Digital Sputnik

DS6 User Manual

June 2019

Safety instructions

1. Please read through these instructions carefully before operating the DS LED Lighting System, and keep these instructions for future reference.
2. There are numerous safety instructions and warnings that must be followed for your own safety.
3. DS LED Lighting Systems are not intended for residential use. They are intended for use in a professional studio or film set.
4. Maintenance must be carried out exclusively by an authorized technician.
5. The Systems are not for use in hazardous locations.
6. Maximum ambient temperature for use is 45°C.
    6.1   Do not cover cooling slots and/or radiator fins.
    6.2   Keep a clear area of 25 cm (10") from the lit face of the module.
7. The beam intensity is high. Never look directly into the light source.
8. Do not lift or suspend Light module or Power Supply Unit (PSU) by the cables.
9. Do not use any module or cable that has visible damage.
10. Connect the DS PSU unit only to a well grounded power source.
11. Avoid contact with the LED elements, pressure on the lens may damage the LED element.
12. Connecting any equipment from other manufacturers to the DS LED Lighting System can damage both the DS system and said equipment. Any such use will void warranty. Use the DS light modules only with a DS PSU.
13. The System is rated for indoor use only.

Intended use

This product has been designed as a professional illumination tool for dry environments. Please always follow the safety instructions.

Any usage other than described in this manual is not advised and can damage the product and lead to risks such as fire, electric shock, etc. You are not allowed to modify the product.

1. HARDWARE

Parts list

DS6 System

1 Pcs -   DS6 Frame
6 Pcs –   DS RGBW LED Light Module
1 Pcs –   Power Supply Unit (PSU)
1 Pcs –   Communication Handle (Wired DMX/RDM or Wireless Art-Net)
1 Pcs –   DS6 10m/33ft Cable
1 Pcs –   AC Cable IECLock 2m/6ft UE/US
1 Pcs –   DS6 Flightcase
2 Pcs -   3x1 Diffuser lens 34/76 with bag.
1 Pcs -   Durethan Clip (Set of 18) with Clip bag
1 Pcs-   hex key No. 5

DS6 SYSTEM SPECIFICATIONS:

Light source: RGBW LED

Beam angle: 20 degrees without diffusion

Maximum LED modules per PSU: 6

Remote control options: Wired (RDM/DMX), Wireless (Art-Net)*

Operating temperature range: 0°F ~ 115°F/-20°C ~ 45°C

Input power: 90-260 VAC (Worldwide) 50/60 Hz

Cables from PSU to LED module: 32.8' / 10 m

Maximum power draw per DS6 PSU: 600 watts

Dimensions of a single light module: 34" x 22"/87 x 55 cm, 33.5lb/15.2kg

Dimensions of the flightcase (shipping): 45" x 24" x 10"/110 x 60 x 27 cm 99lb/45kg

Dependant of the communication handle used.

Hardware and Firmware Versions

This user manual covers features up to v2.67.5 firmware. Some functionality may not be available with earlier firmware versions

Firmware updates are released on a semi-regular basis. We recommend updating to the latest available firmware version so all product features are available.

Each release has substantially different DMX modes. It is strongly recommended to use the same firmware version within at least a single DMX universe. As of versions v2.xx.x, gen-1 Wifi modules are not supported.

Overview
- 1.16.7. Last version to support the gen-1 WiFi module
- 2.03.3. DMX changes. Art-Net WiFi gen-2 support.
- 2.67.5. DMX changes.

Conventions to make the following manual simple to follow.

- **LIGHT MODULE** - An interchangeable DS RGBW LED light that is the base illumination tool of all DS line products
- **FRAME** - Frame where light modules are installed.
- **PSU** - The power supply unit that connects to the frame. It has a control panel through which light modules can be controlled.
- **COMMUNICATION HANDLE** - The interchangeable handle on top of the PSU that enables remote control. Handle types are DMX/RDM, for wired control and ArtNet, for wireless control.
- **FIXTURE** - A general term referring to a light source. In this manual it references the whole of DS6.

What's included:

Light module - has 16 RGBW LEDs under its collimator lens. Each light module has been factory calibrated with a specific profile saved into it. Constant color coordinates are kept through the dimming range using high-precision, multi-dimensional LUTs (lookup tables). The Light module stores DMX Addressing info.

Frame - The DS6 is a frame fitted with 6 independent RGBW light modules. Cabling and dimmers are built into the frame to forestall a tangle of wiring and connections. All modules are ready for individual control.

- Mount 1 1/8" / 28mm Junior pin

The frame can be inclined frontwards and backwards. The two vertical beams of light modules can be individually rotated.

PSU - Can also be referred to as Ballast. The brain of the operations, gives power and controls the light modules. The PSU will accept AC Voltage range of 98v-260v and will only draw 600 watts at 6 amps Max for DS6 unit.

