12 event script and were using 2 x 6 Cue Modules to fire it, but you had only bonded 1 x 6 cue Module to the transmitter, you would see this:

Events mapped:  
06 / 12

**This is not correct!**  
However you can still press OK to continue.

9. The next step will send the script to the Modules. The screen will show how modules received the script and how many did not (if any).

Success: 001  
Fail: 000

**Is this correct?**  
Press OK to continue.

You can now press OK to continue.

READY  
Arm to continue

**Turn the Arm Key to the ARM position.**

**THE SYSTEM IS NOW READY TO FIRE.  
ENSURE THE NECESSARY SAFETY CHECKS HAVE BEEN MADE.**

At this point you may remove the USB memory stick if required.

**Note:** The TX2 will store the script until it is restarted. The modules will also store the script until restarted.

If there are failures when sending the script, press OK to retry sending to those Modules.

Success: 05  
Fail: 01

**Press OK if there are failures.**

Things to check if script does not send to all modules:

**Are all modules switched to ARM?**

**Are all modules in radio range?**

Retry sending?

**Press OK again to retry sending.**

**Note:** If there is a problem immediately before show time and you must proceed without all modules, then you can turn the ARM KEY to the ARM position anyway and continue.

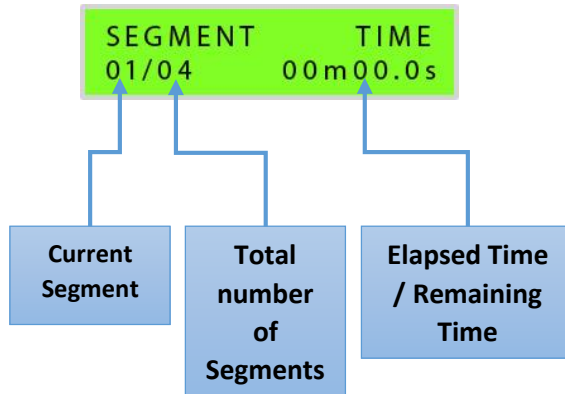
Success: 05  
Fail: 01

**Turn Arm Key to ARM anyway to continue despite the failed module.**

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## Controlling Scripted Firing

After Arming the unit this screen will display:



The CUE UP arrow can be pressed to cycle through:

- The time elapsed for a segment.
- The time remaining for a segment.
- A decreasing bargraph for the time remaining for a segment.



## Play & Pause a Script

Each script segment can be Played and Paused at any time using the PLAY and PAUSE buttons.

A script will stop firing immediately if the ARM key is turned to SAFE.

A script will stop firing immediately if the PAUSE button is pressed.

A script will stop firing if the field modules lose signal from the TX2 transmitter for more than 10 seconds E.g. if the TX2 is switched off.

If the field module reacquires the signal after 10 seconds it will continue firing from the correct point in the script.

Each segment can be skipped over or replayed using the CHANNEL UP and DOWN buttons.

The next cue in the script can be fired regardless of the current time by pressing PLAY. This is useful if a cue fails to fire. Pressing play multiple times will fire each successive cue.

## Stop Scripted Firing & Return to Manual Firing

If you need to stop a script and revert to manual firing, simply press PAUSE button or turn ARM KEY to SAFE, remove the USB stick (if inserted), and re-start the remote control. You can now use manual firing as normal.



# FIRESTORM TX2 SCRIPT INSTRUCTIONS

## Script Error Messages

The TX2 Control desk does validation on the script when it is loaded. If a script fails validation an error message will be displayed.

