USER MANUAL

Safety

Warnings and Cautions

These are designed to alert your attention to hazards and important information that assists you in carrying out your activities on this machine safely and efficiently. Examples and descriptions of safety statements have been provided as follows:

WARNING: A WARNING ALERTS YOU TO HARMFUL OR POTENTIALLY LETHAL ACTIVITIES. A DESCRIPTION OF THE HAZARD IS GIVEN AND THE CONSEQUENCES OF IGNORING THEM.

Please note that the Sparkular units are not meant to be a continuous duration effect. The maximum running time is 60-90 seconds and can be repeated but should not be done to overheat the machine.

Eye Protection

THE EYE PROTECTION WARNING ICON IS SHOWN TO INDICATE THAT YOU MUST BE PROTECT YOUR EYES WHEN CLOSE TO THE MACHINE DURING MACHINE OPPPERATION.

Injury Voltages

WARNING: DANGEROUS VOLTAGES ARE PRESENT IN THIS MACHINE AND CONTROLLER WHEN ELECTRICAL POWER IS APPLIED. THERE IS A DANGER OF INJURY FROM ELECTRIC SHOCK. UNDER NO CIRCUMSTANCES ARE YOU TO ATTEMPT TO OPEN THE MACHINE AND CONTROLLER OR ATTMPT TO REMOVE OR ADJUST ANY COMPONENTS FITTED WITHIN THE MACHINE AND CONTROLLER. ONLY FULLY TRAINED SERVICE ENGINEERS ARE QUALIFIED TO OPEN THE MACHINE AND CONTROLLER.

Caution Against Liquids

WARNING: USE CAUTION SO THAT ANY LIQUIDS DO NOT WET THE MACHINE. KEEP THE MACHINE AND CONTROLLER DRYAND NOT USE ON RAINY OR SNOWY DAYS UNLESS COVERED.

Warning

PLEASE PREVENT ANYTHING FROM ENTERING THE FOUNTAIN PORT. IF THIS HAPPENS PLEASE CLEAR OBSTRUCTIONS BEFORE CONTINUING OPERATION.
PLEASE PREVENT MACHINE FROM DROPING WHEN INSTALLING "DAMAGE CAN OCCUR".

Warning on GRANULES

IF THE GRANULES CATCH ON FIRE OR GET AGRAVATED THE SUGGESTED METHOD OF EXTINGUISHING IS BY SAND OR CHEMICAL EXTINGUISHER. DO NOT TRY TO EMPTY THE MACHINE AS THIS WILL RESULT IN AGRAVITAING THE GRANULES.

Safe Distance
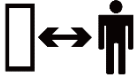
KEEP AUDIENCE AND FLAMMABLE MATERIALS AT A MINIMUM SAFETY DISTANCE OF 10 FEET. KEEP OUT OF REACH OF THE PUBLIC.

In Case of Emergency

IF THE MACHINE NEEDS TO BE STOPPED QUICKLY DUE TO AN EMERGENCY , PRESS THE "PAUSE" / "STOP" KEY ON THE CONTROLLERTO STOP THE MACHINE AND SWITCH THE MACHINE POWER SWITCH ON THE PANEL OF THE MACHINE TO THE "OFF" POSITION. IF NECESSARY CALL FOR MEDICAL ASSISTANCE AS REQUIRED.

Noise Emissions

THE NOISE EMISSION LEVEL FROM THIS MACHINE DOES NOT EXCEED 80 DB. THIS MEANS THAT THERE IS NO HAZARD TO HEARING AND, THEREFORE, NO LEGAL REQUIREMENT FOR EAR PROTECTION TO BE WORN WHEN WORKING IN THE VICINITY OF THIS MACHINE.

Cleaning

PLEASE INSPECT FOUNTAIN NOZZEL OF SPARKULAR MACHINE BEFORE USE AND CONFIRM WHETHER THERE ARE ACCUMULATED GRANULES. PLEASE CLEAN OUT EXCESS BY INVERTING THE UNIT TO CLEAN OUT PORT. EACH TIME BEFORE THE UNIT IS FIRED AND WHEN DONE BING USED THE CLEAR MATERIAL FUNCTION SHOULD BE USED TO PROLONG MACHINE LIFE. THE FOUNTAIN PORT CAN BE CLEANED WITH S BOTTLE BRUSH IF NECESSARY

Power Supply Requirement

PLEASE SELECT THE PROPER POWER CONNECTOR ACCORDING TO THE POWER OF THE SPARKULAR MACHINE. IF NECESSARY PLEASE CONTACT TO DISTRIBUTION BOX DIRECTLY BY SEPARATE CABLE.

