



## **FIRING SYSTEMS**

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## 1- System Requirements

The following are minimum requirements for PC and laptop computers.

PC- IBM Compatible Pentium II 400 Mhz, 64 MB Ram, 2GB hard drive, CD RW Drive.

Windows 98, Me, XP, NT, Microsoft Excel.

Laptop- IBM compatible Pentium II 400 Mhz, 364 MB ram, 2GB hard drive, CD rom,

Windows 98, Me, XP, NT, Microsoft Excel.

## 2- Software installation

- 1- Install Dinkey Dongle to printer port, on early versions only.
- 2- Install CD into Drive,
- 3- Double click on my computer, Then double click the CD drive
- 4- Double click on Setup icon with picture of computer,
- 5- Follow setup procedures, Program will automatically install on your computer.
- 6- Smart Show will be found in **programs** in your start menu, you may create a shortcut if desired.
- 7- Right click on start then left click Explore, scroll up to program files and left click the + sign, Scroll down to the smart show folder and right click on it, then click send to desktop, this will create a shortcut, in the SmartShow folder are two sub folders Show and Wave files this is where to store all of your files. Also your executable file and database are stored here.
- 8- There is a shareware version of Gold wave included on the disc for your convenience, **this is not a registered version**, should you choose to keep it you must register it with gold Wave via the Internet.

## 3- Controls

- 9- **File** tab, Used to start new shows, open existing shows, Save shows, Open wave files, clear wave files, and print reports.
- 10- **Edit** tab, Used to copy, paste, and delete lines.
- 11- **View** tab, Used to open Drag and drop screen.
- 12- **Time Code Settings** Used to set time code mode in script and run pages also to set offset.
- 13- **Com Port** Used to set COM ports for firing command output and Time code input.
- 14- **Database** tab, Used to open Database for input and sorting of shell information.
- 15- **Script** tab, Used for scripting shows and running wave files.
- 16- **Run** tab, Used to open run screen for testing and firing shows. **Run will be covered in Smart Fire Instructions.**
- 17- **Ord** tab, Tab shows line item order of program, and can be used to sort by order.
- 18- **Type** tab, Shell effects from database.
- 19- **Caliber** tab, Shows shell size from database.
- 20- **Time** tab, Shows time of program that line item will detonate, also used to sort by time
- 21- **Prefire** tab, Displays time from ignition to detonation of shell, entered in database.
- 22- **Qty** tab, For entering quantity of items on any line.
- 23- **Pos** tab, Column used to enter a unique two digit number to track shell location in field and for grouping shells for auto address of modules, also for Pos lockout during show.
- 24- **Mod** tab, Address of module 01-99.
- 25- **Pin** tab, Circuit number on module 1-32
- 26- **Cost** tab, Collumn tracks of product entered into show,
- 27- **Description/Notes** tab, Collumn for duration etc entering special notes such as angle of effect or
- 28- **Auto address** tab, Once show has been sorted by Position this tab will address the show
- 29- **Player controls**, Start, Pause, Stop, Fast Forward, Fast Reverse, and Rewind.
- 30- **Save by Position**, Use to split file to multiple computers for multiple site firing.

## 4- Database

The Database will store information in alpha numeric order, and once compiled may be sorted either by Type or Caliber for drag and drop by clicking on the prospective tab. Sort must be done in this Folder to setup drag and drop format that you wish to script in. It is recommended that when Entering information to start each effect with the first letter of the manufacturer to organize the Sort. Use the save button frequently to protect your work. Caliber, prefer time, cost and description Will be transferred to scripted lines. Fireworks data will be displayed as an Excel file in Smart Show.

You may open excel file from this icon, also **you must change this file from read only to archive By right clicking on icon then left click properties, uncheck read only and check archive, click Apply then close.**

## 5- Import Wave File

Wave files should be saved in the **wave file** folder prior to loading. Double click on Smart Show To Launch program. Left click on File, then on Wave file, wave file folder should be at look in Dialog Box, Double click on Wave file desired and it will load into program.

You may open new Wave files or Clear wave files from main screen by commands at file tab.

## 6- Script Program

Once wave file is loaded and visible at bottom you may start scripting program by starting wave file With control, the green and red centerline is the point of shell burst and the numbers represent the Show time in seconds, you may enter cues by tapping the space bar, when stop button is activated New cues will appear in grid by time order, times may be changed manually to change burst times, Also lines may be copied or deleted at any time. Use go to tab to go to specific point in wave file.