Frame Cable - 32.8 ft or 10 m-long female to female connector. Allows you to place your DS 6 frame away from its power supply. This cable will only fit in certain direction to its male counterpart.

Diffuser Lens - A two-sided holographic lens that determines the beam spread (either 34 or 76°) and softens the light.

Power Cable - Standard 6ft/2m US/EU IEC Locking power Cable.

Diffusion Clip - Clip designed to hold the Holographic diffusion lens onto the light module.

Wired DS DMX/RDM Handle - The DS Wired DMX/RDM Handle allows wired remote control. Has 1x5pin XLR input and 1x5pin XLR output.

DS Wireless ArtNet Handle - The DS Wireless ArtNet Handle creates a Wi-Fi network for wireless communication. *

*The DS Wireless ArtNet Handle creates a Wi-Fi network for wireless communication. *

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## PSU interface

Screen

Gateway to your DS6 system. All color parameters, settings and system information is presented on here.

Controls

A keypad, and twist knob. Keypad has up,down,left,right, and center "OK" buttons. The twist Knob rotates both clockwise and counterclockwise and also acts as a button when pushed down.

AC

The back of the PSU houses the AC IEC Socket rated for 120V - 240V AC power with power switch. Plugging in a "HOT" AC IEC power cable into the PSU while the power switch is in the ON position is safe.

Contact pins

Screen
Controls
Status indicator
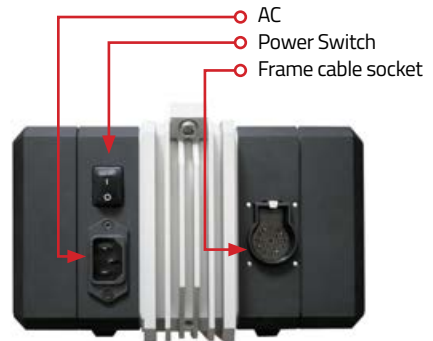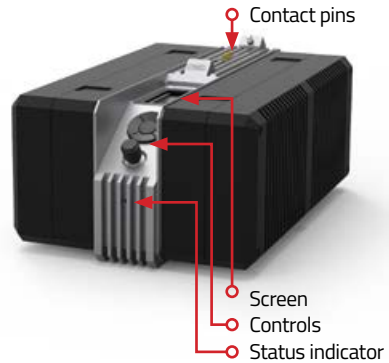
> **!** **ELECTRIC SHOCK HAZARD**
> **Use only approved power cables. Connect only to an outlet with protective earth.**

Frame Cable socket

Turn off the PSU before connecting or removing the frame cable. Frame Cable can be run both ways but can only be inserted in a certain position. A metal fastening indicates the orientation to be inserted. In this process it is important to **NOT TWIST THE HEAD OF THE CABLE**, the cable head should be pushed straight in when aligned with its fastening. When pulling out remember to apply pressure on the safety fastening clip as well.

AC
Power Switch
Frame cable socket

> **!** · **DO NOT HANG THE FRAME OR PSU BY THE CABLE**
> · **DO NOT STRAIN THE CABLE**

Contact pins

A five pin connector on top of the PSU for interacting with communication handles.

Status indicator

The status indicator diode on the front provides the following feedback signals about the state of the PSU:

- **OFF** - There is no power being fed to the PSU.
- **GREEN** - In the case of being stacked- PSU is on the top and controlling other PSU in the stack.
- **AMBER** - PSU is controlled by another PSU.
- **RED** blinking - There is an error. Information will be displayed in the master PSU.
- **GREEN** or **AMBER** blinking - communication activity via DMX 512 or WiFi Art-Net.

Installing diffusion

1. Start with installing the clips to the fixture. Install the clips on the sides of the both light module columns leaving the middle and top ones empty for the diffusion to run trough.
    Designated slots are marked here. When installing a Clip, hook the lip on the middle of the ridge of the light or wall panel and press down on the arch of the clip extending it to click onto the designated slot in the light or wall panel.
2. When clips have been installed it's time to slide the diffusion in.
    Make sure that the diffusion runs through the grooves of the clips.
3. Finally install the top clip for both vcolumns to affirm the diffusion into place.

To take off a clip pinch the top and bottom tab to remove.

1

2

3

Connecting communication handles

- **Connecting and detaching procedures are the same for both wired DMX/RDM and wireless ArtNet communication handles.**
- **Turn off the PSU before connecting or removing the communication handles.**
- **Communication handle does not hold any DMX Addressing info.**
- **PSU can operate without communication handle being present.**

Communication handle is accessible for both DS3 and DS6 and can be instantly swapped if needed across both platforms.