PLEASE NOTE: ONE POWER SUPPLY CABLE CAN SUPPORT A MAXIMUM OF 6 SPARKULAR MACHINES. EACH MACHINE CAN BE CONNECTED INDIVIDUALLY OR WITH THE POWER-CON SERIES CABLES SUPPLIED.

Difference

PLEASE NOTE: THE VOTAGE OF MODEL BT01 AND BT02 IS DIFFERENT.
BT01: 220VAC
BT02: 110VAC

Table of Contents

1. Sparkular Model

1) Description of Products

BT01/BT02 is a revolutionary special effect system. It uses a newly designed delivery control system for a fountain style special effect and uses DMX communication and is compatible with other control equipment.

Sparkular	Part No.: BT01/BT02
![Sparkular machine image]	**Parameters:**
	Dimension: 200×215×285mm
	Weight: 8.5kg
	Input: 220VAC(BT01)/110VAC(BT02), 50/60Hz;
	Work Power: 365w
	Work Temp.: -10℃ ~ 50℃
	Casing: Anti-flaming ABS
	Fountain Height: 1.5m ~ 5m
	Interface type：double DMX input interfaces, double AC power interfaces

2) Instructions

The Sparkular system has two main components. The Sparkular head BT01/BT02 and the Host Control Console ZK6200. The BT01/BT02 has all safety features built into the smart feedback protocol that is readable on the Sparkular machine as well as the Host control console. *Please note that if the ZK6200 is not used and another DMX console is used the read out function for the console will not be able to be used.
The following descriptions will help to learn the operation and function of the working of both the Sparkular head and the host controller.

3) Brief Introduction of the Functions

a) The Controlling Signal of International Standard: DMX 512

b) Fixture uses Two Channels (Channel 1 controls effect & height 2 controls the Pre-Heat and Safety feature).

c) Adjustable Effect Height.

d) Continuous feedback Protection for Overheating, redundant safeties for heat protection.

e) Due to the onboard data transmission and logic integration of the operating system the Host Controller supplies a continuous readout while the system is on.

4) DMX512 Signal Link:

Using DMX512 signal controlling mode and the controlling signals among each equipment are connected in parallel, so it's better to use shielded twisted paired cables when connecting many equipment together. Each equipment is connected together through the DMX signal sockets (XLR connector) Input and output, and the three pin XLR plug

Tel：+86-731-83833068,   Fax：+86-731-83833069,   Web: www.showven.com,   Email:info@showven.com

Address: Building B1, Changsha E-Center, Liuyang Economic Development Zone, Hunan, China.   ZIP Code：410329

Page **1** of **18**

terminals connecting the equipment must be corresponding to each other. When connecting to the device signals, it's suggested to terminate the DMX signal so as to avoid decaying the signal strength caused by the signal reflection. DMX signal terminator is a resistance of 120 ohms/1w connecting the number two and three pins on the XLR plug, the resistance is connected to the output socket of the last device.

The definition of Three Pin XLR Plug: 1 Signal Ground line; 2 Signal-; 3 Signal+

Note:

1. *After the equipment starts up, it first needs to warm up. When the READY sign lights up, it indicates that the equipment is ready. You can operate the effect machine.*
2. *No foreign material (flammable) is allowed to cover the surface of the equipment, so as not to affect its cooling or impede the operation of the fountain. Do not place anything on sides or top that would impede cooling.*
3. *If find fountain becomes small, please add Sparkular Granules.*

5) Operation Panel:

a) **LCD** information display area, showing action menu and operating status of the equipment.
b) **LED** Displaying Area：
   READY: Flashing shows that the system is preparing, Solid Light shows that the system can operate.
   DMX: Flashing shows that the DMX signal is connected, no display shows that there is none connected.
   FAULT: Sign will light up when any error is detected.
   HEAT：Sign will light up when the system is heating.

c) **Control Button Area**：

   MENU: entering into the menu select
   DOWN: parameter reduction
   UP: parameter increase
   ENTER: confirm and save parameters

d) **Interface and Plugging Area**：

   POWER IN: BT01 is 220Vac and BT02 is 110Vac
   POWER OUT: BT01 is 220Vac and BT02 is 110Vac
   DMX IN: DMX Communication Signal Input
   DMX OUT: DMX Communication Signal Switching Output

Tel：+86-731-83833068,   Fax：+86-731-83833069,   Web: www.showven.com,   Email:info@showven.com

Address: Building B1, Changsha E-Center, Liuyang Economic Development Zone, Hunan, China.   ZIP Code：410329

Page **2** of **18**

e) **Radio Frequency Identification Area：**

The Product Identification card/emblem attached to the spark granules determines the parameter and type of the product that is identified through swiping the card.