### USB Errors

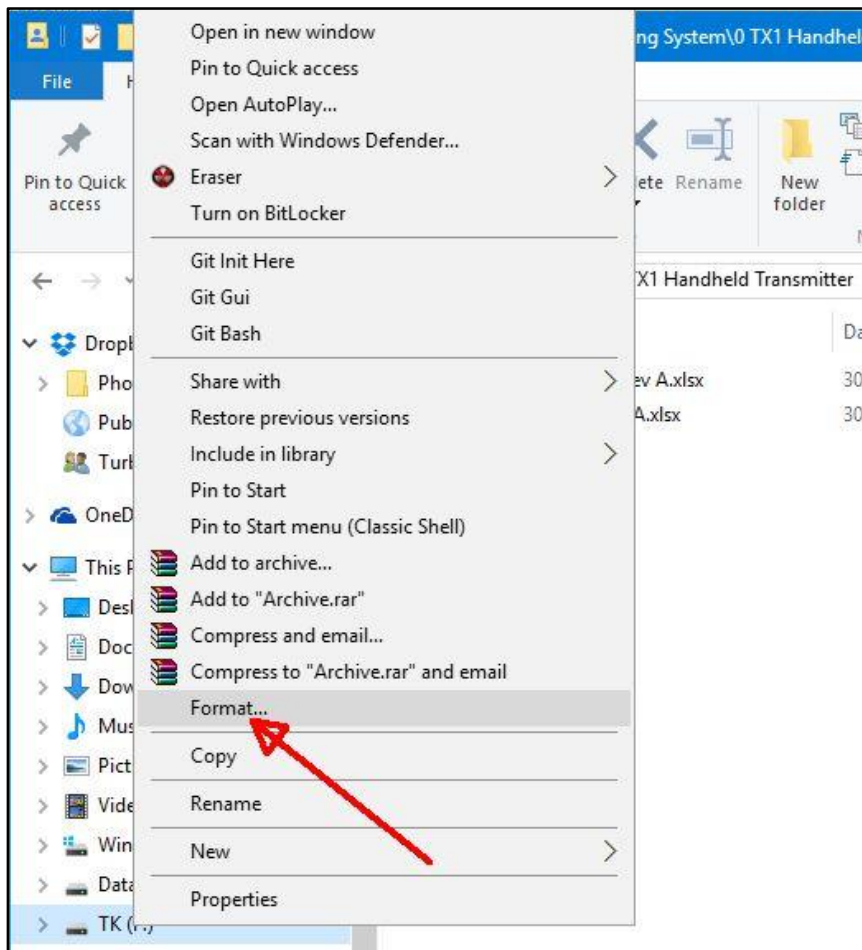
| USB Error # | Description             | Solution  |
|-------------|-------------------------|---|
| 1           | Not Formatted           | Format the USB stick to NTFS or FAT32 file system.  |
| 2           | Unsupported File System | Format the USB stick to NTFS or FAT32 file system. MAC OS file system is not supported. Linux file system is not supported. |
| 3           | Bad Partition           | The USB stick may be faulty. Format is and try again or try another stick.  |
| 4           | Bad Sector              | The USB stick may be faulty. Format is and try again or try another stick.  |

### Script Errors

| Message               | Solution   |
|-----------------------|--|
| Script too long       | The script exceeds the maximum number of events.                             |
| Script Typo Error ### | There is an erroneous character in the script. ### is the line number.       |
| Script Duplicate ###  | There is a duplicate Time, Channel, Cue combination. ### is the line number. |
| File Read Error       | The file cannot be read. Try re-saving it to the USB stick.                  |
| File Open Error       | The file cannot be opened. Try re-saving it to the USB stick.                |

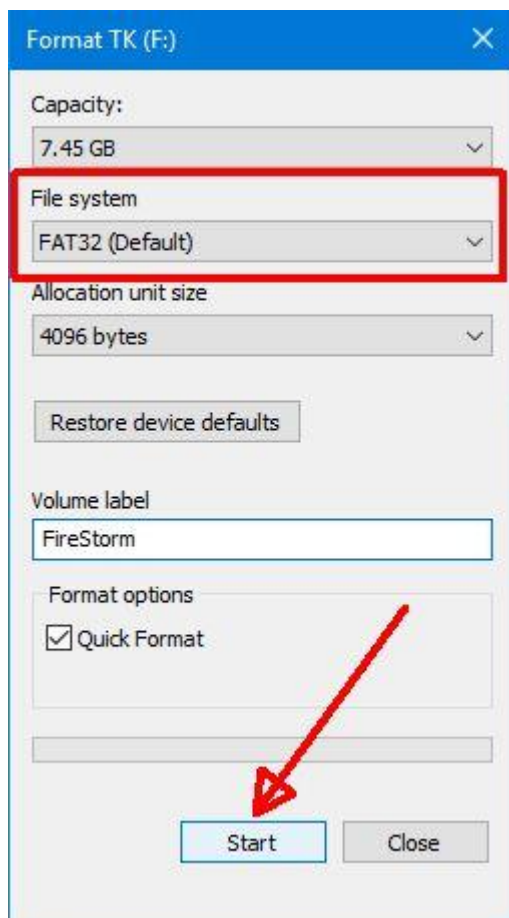
## Correctly Format a USB Memory Stick

1. In Windows Explorer, right click on the USB drive.



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2. Click **Format**.



3. Make sure the File System is selected as FAT32 or NTFS.

4. Give the drive a suitable name if desired e.g. FireStorm.

5. Click **Start**.

**Note:** The contents of the drive will be erased. Ensure contents of drive are backed up.