## 7- Drag and Drop

To enter shells into program you need first click on Database tab and sort by type or caliber by Clicking on prospective tab to format drag and drop. Go back to script page and open view menu And then click on fireworks drag and drop. Find desired shell and left click and drag onto desired Line, to duplicate effect at same time highlight line and open edit menu, left click on copy, reopen Edit menu and left click on paste, repeat pasting for each additional line. To duplicate shell on Different time lines, Highlight shell in drag and drop column and hit enter as many times as needed Enter a Pos number at this time.

### **Position column**

Every shell entered into program must have a two-digit position number to locate its area in the field And also to group together in a pos sort to auto address for keeping all areas together in the same Modules, position numbers are to be 01-99

### **Auto Address**

After show has been completed sort program by TYPE by clicking the type tab, then sort by Position by clicking the pos tab, once you do this All like positions will be lined up in order, at this Time click the auto address tab and each position will be addressed in order to one or more Modules addresses may be entered or changed manually.

## **8- Saving Programs**

To save show program go to file menu and left click on save as, save in: dialog box should have **Show files** folder, Name show file and type in file name dialog box, then click save. Subsequent Saving may be done at the file menu or when prompted upon exit of program. Wave file and show name.csv should all be saved in perspective folders in smart show.

### **Saving to CD**

To transfer programs to other computers Wave and Show.csv and must be Saved onto a CD.

## **9- Printing Reports**

Three separate reports may be generated simply by clicking on file tab and then on desired report.

**Loading report** Used for making equipment list, addressing and packing show, and tracking items In Field. **First sort by type then print loading report.**

**Cost report** Shows total of each item used and total cost.

**Script report** Shows program in time order.

## **10- Opening Transferred Program Files on Laptop**

Insert CD into drive, Click My Computer then click cd drive, transfer wave file to wave file folder, And Show CSV file to Show file folder.

Once both files have been transferred you may have to change the show csv file

From read only to archive as outlined in section 4 Database, The wave file may stay read only.

Once completed shows may be opened normally as on main computer.

**DISCLAIMER; The purpose of this equipment is to cause initiation of industry standard Pyrotechnic electric matches to ignite display type fireworks or pyrotechnic special effects. Fireworks and special effects materials are explosives and may cause personal injuries or death to yourself or others, including spectators. SAFTEY IS YOUR RESPONSIBILITY and is beyond the control of PYROMATE Inc. The buyer / user assumes all responsibility and liability in the use of this equipment and further agrees, by purchase and /or use of this equipment, to indemnify and hold harmless PYROMATE Inc. and its agents against all liability for injury, loss, or damage direct or Consequential arising out of the use of, or inability to use this equipment. Any subsequent purchaser is also bound by these conditions of sale.**

## **Smart Fire Instructions**

**WARNING!!!!**

**THIS SYSTEM IS NOT WATERPROOF, COVER YOUR MODULES,**

## **WATER INFILTRATION WILL CAUSE SYSTEM FAILURE!!!!!!**

### **11- Firing Panel**

The firing panel has an internal power supply that is rechargeable either from 120 or 12 volt using supplied adapters. The basics are as follows.

**On-Off Power**

**Reset**, Circuit breaker for cable fault

**Key**, used for arming panel

**Computer**, Cable input from laptop serial port

**Output**, Cable out to Modules

**Deadman**, Used for Continuity status test, Safety dead man and manual step fire in trigger mode.

**Short LED**, When lit indicates short in cable.

**Com LED**, Indicates Deadman on and off

Normal procedure is to attach computer, deadman, and Modules prior to turning on or arming controller. Also all modules should be in safe mode. Power may be turned on after proceeding procedures have been initiated, at this time short light should be observed, if light is lit there is a shorted cable.

### **12- Smart Module**

There are two types of Smart Modules the SM-32 which is a digital brain only type that will interface with Pyromate connection modules or rails via an adapter cable. And the SM32-T which is a self contained digital module with integral termination terminals. Both modules have the same features and functions, Input and output for XLR cables, address thumbwheel, Three position rotary knob 1 safe, position for wiring igniters and activating system, 2 test, for safe test or system continuity, 3 arm, for testing and firing system. Also there is a LED that indicates the modules self Diagnostic, when the system is powered up the led will flash all three colors during self-test then will flash a single color for mode Green safe, Orange Test, Red Arm, a solid light or no light indicates a problem.