Note:

Please note that the card enables the unit for 10-20 minutes of operation (which is the amount of time each batch will last). The card supplied only works once and is unusable after it has been swiped.

6) Interface

a) Main Interface：

i)   Displays DMX Address.

ii) Displays the present temperature of the inner core.

iii) Displays the error information when it happens.

Error Information	Illustration
E0 System IC	Systematic error
E1 Motor Protect	Over current protection of the motor
E2 Temp. Sensor	Temperature sensor is not connected or be damaged.
E3 P Temp. Over	The equipment stops due to the over-temperature of the chassis
E4 Time Remain	The Sparkular Grain materials are about to run out
E5 K Temp. Over	The equipment stops due to over-temperature of the mechanism
E6 Heating Failure	Perhaps some issues for heating system. Please power off when this error happens.

b) The Interface of Setting：

Press MENU, you can enter into the interface of settings, and press MENU, you can enter into different set of options until you return to the main interface.

Option	Scope	Illustration
Set DMX Address	1-512	Set DMX Address
Fountain Height	1-10	Manually adjust the height of Sparkular
Manual Heat	On/Off	Start by manual, only for test.
Manual Fountain	On/Off	Start by manual, only for test.

Tel：+86-731-83833068,   Fax：+86-731-83833069,   Web: www.showven.com,   Email:info@showven.com

Address: Building B1, Changsha E-Center, Liuyang Economic Development Zone, Hunan, China.   ZIP Code：410329

Page **3** of **18**

Sparkular No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
DMX Address	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35

Note: If the wrong address is on the Sparkular unit this will cause an incorrect operation of the device.

a) Advanced Interface：

Press MENU for 3 seconds, you can enter into the Advanced Interface. Press MENU, you can enter into different options, and press MENU for 3 seconds, you can return to the main interface.

Option	Scope	Illustration
Set Temperature	500-610	Default setting 580
LCD Backlight	On/Off	LCD Backlight Open/Off
Density@ Height 1	30-50	Adjusts the Value of the Granular feed or density #1*
Density@ Height 2	30-50	Adjusts the Value of the Granular feed or density #2*
Density@ Height 3	30-50	Adjusts the Value of the Granular feed or density #3*
Density@ Height 4	30-60	Adjusts the Value of the Granular feed or density #4*
Density@ Height 5	30-70	Adjusts the Value of the Granular feed or density #5*
Density@ Height 6	40-100	Adjusts the Value of the Granular feed or density #6*
Density@ Height 7	40-100	Adjusts the Value of the Granular feed or density #7*
Density@ Height 8	40-100	Adjusts the Value of the Granular feed or density #8*
Density@ Height 9	40-100	Adjusts the Value of the Granular feed or density #9*
Density@ Height 10	40-100	Adjusts the Value of the Granular feed or density #10*
Mode Selection	Factory Mode/ User Mode	Used for the factory to test the equipment
Default Parameter		The parameters of the equipment can be restored to the factory settings through pressing Enter
Motor Protect	On/Off	Default setting is Off
Power Selection	220/110Vac	Select input power supply voltage. Default setting for BT02 is 110VAC.

Each Height can have a density of the Granules that will be feed on that Height from 10-100%

Tel：+86-731-83833068,   Fax：+86-731-83833069,   Web: www.showven.com,   Email:info@showven.com

Address: Building B1, Changsha E-Center, Liuyang Economic Development Zone, Hunan, China.   ZIP Code：410329

Page **4** of **18**

7) DMX Channel Mode: The system occupies only two channels.

First Channel	Function
0-15	Fountain Off
16-39	Fountain Height 1
40-63	Fountain Height 2
64-87	Fountain Height 3
88-111	Fountain Height 4
112-135	Fountain Height 5
136-159	Fountain Height 6
160-183	Fountain Height 7
184-207	Fountain Height 8
208-231	Fountain Height 9
232-255	Fountain Height 10
Second Channel	**Function**
60-80	Clear Material
20-40	EMERGENCY STOP
0-10	Pre-heat Off
240-255	Pre-heat On

Tel：+86-731-83833068,   Fax：+86-731-83833069,   Web: www.showven.com,   Email:info@showven.com

Address: Building B1, Changsha E-Center, Liuyang Economic Development Zone, Hunan, China.   ZIP Code：410329

Page **5** of **18**

2. Host Controller (ZK6200)

1) Description of Hardware

1. ZK6200 Host Controller is an intelligent system specially designed for the multi-effects and remote control of Sparkular machine, so as to create the simulation and demonstration of Pyrotechnic Gerb effects. Diversified port configuration is suitable for control of technical performances. The audio trigger and timing code trigger can be used to control the synchronous function of music. LAN port is installed for future control extension.

