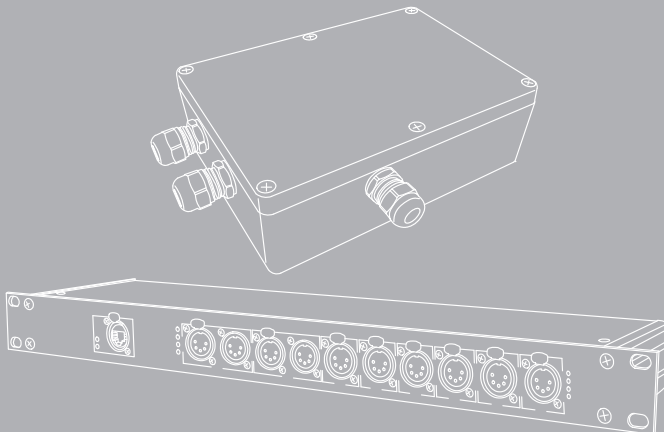


Version 1.11  
January 09, 2018

User manual

# ArtGate DMX-Ethernet converters

AGC-X-DE, AGC-X-2DE, AGC-X-DE-OEM,  
AGS-X-2D2E, AGS-X-4D2E,  
AGA-X-2D2E, AGA-X-4D2E,  
AGP-X-2DE, AGP-X-4DE, AGP-X-8DE,  
AGPD-X-12DE, AGPD-X-16DE,  
AGD-X-4DE, AGD-X-8DE, AGD-X-4D2E, AGD-X-8D2E,  
AJP-X-8DEF



**UNDRAX**  
electronics



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# Visual appearance



Pic.1 ArtGate devices appearance

# Specifications

|                         |   |
|-------------------------|---|
| DMX512 interfaces       | 1,2,4,8 or 16   |
| Supported protocols     | DMX512, RDM (E1.20),<br>ArtNet (I,II,III,4), sACN (E1.31, draft and released), RTRPL, etc |
| DMX data refresh rate   | 44 Hz default, may be changed if necessary  |
| I/O connectors          | Depends on the modification   |
| Max current consumption | 0.1 A   |
| Setup                   | Web-interface   |
| Power supply            | ~90-250 VAC, 50/60 Hz or Power-over-Ethernet  |
| Fuse                    | 0.1 A   |
| Setup                   | Web interface, specialized ArtGate software,<br>standard ArtNet tools                     |

## Safe operation



### WARNING!

The device uses hazardous voltage AC 230 V

In installation, operation, preventive maintenance and repairs of the device, the requirements of the safety rules must be followed.

To ensure safe and reliable operation of the devices, please observe the following requirements:

- Use the device only for its intended purpose;
- Do not use devices that shows signs of malfunctioning;
- Avoid strong physical impacts on the device;
- Protect devices and cables from contact with moisture or other corrosive liquids;
- Prevent any improper disconnection of the Ethernet cable from the device being disconnected.

Whenever a fault is detected in the device, please contact the manufacturer.

## General information

ArtGate is the series of full-featured converters for converting network protocols Art-Net and sACN to light fixtures control protocol DMX512. Through their 1, 2, 4, 8, 12 or 16 DMX ports, LAN interface and Optical port (ArtJet Pro only), the devices transmit and receive DMX512 data streams via Ethernet LAN functioning in 10Base-T or 100Base-T mode (100Base-FX in ArtJet Pro).

Compatibility with Art-Net and sACN protocols enables the use of ArtGate devices in a network of heterogeneous devices from other manufacturers.

As well as the standard broadcast data transfer Art-Net, Art-Gate devices also support point-to-point data transfer in the local network or via the Internet. Address settings of the device (name, SubNet, Universe) and network settings (IP address, subnet mask,

UDP-port), standard software tools for Art-Net networks, such as DMX Workshop, as well as using the Web-based interface.

Web-interface allows changing advanced settings of ArtGate devices not covered by the Art-Net standard, such as:

- port mode (Input / Output / Loop / Off);
- physical characteristics (timing) of DMX512 signal;
- merge modes for each port;
- data stream transmission and reception modes in Art-Net network.

In addition, specialized utility software allows advanced users to assign custom MAC address to the Ethernet interface of the device and restore default settings of the device. ArtGate series is powered by AC ~90-250 V, 50/60 Hz, or from Ethernet using the Power-over-Ethernet technology (depends on modification).

## Merging

Variable merging options: **HTP** (highest takes precedence), **LTP** (latest takes precedence), **AUTO** (last modified takes precedence – intelligent merging mode that provides availability to manage installation from two consoles simultaneously), **OVERLAY** (merges custom slots from two ArtNet/sACN streams, fully customized through web interface), **PRIORITY** (for network streams with priority tag, console with the highest priority for a given Universe will be in charge). Depending on Artgate model, each port can merge up to 2 or 4 network sources. Merged data may be outputted to physical DMX ports, and also may be looped back to Ethernet as new ArtNet/sACN stream.