### **13- Connecting Laptop**

Connect laptop with cable supplied to computer input on controller, Make sure that Dinkey Dongle Is installed if needed, deadman is connected to controller and also output cable to modules is Connected to controller, If 120 volts is available it is recommended to plug in both the laptop and Controller, otherwise you may rely on battery power.

### **14- Loading Show**

**DISABLE ALL POWER MANAGEMENT FEATURES ON LAPTOP INCLUDING BIOS BEFORE RUNNING PROGRAM!!!!!!**

From the desktop open Smart Show, then go to file then open then double click on the show file that you desire, once show is loaded then check to see that wave file is visible at bottom and play it a bit to make sure that it is running Ok, click on the **Run** tab to open run mode, click on **Load** tab, and the show will open.

### **15- Testing Continuity**

**NEVER UNDER ANY CIRCUMSTANCES HAVE PERSONNELL IN FIELD WITH POWER APPLIED TO SYSTEM!!!!!!**

Make sure that modules are set to test mode for initial continuity test, **with the top button on the Deadman depressed**; click on the **Test Con** tab and line by line  
The program will scroll through modules and display status on screen, clear any problems and then click the **retest** tab, after completing test you may at this time test in the arm mode, once completed click **proceed** tab and the show will be ready to fire.

### **16- Configure sound**

Open laptop volume control and set balance to center, using patch cord and Imp 2 send signal to sound system, use volume control to increase or decrease line level output.

### **17- Firing Show (ALWAYS REBOOT YOUR COMPUTER BEFORE FINAL TEST AND FIRING)**

From the **Run** page, load and complete cont test on show file, and then proceed, at this time you must hold down the top button of the deadman to activate the safety off mode, when button is released firing will stop.

To start show click on Run, the program will now play music and send firing commands to modules, you will see each line move at the lift time of shell. There are a number of ways to stop the program in the event of a sound system failure or a problem with the show,

- 1- Clicking on the **Abort** or **Stop** button will stop music and firing commands, click on **Run** to resume in full sync,
- 2- Releasing **deadman** will display a red com light on firing panel and stop firing commands from reaching modules but continue playing music.
- 3- Any position may be temporarily locked out from firing by typing in the double digit POS number and hitting the **enter** key, a display will open on the screen showing the locked out position, to resume firing on that position just hit the **enter** key.

### **18- Disclaimer**

**WARNING:** The SmartFire system is not waterproof, do not let your Modules or Firing panel get rained on or the unit may malfunction!!!!!!

**DISCLAIMER; The purpose of this equipment is to cause initiation of industry standard Pyrotechnic electric matches to ignite display type fireworks or pyrotechnic special effects. Fireworks and special effects materials are explosives and may cause personal injuries or death to yourself or others, including spectators. SAFTEY IS YOUR RESPONSIBILITY and is beyond the control of PYROMATE Inc. The buyer / user assumes all responsibility and liability in the use of this equipment and further agrees, by purchase and /or use of this equipment, to indemnify and hold harmless PYROMATE Inc. and its agents against all liability for injury, loss, or damage direct or Consequential arising out of the use of, or inability to use this equipment. Any subsequent purchaser is also bound by these conditions of sale.**

### **19-Time Code**

- 1- Before scripting show open **Script Settings Menu** and select **wave file** for your scripting time code, open Wave file then save show. Script your show normally as you would with Wave file. Run show time code and Time code offset are not important at this stage in time.
- 2- **Firing in Wave File mode**

Select **Wave file** in **Run show time code** Menu and leave **offset at 0** then save show and run in wave file as normal.

### **3- Firing in Trigger Mode**

You may take any show scripted in any mode and select **Trigger** in **Run Show Time Code** Mode, save and when you go to run mode load the show normally test cont and when you click run a bar will open that says, **Deadman Trigger Mode Use Trigger to Fire Next Shot.**

### **4- Scripting – Firing, in Computer Mode**

If you chose to set up a show without a Wave file and script strictly by entering time in the show grid then you would select **Computer** in both **Script** and **Run** settings in the Time Code Settings Menu.