Host Controller	Part No.: ZK6200
	Parameters:
	Dimension: 390 x 300 x 110mm
	Weight: 3.5kg
	Input: 110-240Vac, 50/60Hz
	Work power: 15w
	Work Temp.: -10℃~50℃
	Ports: 2 CAN communication ports, USB port, 2 media ports (music trigger), 2 MIDI ports (music trigger), 2 DMX512, 1 input & 1 output port, Ethernet (not currently available-for future application)
	Support max.200m communication cable
	3350mAH battery
	Lifetime: > 3 years

2) Host Controller Introduction – Standard or Pro Version

a) International standard DMX512 signal output

b) Support 18 units Sparkular at the same time (Standard = 18 units / Pro Controller = 54 units).

c) Five kinds of standard Dynamic modes: Synchronization (All Fire), Center to Ends, Ends to Center, Left to right，Right To Left, Special Effects and one kind of user-defined special effect mode, supports 8 files and each file supports 36000 lines at maximum (special effects last for 30 minutes)

d) There are multiple optional trigger sources. Hand, Music or Midi Inputs.

e) Support simulation function and LED display.

f) Monitoring function: System can pass back operation that shows on screen status of each Sparkular unit by (Temperature and Error messages these will display in F1 Mode on screen)

g) Emergency Function: Pause or Stop Button. (Earlier panel version have Pause buttons)

Tel：+86-731-83833068,   Fax：+86-731-83833069,   Web: www.showven.com,   Email:info@showven.com

Address: Building B1, Changsha E-Center, Liuyang Economic Development Zone, Hunan, China.   ZIP Code：410329

Page **6** of **18**

3) Controller Operation Panel

Controller Operation Panel

a) Cable Connection Area:

AC Input: AC Power Input.

CAN: CAN Communication Input / Output Ports.

Tape In: Audio Signal Input Port of Main Channel

Aux: Audio Signal Socket of Side Channel.

Music: Displaying the Electrical Level of Audio Signal.

MIDI In: Time Synchronous Signal Input of MIDI & thru output.

DMX 512: DMX Signal Options (top) Output (bottom) Input for DMX console control.

LAN: Network's Cascade Socket among Multi-Chassis, so as to link the remote control feature.

Download: SparkularEdit200 soft Port

Tel：+86-731-83833068,   Fax：+86-731-83833069,   Web: www.showven.com,   Email:info@showven.com

Address: Building B1, Changsha E-Center, Liuyang Economic Development Zone, Hunan, China.   ZIP Code：410329

Page **7** of **18**

b) Manual Operation Area

No.1 to No.18 is Sparkular number.

Start or Stop Sparkular of one channel by pressing No. 1 to18 keys. The Sparkular can be operated after the Pre-Heat warm up for 3-5 minutes. The indicator light will flash green while heating up when ready it will be solid green. When firing is activated the indicator light will illuminate Red. Firing will occur when the Fire button is initiated. The Sparkular will stop automatically after 30 seconds if not shut off.

c) Mode Selection Area

There are five standard dynamic modes and one special effects mode which can be initiated by pressing the keys. These activate a pre-programmed page of functions that are displayed on each selection. They can be manually added. Manual operation will not be activated during special effects playback.

d) LCD Area

F1: Main Menu

F2: File Selection Menu

F3: Configuration Menu

F4: About Menu

e) Edit/Control Area

Tel：+86-731-83833068,   Fax：+86-731-83833069,   Web: www.showven.com,   Email:info@showven.com

Address: Building B1, Changsha E-Center, Liuyang Economic Development Zone, Hunan, China.   ZIP Code：410329

Page 8 of 18

Moving cursor into editing area, and parameters can be programmed by pressing number keys or up/down keys.

Test --- When pressing the Test, Sparkular file will be operated and LED will display the effect, but communication won't be output. This is also for factory testing.

Pause or Stop --- Device can be forced to stop once any abnormality happens. Pre-heat also shuts off. The device should be released from the pause status by pressing fire if there are no abnormalities. This action can also be used to clear warning information. After this Pre-Heat will need to be turned back on. Please note that Original Panels have a Pause button new versions have a Stop button.

