

A4

Installation & user Manual



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Introduction

This document will describe the functionality and capability of the A4 with the new 2.0 firmware release.

This new firmware enables RDM in the A4. It is possible to discover all RDM compatible products connected, and take full advantage of the many features that RDM comes with.

The new recording module enables the A4 to be a complete standalone player. A recording can be routed out to the 4 different physical ports or via Ethernet by using either Art-Net or sACN. The recording module also contains a scheduler. So you can have multiple recordings and have them triggered during the day. The recordings can be made in two ways, either by letting the A4 record what's currently being sent to it, or by a desktop application and then uploading afterwards. It's also possible to download recordings from one A4, and then upload it to another.

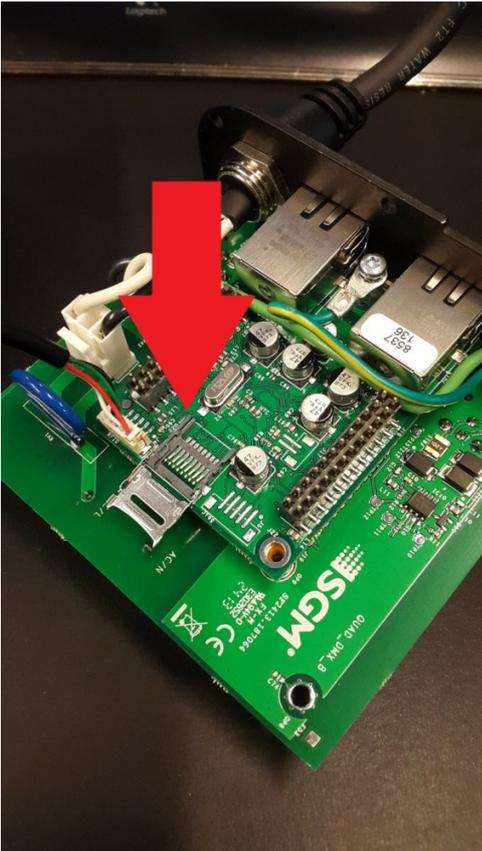
The new firmware also enables the A4 to be connected to the internet. This opens up for the possibility to remotely control and configure your system. You can upload new recordings to the device and edit the scheduler from your office instead of going out on site. It's possible to see sensor data from all the RDM compatible fixtures in the system.

With the A4 connected to the internet, you can create a log agent to monitor the sensors of a fixture. This will run automatic at a SGM server, so you don't need any software running for this to work. You will be notified by email if a sensor on a fixture goes above the normal limit. For example if you have created an agent to monitor the humidity of a G-Spot, and the sensor value goes above the normal limit, indicating an error, an email is sent to notify you, and you can send a technician out before further damage on the fixture.

Insert SD card

For the recording module and internet service to function the A4 requires a micro SD card.

The card is placed in the holder on the Art-Engine PCB:



To get the PCB out of the casing, unscrew the 6 small screws in the front, and pull out the assembly.

Installation

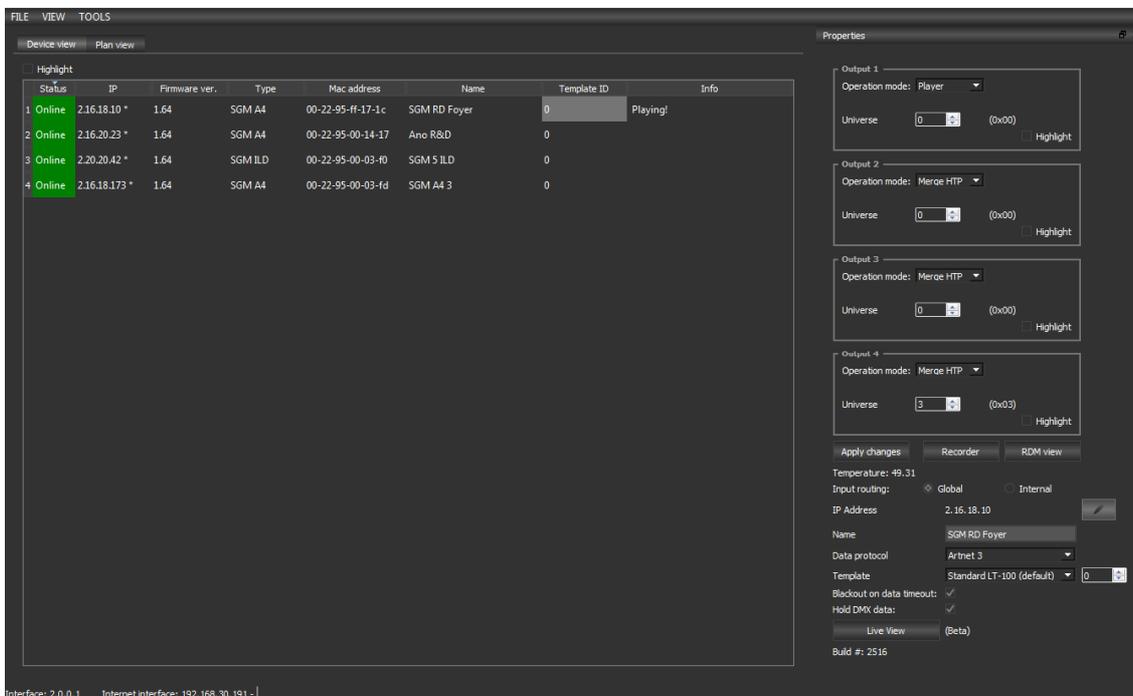
This section will describe how to install the desktop configurator tool and how to upload firmware to devices.