### **5- Using Time Code**

Upon purchase of your Time Code Modem and USB port adapter you will receive a CD with approximately 60 Minutes of **FSK** And **SMPTE ND 30** Time codes. The first thing you need to do is to save the CD as a stereo wave file in Gold Wave, Next save each code individually as a Mono wave file Labeled FSK and SMPTE Respectively, These mono files will be what you will always use when generating Time code programs.

#### **Creating Working CD**

Open a new sound in stereo Cut and paste your selected time code wave file to one channel of new Wave and then cut and past your stereo show wave file to the other channel, make sure to insert at least 30 seconds of silence in front of your music wave file channel only, therefore when played you will get at least 30 seconds of time code before the music starts, when complete, save as show name. Now insert a blank CD and create an audio CD with your CD creator, you now have a CD that will play music from one channel and send audio time code on the other.

#### **Setting Time Code Offset**

At this time you should have already installed your USB port adapter and software, selected the proper COM port for your time code input and have the modem connected to your USB port via the RS232 serial port and music source via the playback RCA jack. Open your show and change Scripting Time Code to the time code that you are using normally **FSK** then click Ok, Leave the offset at 0 at this time, pick a cue in your program that you know the exact time and this will be your reference point, with a stopwatch in hand start the CD, time code and music will start, If time code level is OK Red (Fault) light will go out and time

code will appear on screen, when the reference cue line moves start the watch and when you hear the audio cue stop the watch, this will be your offset time, enter script settings and enter the time into **Time Code Offset** box, Go back to scripting page and run CD again and you should be pretty much in time, you might have to tweak the offset time a couple of times to get it perfect, Once it is set save the show with the correct Offset time and each time you run the show it should be in perfect time, once you are satisfied you may change the Scripting time code back to Wave file for viewing purposes but **leave Run Show Time Code Set To FSK and Time Code Offset to your selected Offset time. At this time save show and exit Smart Show Program.**

### **Testing Time Code in Run Mode**

Attach modem to Laptop and time code source, With **Controller Disconnected** open smart show and load program, Open show then proceed to run, Proper Time code should be shown below Grid, You must do test con even without controller connected to be able to proceed, when complete click on **Wait button** and a red bar will open that says **Waiting for Time Code.** At this point the computer will wait indefinitely for time code, Once time code is transmitted and received bar will change to green and say **Time code Com OK** and you should see the time running in the time box. If you are in the field getting ready for a show and you have tested Time code OK you may at that time click stop then reset and wait in run mode until the show at which time you would attach controller click load, then test con, then Proceed, then safety off, and wait, **When waiting for Time code is displayed you are locked and loaded for fire.** Or you can shut down and reboot just before show.

### **20-Virtual Manual Panel**

The Virtual Manual Panel is an option for \$ 299.00 It will allow you to access it 6 times for free, and then will require an unlock code to activate it permanently, Once loaded you can activate and fire circuits by clicking the mouse on the screen.

### **21-SETUP**

It is extremely important that the system is wired in accordance to the basic Sample field setup.

**Trunk line from controller must be maintained through splitters and each branch must feed through no more than 6 Field Modules.**

It is advised that on long runs with over 20 modules that a Booster pack be used.

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**PCI V2.00 Features**



***Firmware features:***

1. Firmware and Hardware reported on text display at startup
2. ARM condition warning long beep
3. Battery level reporting,
4. Battery low warning
5. Battery very low alarm
6. XLR +24 amperage reporting SHORT LED green
7. XLR +24 over current warning SHORT LED yellow, tone clicking
8. XLR +24 shorting alarm SHORT LED red, tone beeping
9. XLR +24 fuse detection alarm SHORT LED red, tone beeping, text message XLR FUSE.
10. XLR OFF message on text display when not ARMED, SHORT LED off
11. Status command passing while HOLDFIRE is released.
12. Fire command blocked and warning beep while HOLDFIRE is released.
13. Transmitted commands blocked warning while interface is not ARMED, text error message TX BLOCK.
14. Transmitted traffic indicated by COM LED flashes red for each burst.
15. Received traffic indicated by COM LED flashes green for each burst

***Hardware features:***

16. Text display for numeric values and messages.
17. Audible clicks beeps and tone.
18. RS485 A and B lines disconnected from XLR connector when not ARMED by a relay activated by ARM line power.
19. TRIGGER and HOLDFIRE lines opto-isolated.
20. XLR +24V blocking diode incorporated on PCB
21. External fuse plugs into PCBA to allow detection of tripped condition
22. XLR connector plugs directly to PCBA