Forward --- Under the special effect mode, the operating time can be put forward.

Rewind --- Under the special effect mode, the operating time can be put backward.

Clear Material --- After device's long-distance transportation, the granules can be dislodged into the heating tube it can be cleared by pressing this key so as to have a uniform operation of the device.

Pre-heat --- Before starting-up Sparkular the pre-heat function should be turned on first and Sparkular units can be fired only when the system shows a ready (solid green light within 5 minutes). If the DMX is unplugged or communication is lost the Pre-Heat button will need to be reactivated. Leaving the pre-heat on for long durations without use will affect the life of the device. If the device will not be used for a long time, shut down the pre-heat function until needed.

Firing --- Sparkular programming file will be operated once the firing key is pressed. (Red Light) The firing can be paused or stopped and restarted by a second and third button press. This resets the cue from the top.
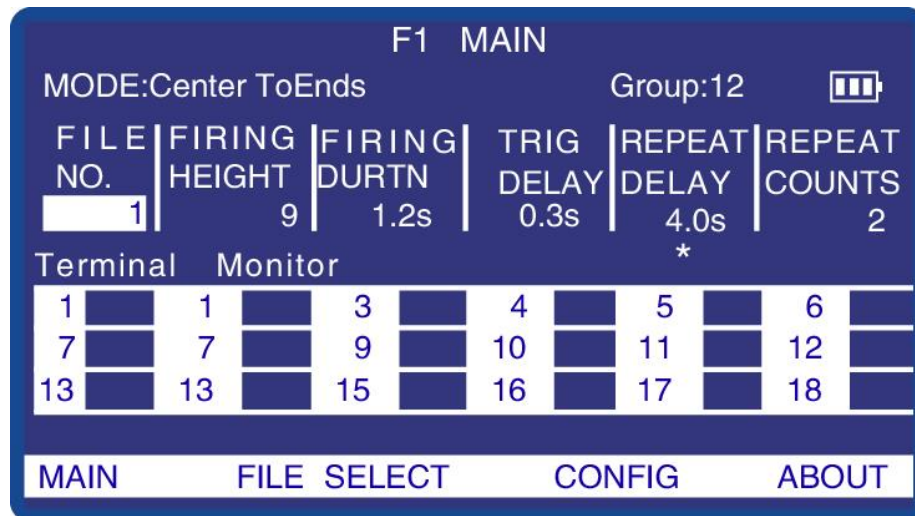
4) Interface

    a) Main Menu

MODE: Displaying the Mode **F1**

GROUP: Displaying the Total Quantity of the Devices.

Displays battery capacity and when the battery capacity is at one grid, it is necessary to recharge.

Tel：+86-731-83833068,   Fax：+86-731-83833069,   Web: www.showven.com,   Email:info@showven.com

Address: Building B1, Changsha E-Center, Liuyang Economic Development Zone, Hunan, China.   ZIP Code：410329

Page **9** of **18**

Left and right keys can make the cursor move on the different parameters.

Parameters can be edited through up/down keys and number keys and it will

Be saved automatically. The confirm key can also be initiated to save.
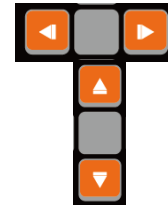
Option	Scope	Illustration
FILE NO.	1-8	File number
FIRING HEIGHT	1-10	Fountain Height. "." button can change height10 directly.
FIRING DURATION	0.1-30.0s	Duration of the Fountain
TRIGER DELAY	0.1-30.0s	Trigger Delay for the changes. Time between fixture firings
REPEAT PERIOD or REPEAT DELAY	0.1-30.0s	For Repeat Period the value must be greater than Duration. For Delay the Repeat timing starts at last cue.
REPEAT COUNTS	1-5	Repeated times (Loop)

*Note: Only "**Pause or Stop**, **forward**", "**Rewind**" button is available when "**Firing**" button lighting.*
Please take note the setting for "repeat counts".
Terminal Monitor: These are displayed in a table that is in F1 and below the play back file selected. These display the working status of Sparkular will be displayed in corresponding areas, and the number is the trigger temperature of Sparkular. There are 1-18 on the Standard Controller and 3 sets of 18 or 54 units that are displayed in rotational sequence. The standard operating temperature will be 585-620. The other warning information is as follows:

b) Error Messages List

Error Information	Illustration
E0 System IC	Systematic error
E1 Motor Protect	Over current protection of the motor
E2 Temp. Sensor	Temperature sensor is not connected or be damaged.
E3 P Temp. Over	The equipment stops due to the over-temperature of the chassis
E4 Time Remain	The Sparkular Grain materials are about to run out
E5 K Temp. Over	The equipment stops due to over-temperature of the mechanism
E6 Heating Failure	Perhaps some issues for heating system. Please power off when this error happened.