The desktop application comes with a standard windows installer:



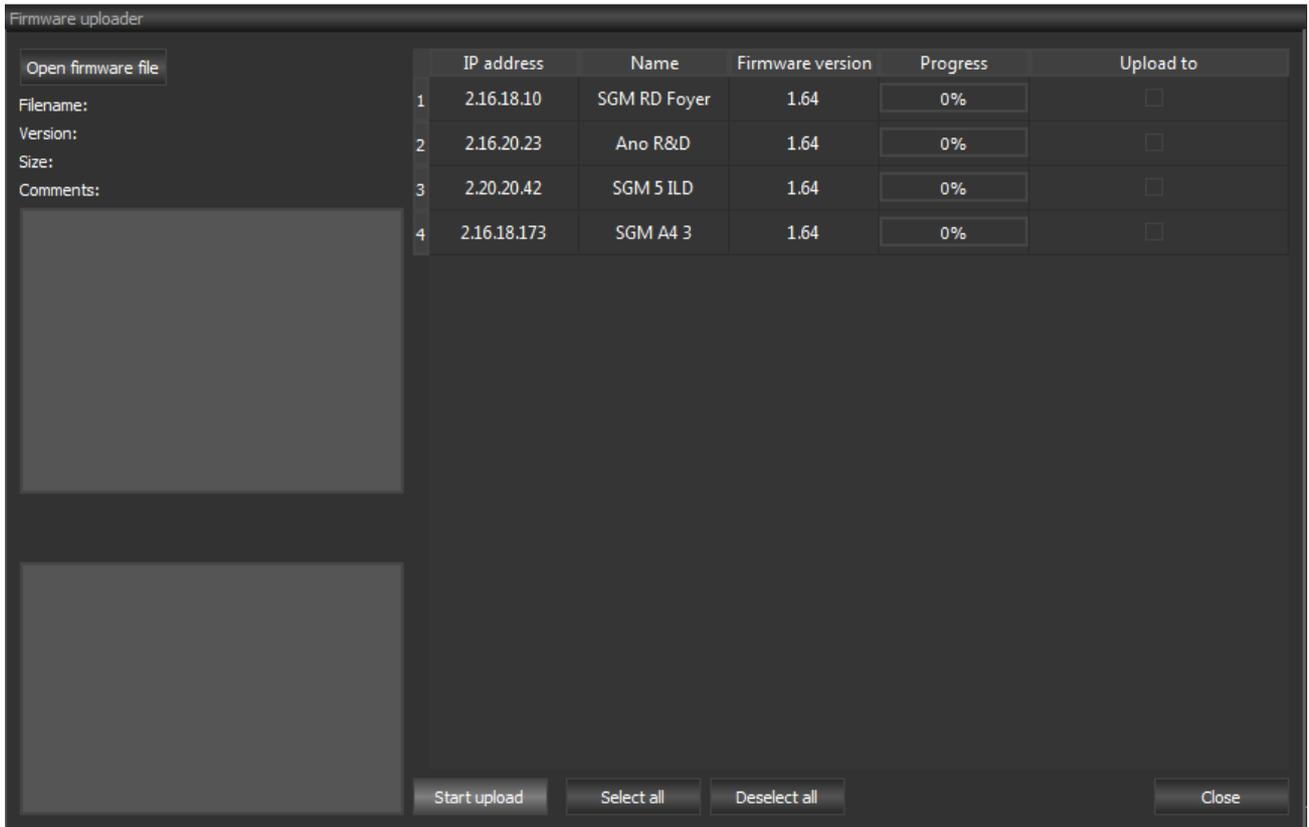
Run the installation wizard and open the application when the installation finishes.