On the back of the **PSU** is a bolt keeping the **communication handle** attached to the **PSU.** To dismount, unscrew using hex key No. 5.

For the correct orientation the XLR sockets or the Antena of the handle should be facing the back of the PSU.

When mounting handles, make sure you don't over-tighten the bolt. Also, keep contact pins on both ends clean to ensure good connectivity.

Stacking multiple PSUs

DMX/RDM

ArtNet

A bolt keeping the **communication handle** attached to the PSU.

DS6 PSUs can be formed into a stack (maximum of 2 DS6 PSUs) in order to accommodate larger lighting configurations.
A stack of PSUs is always controlled by the **PSU** on top.

The same process when mounting any Communication Handle also applies to stacking. Remove the **communication handle** from the bottom PSU. Place the top PSU on the PSU with the removed handle and tighten the bolt using hex key No.5

A LED light indicator will show what status the PSU is in. Green LED is for master PSU and Orange LED is for Slave PSU

The top **PSU** will control all parameters and save settings for the whole stack.

When unstacked, the slave PSU will run on the settings saved prior to being stacked.

Junior pin installation

DS6 has two sockets to install the junior pin to. From the factory it comes with junior pin installed to the bottom socket of the frame. Follow these steps when wanting to install junior pin to the offset front mount.

1. Use HEX key no.3 to loosen the pin and remove it from the socket.
2. Install the junior pin into the front mount with the grooved tip forward.
3. Fasten the locking nut.

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2.CONTROL

Color page

From all menu pages "COLOR" menu will always be accessible from the bottom of the screen for quick manual control of the light modules.

Use the up & down arrow keys to navigate to "COLOR" menu and press OK when the page name is highlighted.

Whenever the PSU is controlled remotely through DMX or Art-Net, and regardless of the DMX mode used, the color mix is always expressed in ITSH values (Intensity, Temperature, Saturation, Hue) on the screen of the PSUs COLOR menu.
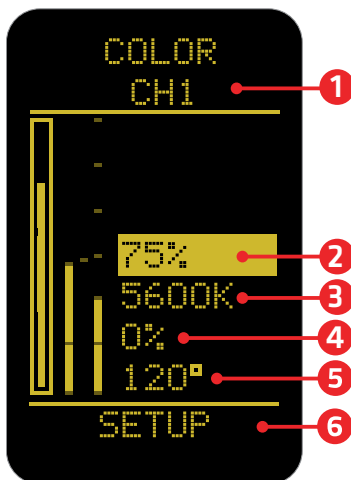
Color control

Turn the rotary knob slowly for precise control. The incremental raise of the value in influenced by the speed of which the button is turned.

Pressing down on the OK button or the Rotary Knob for 1 second while highlighting any ITSH parameter will cause it to enter preset mode.

Use the left and right arrow keys or the rotary knob to navigate between presets.

1. Channel selector - allows the user to select specific light modules in the case of disparate DMX addresses. All light modules can be controlled simultaneously when cycling the selection to "ALL".* When all of the modules are assigned to the same DMX channel the only selection remaining is "ALL". By default it the lowest channel number present.*

For more information on DMX addressing please refer to "DS DMX page"

2. Intensity (INT)- expressed in percentages from 0 to 100, it serves as a dimmer.

On the intensity parameter, user tuned value is always saved as the starting point for the presets. The presets alternate between 0%, "user value" and 100%. When no user preset is defined it will just alter between 0% and 100%.

COLOR
CH1 — ①

75% — ②
5600K — ③
0% — ④
120° — ⑤
SETUP — ⑥

Furthermore, holding down the OK button or Rotary Knob for two seconds on the intensity parameter lets you increase or decrease the intensity by quarter, half or a full light stops.*

The whole dimming range is flicker free on all DS systems products.

For ease of access it is also possible to change the intensity using the rotary knob when the "COLOR" or "SETUP" page of the color menu is highlighted.

Intensity is the only parameter with two sets of presets.

3. Temperature (TEMP) – also known as white balance, is expressed in KELVIN units (K). It refers to the color temperature of the light. The lowest setting will give the warmest light, which is 1500 Kelvin. The maximum setting is 10,000 Kelvin, which will give the coldest light.

Temperature presets, are as follows: 1500, 3200, 5600 and 10000 K. Using the twist knob will allow increment changes of 100K.

4. Saturation (SAT) - is the amount of color mixed into the white light. It is also expressed in percentages, but it can go from -120 to 120%.