C) File Select: F2

F2 displays the parameters list of the 8 files that can be set to the height, duration, time between shots and the time until the next firing. Loops can be created and repeated up to 5 times per file in the count column. In this way you can select the needed files quickly.

F2 FILE SELECT

MODE: Synchronization

FILE No.	FURING NEIGHT	FIRING DURTN	TRIG DELAY	REPEAT DELAY	REPEAT COUNTS
1	3	5.0s	0.0s	5.0s	1
2	9	0.8s	0.0s	1.0s	1
3	3	5.0s	0.0s	7.0s	2
4	9	0.4s	0.0s	1.0s	1
5	9	0.5s	0.0s	5.0s	2
6	9	1.0s	0.0s	3.0s	3
7	9	1.0s	0.0s	2.0s	2
8	9	1.0s	0.0s	1.0s	1

D) Configuration Menu: F3

F3 CONFIG

SPARKULAR Start No.	: 1
SPARKULAR End No.	: 18
Trigger Source	: HAND
Audio Level	: 4
Audio Filter Delay	: 100ms
Audio Stop	: Firing Stop
Mode Selection	: User Mode
Language	: EngLish
Repeat Time Mode	: Repeat Delay Mode
DMX IN	: OFF
DMX Address	: 1

Tel：+86-731-83833068,   Fax：+86-731-83833069,   Web: www.showven.com,   Email:info@showven.com

Address: Building B1, Changsha E-Center, Liuyang Economic Development Zone, Hunan, China.   ZIP Code：410329

Page **11** of **18**

Option	Range	Description
Sparkular Start and end number	1-18 units (standard) 1-54 units (pro)	The maximum quantity of fixture/heads being used. Unless multiple controllers are used.
Trigger Source	HAND, AUDIO, MIDI	Trigger Sources options under special effect mode
Audio Level	1,2,3,4	Voltage classes1-4 after choosing Audio Trigger Mode
Audio Filter Delay	10-100ms	The filtering time of trigger signals after choosing Audio Trigger Mode
Audio Stop	Music Control stop or continue	This function allows the console to stop the program sequence or allow it to continue without music track.
Mode Selection	User Mode, Factory Mode	Factory Mode only used for the factory test
LANGUAGE	ENGLISH/CHINESE	Can be selected for Language
REPEAT TIME MODE	Repeat period or Repeat Delay	This Changes how the Files are played back; Repeat Period – Delay Explained in End Note
DMX Input	On/Off	DMX Input allows user to control through another DMX console and disables the Showven controller.
DMX Address	1-512	This gives the first fixture a start address for operation. It does not matter what the units are set to(low to high)
LAN	Communication Port	This port is for future Communication.

5) The Use of the Special Effect Mode:

With the USB cable connected to the computer, the download can be completed through Sparkular Edit 200 soft, so you can follow the User's Guide of Sparkular Edit 200 in detail. (See Console operation manual).

Trigger Source Options; when Trigger Source is selected as HAND, the file is operated by pressing Firing the Audio Trigger is interfered easily, and it can be triggered only one time. When the audio signal appears, the AUDIO Trigger starts-up. There's audio signal light on the Music window, and Audio Level 1-4 are listed from bottom to top.

When the Audio Level 1 is selected and Audio Filter Delay is 50ms, the first light of the Music is on and lasts for 50ms once Audio appears, and the file is operated. In order to prevent the mistake trigger, when this function is used, the Trigger Source should be first set as **HAND**, and then audio signal cable is plugged to connect to the normal audio signal source, finally the **AUDIO** is selected. Proper Audio Level and Audio Filter Delay are selected according to the strength of the audio signal.

When Trigger Source is set as MIDI, the operation of the device can be started and stopped synchronously by MIDI Time Code (MTC).

No matter which mode the Trigger Source is set, the operation of the device can be started and stopped synchronously by SparkularEdit200 connected computer.

Please note that there is another manual for the operation of the Sparkular Edit 200 Software. Currently the software does not stop Sparkular operation if the music feed or track is stopped or connection of playback track has been interrupted. The program would need to be paused or stopped by the operator and restarted to resume operation of the Sparkular show. (Once again the Pre-Heat function will turn off and would need to be reset to on position).