The default view of the application:



To upload firmware to a device, go to the top menu, select "TOOLS" and the select "Upload Firmware".

A new dialog window will open up:



Select the new firmware by clicking the "Open firmware file" button.

Then select all the devices you wish to upgrade, by checking the checkbox "Upload to" outside every device.

Click the "Start Upload" button.

The Window can be closed when all the progress boxes has hit 100%.

The devices will reboot right after the upload has finished, so they might appear to be offline for a few moments.

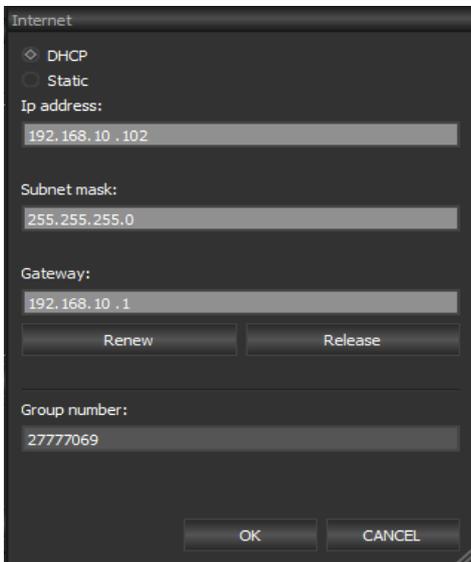
Connect device to internet

For a device to be connected to the internet, there of course needs to be an available internet source.

If you are planning to run a lot of Art-Net traffic in your system, it's recommended to make a local network for the devices. This can be done by setting a router in between the devices and the internet source. This will filter out any broadcasted Art-Net and not slowing the rest of the network.

The A4 can obtain an IP address automatically via DHCP or by setting a static address manually.

This is done in the "Internet settings" dialog:



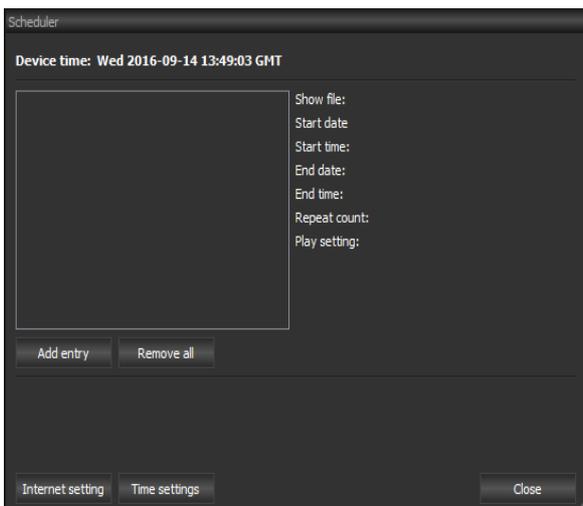
The screenshot shows the 'Internet' settings dialog. At the top, there are radio buttons for 'DHCP' (selected) and 'Static'. Below, there are text input fields for 'Ip address:' (192.168.10.102), 'Subnet mask:' (255.255.255.0), and 'Gateway:' (192.168.10.1). There are 'Renew' and 'Release' buttons below the gateway field. At the bottom, there is a 'Group number:' field (27777069) and 'OK' and 'CANCEL' buttons.

The dialog is available from the properties section.

DHCP is the default choice, but if you need to set a static IP address, simple select the "Static" selector, and the 3 IP address fields will become editable.

The "Group number" field is used to associate this specific device to your account. You get your group number when you create an user profile.

Press "OK" to save your settings.