The SAT parameter has the possibility of reaching 120% both in the negative and positive sides. It means an absolute maximum of saturation, but be advised the area over 100% is outside of the sRGB color space.
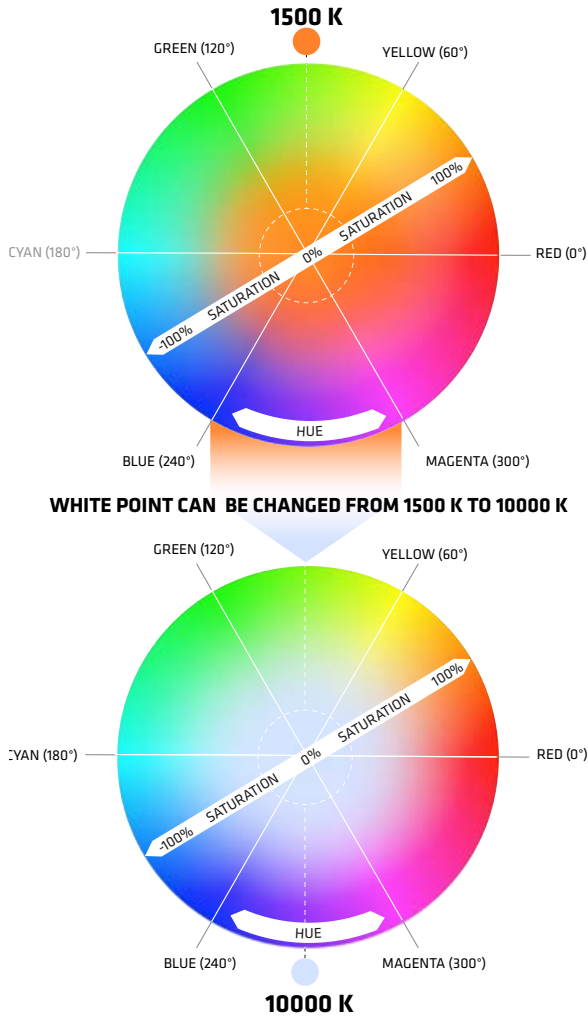
When the saturation is at 120% positive or negative the HUE color is dominant and changing the temp of the white color (TEMP) will show no effect on the light.

Saturation presets are: -120%, -100%, -50%, 0%, 50%, 100%, 120%.

5. Hue - Is the tint of color you are mixing into the light. It is expressed in degrees that refer to the color wheel. The Degree defines the direction of color on the color wheel, and SAT defines how much of that color is being used/mixed with the "white color" (TEMP), white being in the middle of the color wheel. The default is 120 degrees, which means Green on the top end (when saturation is 100% or higher) and Magenta at the bottom (when saturation is -100% or lower).*

For more on the subject please refer to the next illustration.

Colorwheel

1500 K

GREEN (120°)   YELLOW (60°)

CYAN (180°)   RED (0°)

100%

SATURATION

0%

-100%   SATURATION

HUE

BLUE (240°)   MAGENTA (300°)

WHITE POINT CAN BE CHANGED FROM 1500 K TO 10000 K

GREEN (120°)   YELLOW (60°)

CYAN (180°)   RED (0°)

100%

SATURATION

0%

-100%   SATURATION

HUE

BLUE (240°)   MAGENTA (300°)

10000 K

Please note that ITSH settings will be recorded after 6 seconds after manual input and after five minutes when consistent DMX values are sent by an external controller. These will be the starting ITSH settings after PSU reboot.

When DMX communication is active and DMX packet values are changing constantly (light animation) the ITSH values are not saved.

It is possible to control the PSU manually form control panel of the PSU while wired DMX or ArtNet is active but please remember, the control will be transferred back to the active remote device after 30 seconds, which means ITSH parameters will change to those of the remote controller.

- Make sure to switch **off** the **remote mode** under "REMOTE" in the Setup menu if you intend to control your lights from the power supply.

6. Fan Mode - You can set the fan mode to adapt the cooling and noise level to the environment. The fan mode can be manually set from the "Color" menu of the device.

For that, navigate to the "Setup" menu selection at the bottom. When it is highlighted, press either the left or right keys. Then, use the knob to scroll through the listed values.*

The table below shows the available options:

- FLEX: Minimum of approx 1,300 rpm when below 45 °C. Increases linearly to approx 2,900 rpm at 58 °C
- FAST: Always at max (approx 2,900 rpm)
- SLOW: Always at min (approx 1,300 rpm)
- OFF: Fan off until 77 °C, then turns on at minimum speed of approx 1,300 rpm, and turns back off when the temperature drops below 60 °C
- FLX2: Fan off until 45 °C, turns on and linearly increases to a maximum of approx 2,900 rpm at 58 °C **

It is possible to remotely control the fan speed using DMX or wireless Art-Net. Check the "DMX manual for DS systems" for more information.

**Note: Critical temperature for a lamp module is 80 °C, upon which it is shut off. Covering the lamp unit even partially is not recommended, as it will increase the chances of it reaching this critical temperature. Consult with Digital Sputnik technical support if you have questions about a custom application in extreme conditions.