3. System Configuration and Connection

1) System Configuration
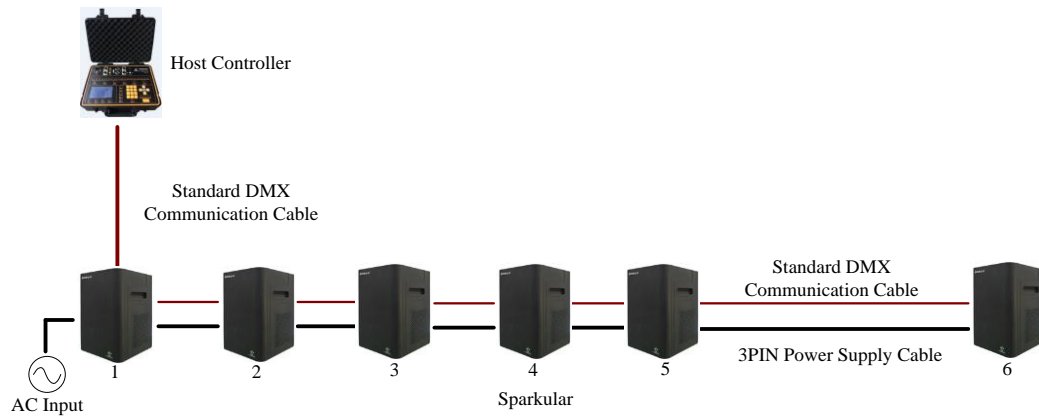
One set system configuration

6 units Configuration		
No.	Name	Qty
1	Sparkular	6
2	Host Controller	1
3	Communication Cable	6
4	Power Supply Cable	6

Tel：+86-731-83833068,   Fax：+86-731-83833069,   Web: www.showven.com,   Email:info@showven.com

Address: Building B1, Changsha E-Center, Liuyang Economic Development Zone, Hunan, China.   ZIP Code：410329

Page **13** of **18**

2) System Connection

a) Controller and Sparkular

Controller (ZK6200)   DMX Communication Cable   Sparkular (BT01/BT02)

b) Sparkular Power Main Supply Cable

Maximum of 6 units Sparkular in series with the Main power supply cable.

Sparkular (BT01/BT02)   Power Con Main Cable

c) Power Supplier Cable Connection between Sparkular

Sparkular (BT01/BT02)   Power Extension Supply Cable   Sparkular (BT01/BT02)

d) Communication Cable Connection between Sparkular

Sparkular (BT01/BT02)   DMX Communication Cable   Sparkular (BT01/BT02)

Tel：+86-731-83833068,   Fax：+86-731-83833069,   Web: www.showven.com,   Email:info@showven.com

Address: Building B1, Changsha E-Center, Liuyang Economic Development Zone, Hunan, China.   ZIP Code：410329

Page **14** of **18**

4. System Prepare and Start

1) **Fill the Sparkular Granules to Sparkular**

Please fill in Sparkular Granules into the material fill port which is the hatch located on the top of Sparkular machine. Please take note that machine can support a maximum of 200g of material. When filling you might need to shake the machine to allow all material to fit into cavity.

f) Please Note that there are 3 styles of the Granular material 1) Small, 2) Medium and 3) Large. These are a variety of height and density. They range from 1.5m to 5m in height.

	Small	Medium	Large
Fountain Height	1.5m~3m	1.5m~3.5m	2m~5m

a) **Open the Sparkular Granule material pouch**

1 Small   #2 Medium   #3 Large

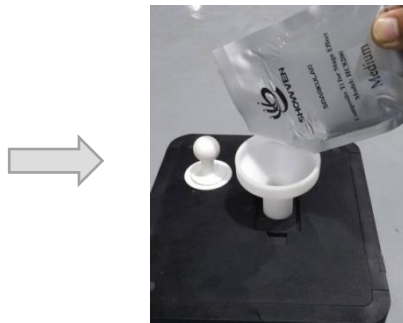b) **To fill in the Sparkular Granules with tooling.**

