![DiGidot logo] PUSHING CONTROL BOUNDARIES

# DiGidot
# Art-Net & sACN
# compatibility guide
# v1.1

*16-2-2022*

# TABLE OF CONTENTS

# INTRODUCTION

This document is intended to highlight a few differences between Art-Net and sACN as well as to clarify which features of these protocols are supported by the DiGidot controllers (C4 or a PxLNet Node).

# TECHNICAL COMPARINSON

This is a basic overview of the major differences between Art-Net and sACN.

| Features | Art-Net | sACN |
|---|---|---|
| Maximum universes | 32767 | 65535 |
| Starting universe | 0 | 1 |
| Default network mode | Unicast | Multicast |
| Alternative network mode | Broadcast | Unicast |
| Network load | 10/10 | 9/10 |

# CHOOSING ART-NET OR SACN

Art-Net and sACN both have the same goal: provide the possibility to send DMX512 data via the ethernet protocol. But there are some important differences which may affect your decision on which protocol is best for your purpose.

# REASONS TO CHOOSE ART-NET

## 1. Exists longer and more commonly used

The Art-Net protocol exists longer (created in 1998) than the sACN protocol (created in 2009). Many lighting applications support Art-Net because it has been on the market for quite a while now. And between 1998 and 2009, it was the only option to send DMX512 data over ethernet. So not all software have support for sACN (yet).

## 2. Network packet overhead

When sending DMX512 data over ethernet, the data isn't actually 512 bytes in size. Some form of overhead is introduced due to adding headers which contain extra information like the protocol signature, universe number, source names and many more. Art-Net packets are usually 570 bytes in size while sACN packets are around 670 bytes which is roughly 10% more. This is due to the extra information in the sACN packet like the priority, various option flags and the source name. This won't impact the performance a lot but it can be important if you want the maximum number of channels over a single ethernet cable:

| Ethernet connection | Art-net universes | sACN universes |
|---|---|---|
| 10 Mbit | 40 | 35 |
| 100 Mbit (Fast Ethernet) | 400 | 350 |
| 1000 Mbit (Gigabit Ethernet) | 4000 | 3500 |
| 10000 Mbit (10 Gbit) | 32767* | 35000 |

\* = Maximum number Art-Net universe is 32767  due to its standard.

# REASONS TO CHOOSE STREAMING ACN

### 1. More universes

sACN is capable of sending twice as much unique universes than Art-Net (65535 vs 32767).

### 2. Seamless configuration

With Art-Net, it's required that, the devices you're sending Art-net to, have unique IP-addresses. It's also important that you're sending the right universe to the right device. The discover process of Art-Net makes this process easier but if you change the configuration, you will have to rediscover every time.

With sACN, this work is done for you. If you add an universe from your DiGidot Controller, for example universe 1, it will subscribe to that universe and let everybody know on the network. If there're sources on the network that have universe 1, the DiGidot controller will automatically start receiving data from that source. If the source with universe 1 is added on a future moment, it will inform all devices on the network that universe 1 now is available and it will process the data. With sACN, you don't have to deal with searching for devices, configuring IP-addresses and sending specific universes to specific devices. As long as you have configured your universes in the Input/output configuration of your controller, and on the lightning software or console, and they're all on the same network, everything goes automatically.

### 3. Layers

The sACN protocol has a built-in layer support. If you want to send from multiple sources to the same universe, you can define which source has priority and must be on top. You can have up to 200 layers.

### 4. Monitoring

With Art-Net, if you want to monitor the traffic, you only have 2 ways to accomplish that:

‣ Monitor from the Art-Net Source (e.g. a lightning console)

‣ Monitor from the Art-Net Destination (e.g. a DiGidot controller)

With sACN, you can monitor a specific universe from any device in the network. You don't have to do this necessary on the sending or receiving device.

# FEATURES AND LIMITATIONS

Most of the sACN features are supported. In the table below, you can check which features are supported.

| | Supported ? |
|---|---|
| Priority (layers) | Yes |
| Synchronisation with sync universes | Yes |
| Option Flag (Preview Data) | No |
| Option Flag (Stream Terminated) | Yes |
| Option Flag (Force Synchronization) | Yes |
| Supports Unicast | No |

## Limitations

There are some limitations with the implementation of sACN on the DiGidot controllers:

‣ Maximum of 5 different sources for a single device

‣ Maximum of 24 universes in total

# SUPPORT

For further support go www.digidot.eu please contact us on support@digidot.eu.

# COPYRIGHT

# DISCLAIMER

# FEEDBACK

Tell us all about your experience with DiGidot!

The continuous development of the DiGidot control platform is only possible thanks to feedback from our users. If you have any suggestions, please contact us by email: info@digidot.eu.

# IMPRINT