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Setup Page

Allows the user to alter specific function-ality and check working information about the PSU and light modules.

To navigate between the **DS DMX**, **SETUP** and **WiFi** pages, use the left and right ar-row keys when the page name is highlight-ed.

1. Remote - indicates the remote control mode: It is automatically set to **DMX** or **ArtNet** depending on the communication handle installed on the PSU.
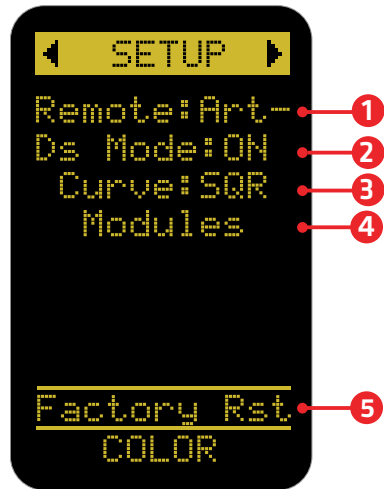Select **OFF** to stop control by an outside device if you intend to control your lights from the power supply.
When no handle is present you can cycle through all of the choices but we recom-mend leaving the selection to **OFF**.

2. DS Mode- When turned on, the PSU will run on **DS Mode**, which is a subset of the full mode of operation, which is the DMX mode used when DS Mode selection is set to OFF.*
DS mode is a more simplistic approach to DMX setup, eliminating the need to orien-tate between DMX modes, universe selec-tion and also making channel numbering less cumbersome.

- DS mode is primarily meant to use with **DS DMX** app for iOS. If using any other control devices or controller boards switch **DS mode** to **OFF**.

*Please refer to "DS DMX" section for more.

```
┌─────────────────────┐
│  ◄   SETUP    ►     │
│                     │
│  Remote:Art─    ──①  │
│  Ds Mode:ON     ──②  │
│     Curve:SQR   ──③  │
│     Modules     ──④  │
│                     │
│                     │
│  Factory Rst    ──⑤  │
│     COLOR           │
└─────────────────────┘
```

Setup page

3. Curve - changes the dimming curve of the value range. It can be set so the value is increased and decreased **linearly(LIN)** or by a **square factor(SQR)**.
Note that when using "LIN" the light output is brighter on the whole dimming interval but **the maximum output of the module is not altered with this setting.**

4. Module data. It is possible to navigate right and left through all connected light modules and get an overview of the data about each module:

- 00763   Last 5 digits of light
           modules serial number
- RGBW   Module type whether
           RGBW or WHITE
- 24°C   Module temperature in
           Celsius
- 75°F   Module temperature in
           Fahrenheit
- 3150rpm   Fan RPM (Rotations
           per minute)
- 237h   Time counter of module
           usage
- DMX 100   DMX addressing channel
           assigned to the module

5. "Factory RST" - factory reset page that will show firmware info and allows a factory reset.*

For more information on this topic refer to "Factory reset" topic of this manual.
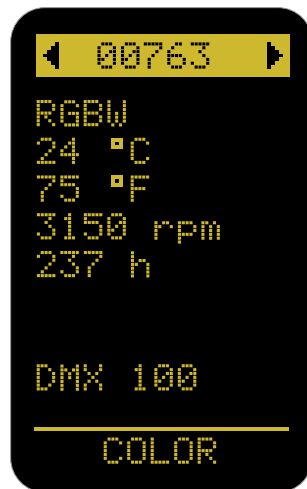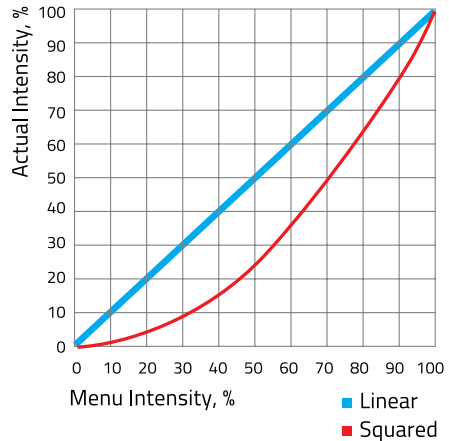
Module data

DS mode ON/DS ADDR

"DS mode" "ON" should only be used when controlling PSU from the "DS DMX" iOS app. When in need to change DMX universe or DMX mode set "DS mode" to "OFF" under "Setup" menu.

DS mode is a more simplistic approach to DMX setup, eliminating the need to orientate between DMX modes, universe selection and also making channel numbering less cumbersome.

When the **DS Mode** is in use, the starting page will be named as **DS ADDR**.
The only variable parameter on the **DS ADDR** page is the channel number of a light module.