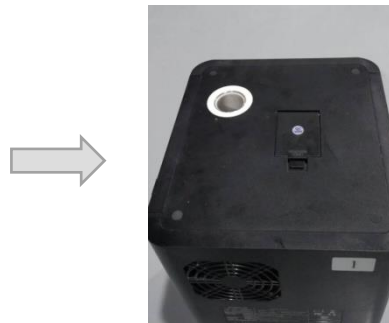Open cover   Tooling

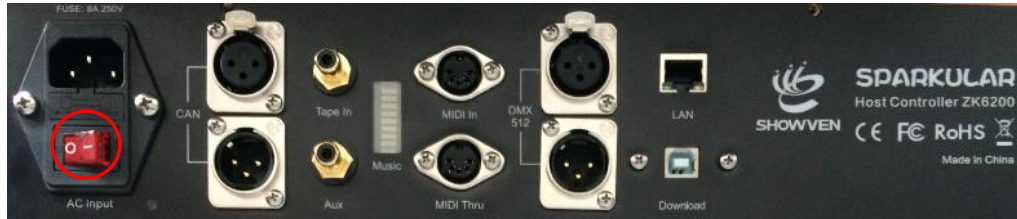Fill in Granule material   Close cover

Warning: Please follow this process to fill the Sparkular Granules. After adding the Granular materials, please close the cover. Note that the material fills the port up full a need to shake to fit may be necessary!

Tel：+86-731-83833068,   Fax：+86-731-83833069,   Web: www.showven.com,   Email:info@showven.com

Address: Building B1, Changsha E-Center, Liuyang Economic Development Zone, Hunan, China.   ZIP Code：410329

Page **15** of **18**

2) **Power On the Controller**

   Open the switch of Controller.

3) **Power On Sparkular**

   Open the switch of Sparkular,

4) **Setting Parameters**

   Please refer to "Host controller" part to set all of fountain effects.
   Sparkular Edit200 soft is designed for ZK6200 and can program lots of special effect.

5) **Activate Sparkular machine**

   An RFID Card is needed to activate the Sparkular by scanning the defined area closely. Once activation successful, the remaining use time of the machine will be displayed on the screen (approximately 20 minutes). When the remaining use time is less than 10 minutes E4 will be displayed.

Tel：+86-731-83833068,   Fax：+86-731-83833069,   Web: www.showven.com,   Email:info@showven.com

Address: Building B1, Changsha E-Center, Liuyang Economic Development Zone, Hunan, China.   ZIP Code：410329

Page **16** of **18**

6) **Start system**

After setting of parameters, please click host controller's "Firing" button to start Sparkular. Select a file to fire and initiate by pressing the Firing button. Files can be selected manually or they can be selected in any of the firing Modes. 8 Files per Mode are available.

7) **Stop system**

After show, please power off Sparkular and controller. Allow to cool before storage in road case. No damage will be done to the unit but use cation as some surfaces will be hot to the touch. **Never** put your fingers or anything into the Fountain Port Nozzle**.   HOT SURFACE!**

8) **Clear Granular material**

The Clear material function should be used after each time the units are used and show is finished. To prepare for proper storage after powering off Sparkular and controller, please pour consumptive materials from material fill port with tooling. If using frequently this does not need to be done each time.

| Tooling | To empty Granular material |

Warning: Please follow this process to clear materials when necessary.

Please store the remaining extra Granular materials in a bottle or bag that is dry and sealed.
The Sparkular Granules should not be stored open in a moist environment for long periods of time. If necessary, dispose of the granular materials by burning.

Tel：+86-731-83833068,   Fax：+86-731-83833069,   Web: www.showven.com,   Email:info@showven.com

Address: Building B1, Changsha E-Center, Liuyang Economic Development Zone, Hunan, China.   ZIP Code：410329

Page **17** of **18**

End Note: Repeat Period/Delay – Explained

The Controller is set by default in the Repeat Delay mode. This allows the files to be created with a time delay between the last fired cue and the next repeat count that is set in the file. This creates a continual loop of effects.

The Controller can be reset in the F3 file to the Repeat Period mode. When the Repeat Period mode is selected and the repeat period starts when the first cue is fired. The Repeat Period value needs to be higher than the Firing Duration (for the Synchronize mode) or the total time of the duration plus trigger delay can be used to create a wave style effect.

FILE NO.	FIRING HEIGHT	FIRING DURIN	TRIG DELAY	REPEAT PERIOD	REPEAT COUNTS
1	3	0.6s	0.2s	3.0s	5

Please note that the Sparkular units are not made to run continuously or for long periods of time. It has a maximum of 60-90 second intervals. Its standard usage is for programmed sequences for up to 90 seconds. The units will over heat and slow down or stop producing sparks. They will need to cool down prior to continuing their use. Continuous overheating will void all warranties. If clean is needed, please use a bottle brush to keep the fountain pipe free of debris.

Tel：+86-731-83833068,   Fax：+86-731-83833069,   Web: www.showven.com,   Email:info@showven.com

Address: Building B1, Changsha E-Center, Liuyang Economic Development Zone, Hunan, China.   ZIP Code：410329

Page **18** of **18**