## Standalone merger

ArtGate devices may be used as standalone (without permanent Ethernet connection) mergers. When 2 or more input ports are configured with the same ArtNet/sACN universe ID, DMX streams from them can be merged and outputted to another output port which must have the same ID too to provide such feature. This configuration may work even if device is not connected to Ethernet.

## Tracking protocols support

ArtGate devices can receive the data from tracking servers via specialised protocols (RTTrPL, etc.) and merge them into output DMX512 streams. For successful merging, universe number in tracking control messages must be the same as ArtNet or sACN universe number which is set on affected ports.

This feature can be used when merge mode on output port is set to **PRIORITY** or **AUTO**. If **PRIORITY** merge mode selected, tracking data have highest precedence over all other sources, while in **AUTO** mode tracking data is treated as a normal merge source.

## Trigger inputs

Some ArtGate models have trigger feature. When trigger is activated, static scene stored in non-volatile memory is recalled and set for all DMX ports. Trigger is activated via "dry contact" inputs, which can be configured for working with normally opened and normally closed sensors (smoke sensors, buttons, etc).

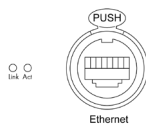
Each trigger input can be also configured as alarm input. When alarm is activated, device returns to normal work only after power cycle or manual reset, not just input deactivation.

By default, static scenes for all triggers are "all channels to 100%". User can set up the custom scene on all used DMX ports and then capture and save the scene for necessary trigger.

# Connection types

## Ethernet connection

Device is connected to the network via RJ-45. All ArtGate devices have two LEDs to indicate the status of the network connection.



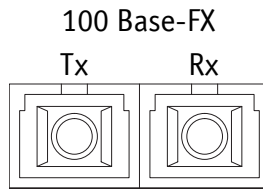
Pic.2 Ethernet connector

If there is no Ethernet connection, both LEDs are off, if network is connected, one LED is constantly on, the other one flashes when

data are transmitted and received over the network. Each device has unique IP and MAC addresses. Device's IP address, subnet mask, and other network parameters can be changed, but even in this case, the device is still available on the original IP address (2.x.x.x) for ping and http requests. Thus, even in case of loss of the new IP address, the device can be access on the network using the original IP address through the web-interface.

### Fiber optics connections

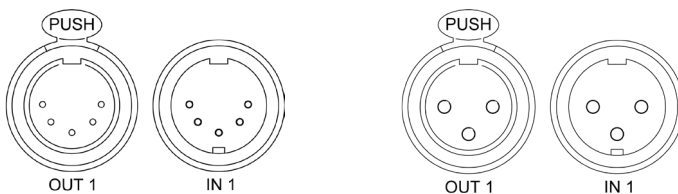
ArtJet devices are equipped with 100 Mbit fiber optics port (duplex SC connectors). Fiber optics port works as another network interface, with functionality similar to Ethernet port. When connected both to fiber optics and ethernet, device acts as a network switch/media converter.



Pic.3 Fiber optics connectors

### DMX connections

XLR 5-pin connectors are used to connect external master and slave devices to DMX ports. If necessary, the device can be equipped with XLR three-pin connectors. Each port on the 2 and 4-port devices has 2 connectors – one M connector and one F connector, which allow the port to pass-through the DMX bus. On 8, 16-port devices and ArtGate Compact, each port has single connector of type F. Using internal DIP switches, it is possible to connect terminators (120 ohms) to DMX bus.



Pic.4 XLR(F) and XLR(M) DMX connectors (5pins/3pins)

# Web-settings

ArtGate devices support configuring most of their parameters through the Web-interface using HTTP protocol (TCP port 80).

## Main settings

To access the settings page enter the IP address of the device to the browser. Main settings page of the ArtGate device will be displayed.

| Port  | Subnet | Universe | I/O mode | Merge mode | ACN unv. | Status          |
|-------|--------|----------|----------|------------|----------|-----------------|
| DMX 1 | 0      | 0        | OUT      | Auto       | 0        | no new DMX data |
| DMX 2 | 1      | 0        | OFF      | Auto       | 0        | -               |
| DMX 3 | 8      | 5        | IN       | Auto       | 1000     | no DMX signal   |
| DMX 4 | 11     | 15       | OUT      | Auto       | 20       | no new DMX data |

Pic.5 Main settings

- Indication – switching LED indication modes:

|        |   |
|--------|---|
| Normal | Indication depending on the current port status |
| Blink  | Search mode                                     |
| Off    | LEDs are off                                    |

- Device name – editable device name (up to 17 characters);
- Device description – editable device description (up to 63 characters);
- Device status – current state of the device;
- Ports – configuration and status of DMX ports:

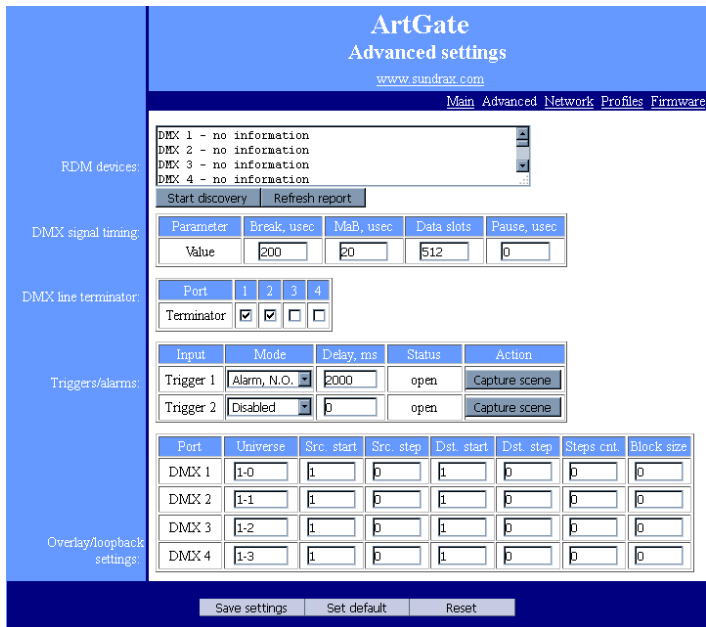


|            |   |
|------------|---|
| Subnet     | Art-Net subnet number (0-15)  |
| Universe   | Art-Net universe number (0-15)  |
| I/O mode   | IN- input, OUT- output, LOOP- loop output with network loopback, OFF- off                     |
| Merge mode | Merging mode (LTP, HTP, Auto, Priority, Overlay)  |
| ACN unv.   | sACN stream number (from 1 to 65279, the value of 0 disables sACN transmission and reception) |
| Status     | Current state of the port   |

- To save the changes in main settings, click "Save settings".
- To restore default values of main settings, click "Set default".
- To reset to the current saved values of main settings, click "Reset".

### Advanced settings

To edit the advanced settings of the device, click on the link "Advanced".



Pic.6 Advanced settings

- RDM devices – RDM devices list, connected to DMX ports:

|                 |  |
|-----------------|--|
| Start discovery | Searching connected devices                |
| Refresh report  | Refresh search/list state detected devices |

- DMX signal timing – sets the parameters of the output DMX signal for all ports:

|            |                    |
|------------|--------------------|
| Break      | from 4 to 1000 ms  |
| MaB        | from 4 to 1000 ms  |
| Data slots | 1 to 512           |
| Pause      | from 0 to 10000 ms |

- DMX line terminator – enables (selected) or disables (cleared) termination resistor between D+ and D- wires of DMX line on each port.

- Triggers/alarms (for ArtGates equipped with trigger inputs)- setup the mode of trigger inputs.

|           |   |
|-----------|---|
| Input     | Trigger/Sensor input  |
| Mode      | Operating mode (disabled, alarm sensor normally open, alarm sensor normally closed) |
| Delay, ms | Delay for triggering in milliseconds  |
| Status    | Current status of input (open, closed, alarm)                                       |
| Action    | Save the current state of all DMX ports as scene to recall on trigger activation    |

- Overlay/loopback settings – settings of overlay merging:

|                        |   |
|------------------------|---|
| Src. universe          | Art-Net or sACN stream number for merging   |
| Src.start,<br>Src.step | Start slot number and sampling step in the merged stream                          |
| Dst.start,<br>Dst.step | Start slot number and sampling step in the output stream                          |
| Steps cnt.             | The number of steps of copying  |
| Block size             | Size (in slots) of blocks for copying from the merged stream to the output stream |

- Port 0 mode (in ArtGate with splitter port) - sets the mode of the additional port.

- To save the changes in advanced settings, click "Save settings".
- To restore default values of advanced settings, click "Set default".
- To reset to the current saved values of advanced settings, click "Reset".

## Network settings

To edit the network settings of the device, click on the link "Network".