DS mode ON example
- **00763:0**
  last 5 digits of light modules serial number followed by a channel address

When using **DS Mode**, DMX personality and universe settings are hidden and not modifiable.
The light modules connected to the PSU will be identifiable by the last 5 digits of their serial number. It is followed by light module's DMX **CHANNEL** number.
A DMX **channel** is the address or identification number assigned to the light module. It gives a controller an address number to send DMX packets to when wanting to control the light module. By default it is 0 when using DS mode.
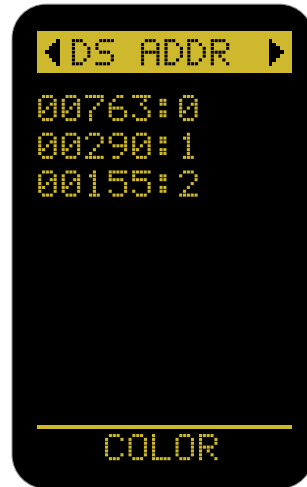
DMX addressing info is stored in the light module. This means that when switching modules between PSUs the light module will hold it's address information.

Channels are modifiable. When using the DS mode, the **channel** numbers will go from 0 to 50.

Up to 50 DS light modules can be independently controlled using DS mode as the DS mode only listens to communication from one universe (Universe is 0, Net 0, Subnet 0).

Therefore it is not recommended to use DS Mode in a configuration with more than 50 light modules.

If "DS MODE" is "ON", the selected PSU (and the PSU underneath, if stacked) will assume the standard DMX subset of the "DS16" personality. (Universe is 0, Net 0, Subnet 0) If PSUs are stacked all light modules connected to the slaved PSUs will show up on the DS DMX menu of the master PSU for addressing purposes.

DS mode OFF/ DMX ADDR

When **"DS Mode"** is set to **"OFF"** the basic **DMX Mode** is in use. The starting page will be named **DMX ADDR**.

This mode enables control in a DMX addressing system for operating complex lighting configurations through a DMX controller or the DS DMX app when wanting to control 3rd party lighting equipment in conjunction with DS gear.

The **DMX ADDR** page on the display of the PSU will have three variables.

DS mode OFF/ DMX mode example

- DS16 - DMX personality. Default is DS16

- Universe 0 - Defines the DMX universe fo the PSU. Default is 0

- 00892: 1 - Lamp modules last five serial number digits followed by assigned address. In DMX mode the Default is 1

Personality: There are various personalities to choose from on your PSU. It is upon this setting that the amount of channels -or sliders on a DMX board- used to control the light module is determined. The default personality is DS16, which allocates 10 channels for each light module, thus, if the first module is assigned to channel 1, it will effectively occupy channels from 1 to 10 for the control of its parameters. In such a case, the second light module will start on channel 11, the third on channel 21, if going in succession. The number of channels -or sliders on a DMX board- used by a light module is called **footprint.**

Please take a look at the Personality chart below.

Use the 16 bit modes in combination with controllers supporting 16 bit resolution to obtain best results. The high resolution provides smooth dimming and precise color adjustments. The coarse / fine modes utilize two channels for most parameters and provide higher resolution compared to the 8 bit modes.

Various DMX personalities

Mode	Description	Number of channels
DS16	Standard DS modes.	10
DS8	DS MODE=ON uses DS16 by default.	5
ITSH16	Similar to DS8/16, with positive	10
ITSH8	saturation.	5
XFADE16	Crossfade modes	16
XFADE8		9
RGB8 (no fan control)	Basic RGB + Temperature modes	4
iRGB8		6
ARRI6	ARRI RGBW crossfade modes	17 + 3 unused = 20
ARRI1		9 + 3 unused = 12

Note: For more information about DMX personalities visit www.digitalsputnik.com.

Universe: Each DMX universe holds 512 channels or addresses.

When using wired DMX 512 the Universe number in the DS ADDR menu is read-only and corresponds to the last byte of the full DMX universe (512). This value must be bound to the universe number in the transmitter (for example, using a macro or a script). This can be used to visually identify the correct DMX daisy-chain.

When using wireless Art-Net the universe can be changed from the PSU with a turn of the knob. When the knob is pushed down on the universe variable, the Net, Subnet and Universe variables can all be modified.

Channel: This selector is for changing the DMX address of a light module. The basic principles are the same as with the DS mode turned on, although with a few exceptions:

- When the DS mode is turned off, the default channel for a module will be 1 instead of 0, and **channels** go from 1 to 512.
- Using the twist knob will result in the movement of numbers in intervals de-pendant on the amount of channels your selected DMX profile uses.
- Using the left or right arrows when high-lighted will change the DMX address by single digit. This is good if there is a need to dial in an exact DMX channel.

A quick and easy way to address multiple light modules at once is to highlight any light modules DMX address and press the "OK" button on the control pad. This will display the "ASSIGN ADDRESSES" function where the user can assign DMX address to "SAME" to make all light modules DMX addresses the same to the DMX address highlighted. This is good for simultaneous control.

The other option is "INC" to incrementally change all light head addresses with the proper interval dependant on the DMX profile in use. When wanting independent control of each light module.*

*This feature is present whether "**DS mode**" is turned "**ON**" or "**OFF**".*

DMX channels 511 and 512 are used for the purposes of Port-Address (Universe) identification, and are ignored if used for the purposes of channel control. The last available DMX channel for addressing is 510.

"Loading DMX" message is continuously displayed on the DS DMX screen when one or more modules are not connected to the frame or there is a connection problem. In this case they are also not present on the DMX listing on the DS DMX page.

◀DMX CHAN▶
◀   DS16   ▶
Universe:
0
02220: 1
02182: 1
00618: 1

ASSIGN
ADDRESSES
SAME   INC

◀DMX CHAN▶
◀   DS16   ▶
Universe:
0
02220: 1
02182: 11
00618: 21

ASSIGN
ADDRESSES
SAME   INC

WiFi page

Network information can be found on the WiFi page of the menu.

To navigate between the **DS DMX** page, **SETUP** and **WiFi** pages, use the left and right arrow keys when the page name is highlighted.

This page is only visible when the ArtNet communication handle is installed and the "REMOTE" mode on the setup page is set to "WiFi".

Depending on whether the PSU is set to Server or Client mode, the information presented on the WiFi page will differ:

Server mode:

The WLAN Server mode is the default mode. The created wifi network name is by default the Serial Number of the WiFi (ArtNet) handle. This WiFi network is capable of supporting up to 4 other DS PSUs as clients, plus a controller. Larger networks require a dedicated router.

Server mode example

- WLAN Server
  WIFI module is in the "Server" (Access Point) mode
- DS016240019
  WIFI network name (SSID),
  either assigned by the user, or the default S/N as printed on the side of the handle
- 1.2.3.4
  IP address of this WIFI module

Client mode:

Through the DS DMX app for iOS, it is possible to connect the DS WiFi handle to another DS WiFi handle, or to an existing WiFi network (a wireless router).

If possible connect the DS6 to a DHCP enabled router. This ensures that the IP address, gateway, DNS1 and DNS2 are automatically assigned to the fixture by the network but If needed the IP address of the handle can be altered using DS DMX app.

DS WiFi Art-Net handle is DHCP enabled.

Client mode example
- WLAN Client
  WIFI module is in the "Client" mode. It is connected to another device or a router.
- Router_X
  Name (SSID) of the target network
- DS0162400190172
  Hostname of this WIFI module
- 192.168.1.101.
  IP address of this WIFI module

Refreshing the WiFi page:
When the **"WiFi"** page selection is highlighted and the rotary knob is pushed down, the network information on this page will be refreshed.

"AWAITING WIFI"
This text is displayed when the WiFi module has not yet finished acquiring its settings. It is also displayed whenever **"Remote"** is set to **"WiFi"**, but no WiFi handle is present. If

"AWAITING WiFi" is displayed indefinitely while the WiFi handle is mounted, there may be issues with communication.

"CAN'T JOIN" / "WRONG PASS"
This is displayed on the bottom of the WiFi page when the module is unable to connect to the assigned Access Point either due to a name mismatch, the Access Point being unavailable, or a wrong password. The DS WiFi module will try to periodically reconnect to the appointed Access Point using its last known settings. If the issue cannot be rectified, **"Reset WiFi"** must be performed.

Reset WIFI

This setting is used to reset the WiFi mod-
ule to the default Server (Access Point)
setting with the Serial Number of the WiFi
module as its network name (SSID).
**The Serial Number can be checked on the
side of the WiFi handle.**

Press OK a total of 3 times to activate this
function. The WiFi reset takes about 15
seconds to perform.

Defaultly there is no password needed to
connect to the WiFi network.

It is not possible to manually change the IP
address from the control panel of the DS6.

As of this Firmware v2.67.5 RDM manage-
ment over Art-Net is not supported. RDM
over DMX allows configuration, status
monitoring, and management of the light
from the external controller in a way that
does not disturb normal DMX operation.

Troubleshooting Art-Net, sACN

Firewalls and certain routers can cause
issues with sACN multicast (packets are
sent to every IP address of the router range.)
Some routers are also known to buffer Art-
Net broadcast packets more heavily than
unicast packets, leading to slower than
expected framerates. During troubleshoo-
ting, it is recommended to try unicast (packets

are sent to one determined IP address) with
the firewalls (temporarily) turned off first to
establish a baseline.