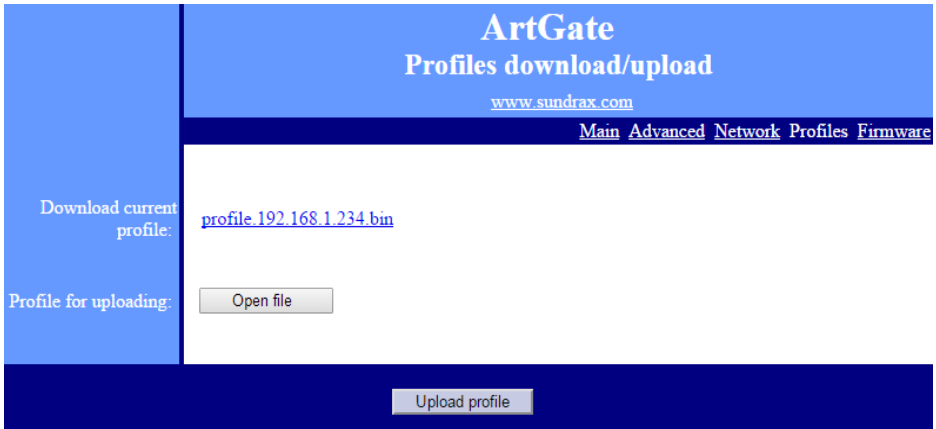
The screenshot shows the 'ArtGate Network settings' web interface. The header is blue with the text 'ArtGate Network settings' and the website 'www.sundrax.com'. Below the header is a navigation menu with links for 'Main', 'Advanced', 'Network', 'Profiles', and 'Firmware'. The main content area is white and contains several network configuration fields. On the left, there is a blue vertical bar. The fields are: 'MAC address: 00:02:8C:A6:15:3B (secondary IP: 2.161.21.59)', 'Main IP: 2.161.21.59', 'Subnetwork mask: 255.0.0.0', 'Gateway IP: 0.0.0.0', 'Art-Net UDP port: 6454', 'ACN UDP port: 5568', 'Access login: admin', and 'Access password:'. At the bottom of the page, there are three buttons: 'Save settings', 'Set default', and 'Reset'.

Pic.7 Network settings

- MAC address – hardware address and secondary (permanent) IP address of the device;
  - Main IP – set the main network address of the device;
  - Subnetwork mask – set the mask of the IP subnet;
  - Gateway IP address – set the network address of the gateway (if ability to operate via the Internet is required);
  - ACN UDP port- set the UDP port for sACN protocol.
  - Art-Net UDP port - set the UDP port for Art-Net protocol.
  - Access login/password- login and password for access to web interface of device. If password is empty, authentication is not performed.
- To save the changes in network settings, click "Save settings".
  - To restore default values of network settings, click "Set default".
  - To reset to the current saved values of network settings, click "Reset".

## Profiles settings

To edit the profiles settings of the device, click on the link "Profiles".



Pic.8 Profiles settings

- Download current profile – download the current settings as a file;
- Profile for uploading – select the file of previously saved profile;
- Upload profile – to upload the selected profile in the device.

## Firmware update

To update firmware of the device, click on the link "Firmware".



Pic.9 Firmware update

- Reboot – device reboot button;
- Current firmware rev. – current firmware version number of the device;
- New firmware file – select firmware file to upload to the device;
- Update firmware – upload the selected firmware file.



Please note! Selecting and installing any other third-party file, may cause device malfunction.

After the firmware upload is complete, confirm the update by clicking “Reboot”.

## Getting started

1. Connect all DMX cables to necessary DMX port connectors.
2. Connect Ethernet cable to the device.
3. In ArtGate PRO devices connect the power cable.
4. Connect the power cable plug to a power outlet.
5. In ArtGate PRO devices 12DE and 16DE, turn the power switch on. After few seconds, port status LEDs will indicate the state and direction of the port. Also, few seconds later Ethernet status LED must turn on.
6. Open device’s web-interface on the computer connected to the same network as the ArtGate device.
7. Open the Network Settings tab.
8. IP field will display the address of the device, Subnet field will display the network mask. If necessary, fill the IP and Subnet fields for the required network settings (by default, devices are on IP subnet 2.x.x.x and Subnet 255.0.0.0). Click “Save settings” so that the new settings take effect.

9. Configure other settings of the device: direction of ports, Subnet and Universe for each port, etc. If necessary, edit the name of the device and its network settings, then click "Save settings" so that the new settings take effect.

10. Status LEDs of DMX ports will indicate the selected port's configuration and its current state. The device is ready for operation.

## Operation

ArtGate devices start their normal operation in a few seconds after they have been powered up. Device always operates based on last saved settings. Viewing ArtGate's settings does not affect normal operation until any of the settings have been saved. When changes are saved, the device applies the new settings immediately, without having to power it down. The status of each DMX port is indicated by the corresponding status LED.

In the input mode, port status LED is steady on if there is valid DMX input signal or flashes slowly the DMX input signal is invalid or absent. In the output and loop modes, port status LED is steady on when there is no data for output and blinks when new DMX data are transmitted (updated). In the off mode, port status LED is off.

Current status of each port can be controlled through the Web-interface.

## Technical maintenance

Maintenance the device, search and troubleshooting should be performed by service personnel. The device should be free from dirt, dents, connecting cables and wires must be intact and securely fastened.

Please send all your warranty-related questions to  
support@sundrax.com  
*All Sundrax products are covered by a 36 months warranty.*



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