When transmitting data via Art-Net or
sACN protocols to DMX, make sure that
the transmitter is configured to the correct
universe. Note that sACN universe
numbers often start from 1, and Art-Net
universe numbers may start from 0.

In DS firmware release versions up to and
including v2.67.5, Short DMX packets are
not supported, and only full 1+512 DMX
packets must be sent.

Firmware 2.67.5 Wifi communication
handle supports color management over
most common unicast/broadcast Artnet
protocols up to 4.0

Factory reset

A factory reset can be performed in order to change PSU settings to their default values. This option is located on the bottom of the SETUP page.

The following parameters will be changed:
- Intensity = 0%, Temperature = 5600K, Saturation = 0%; Hue = 120 degrees.
- DMX personality is set to DS 16.
- All cached Lamp Unit Calibration Tables (LUTs) will be cleared. The next boot-up will be slower due to the need to reload all calibration tables for all connected Light modules.
- The dimming curve will be set to SQR (Squared).

This reset will **not** change:
- The DS MODE setting
- WiFi settings (these are stored in the WiFi module)
- DMX addresses of light modules (these are not stored in the PSU)

Upon reboot, Remote=DMX on DS6 will be automatically changed to WiFi in case a working WiFi module is positively identified.

Similarly, Remote=WiFi on DS6 will be automatically changed to Remote=DMX if a working DMX/RDM module is positively identified.

In DS1, there are no user-swappable modules, and the Remote=DMX and Remote=WiFi settings can only be manually changed.

To check if your PSU needs a software update Bootloader (BL) software version and Main Program (MP) software version can both be revised from this page as well.

Upgrade

All Digital Sputnik PSUs are upgrade-able by the user. A Windows or macOS Upgrade Utility can be downloaded from the Digital Sputnik webpage. The update can be performed via the DS WiFi module, or through a wired connection (DMX to USB cable with FTDi chip).

Bootloader Mode

The PSU must be in bootloader mode when being upgraded. To enter bootloader mode, press the left arrow key while you switch on the PSU.

In some bootloader versions option there is a choice between **All to BL or All to MP. These options must never be used!**

If there have been firmware updating issues (for example, due to a bad WiFi signal), the Windows/macOS DS Upgrade Utility must be allowed to run again.

```
BOOTLOADER
FIRMWARE
UPGRADE
v1.11.5
DEVICE ID:
1008005
BOOT: MP

ALL TO BL
ALL TO MP
<NONE>
```
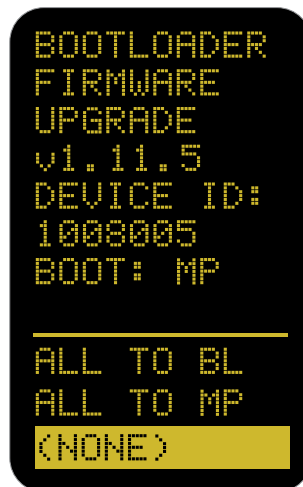
Warning codes (flashing codes)

Code	Description
ArtDMX	ArtDmx stream is incoming from the WiFI module. Works under Remote=WiFi only.
DMX	DMX stream is incoming from the XLR-5 pin on the DMX/RDM handle. Works under Remote=DMX only.
"DEVICE ID ERROR"	Unable to communicate with DS6 frame or another device in a stack. The device attempts to perform a new identification sequence.
"LOADING WIFI" or "AWAITING WIFI"	WiFi settings are being acquired from the WiFi module. If there are problems with communications this message may stay active in the WiFi menu indefinitely.
"RESETTING WIFI"	WiFi is being manually reset.
EL1	LED power delivery issues.
FW1	Firmware version mismatch in a stack.
OW##	Lamp Unit Communication. Various errors related to the calibration LUT acquisition failure.
Handle FW!	DMX/RDM handle is in Bootloader mode, potentially due to unfinished flashing sequence in the DS Upgrade Utility.

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Error codes

Critical/blocking codes; the device attempts to clear these every 30 seconds.
A manual attempt to clear the error can also be made on the DS6 from a single device or
Master (topmost) device in a stack, by pressing OK when the code is on screen. But when
the problem persists the code reappears immediately.

Code	On screen message	Description
0	ERROR	Generic error
1	FAN SLOW	Fan fault, fan too slow
2	LAMP HOT	Lamp too hot (>= 80 C)
3	PSU HOT	Dimmer board too hot (IRQ, over 80...85 C)
4	WRONGLAMP	Unsupported lamp type, likely a new release
5	CABLE ERR	Cable error
6	ACDC ERR	AC/DC error
7	1-WIRE ERR	1-Wire error (unable to communicate with lamp unit)