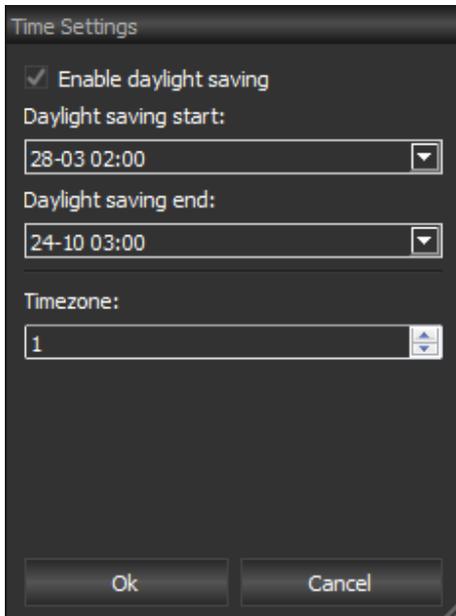


The screenshot shows the 'Scheduler' dialog. At the top, it says 'Device time: Wed 2016-09-14 13:49:03 GMT'. Below is a large empty rectangular area. To the right of this area are labels for 'Show file:', 'Start date:', 'Start time:', 'End date:', 'End time:', 'Repeat count:', and 'Play setting:'. Below the empty area are 'Add entry' and 'Remove all' buttons. At the bottom, there are 'Internet setting', 'Time settings', and 'Close' buttons.

To see if the device has made a successful internet connection, go to the "Schedule" window and check if the device time is the current date and time.

The time and date, is obtained from a global NTP server and is therefore UTC. It's possible to set the timezone and adjust for daylight savings in the "Time settings" dialog.

“Time settings” dialog:



Enable the daylight savings by clicking the checkbox.

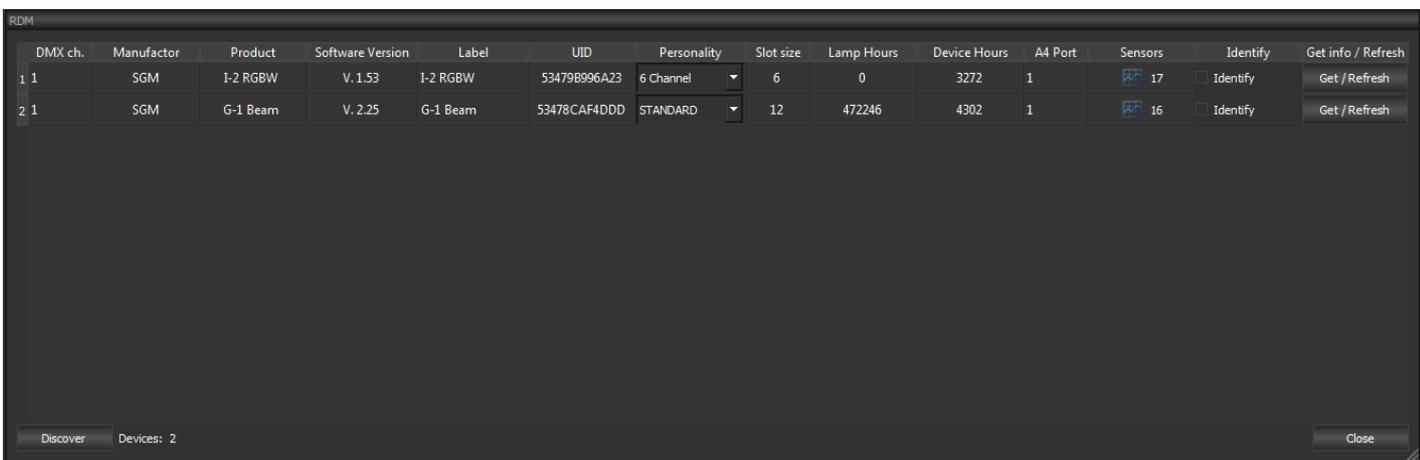
Set the start and end dates, and the time will adjust accordingly.

You can add or subtract hours from the time, to adjust to the time zone that fits where the device is placed.

RDM Device View

The desktop application allows you to see the connected RDM devices in two ways. The first view is the list view, which is found in the property section of each device. The second is the graphics view which is in the plan view. The graphics view enables you to see your complete system neatly arranged for great overview.

The list view:



The screenshot shows a window titled "RDM" containing a table of connected fixtures. The table has the following columns: DMX ch., Manufacturer, Product, Software Version, Label, UID, Personality, Slot size, Lamp Hours, Device Hours, A4 Port, Sensors, Identify, and Get info / Refresh. There are two rows of data. Below the table, there is a "Discover" button, a "Devices: 2" indicator, and a "Close" button.

DMX ch.	Manufacturer	Product	Software Version	Label	UID	Personality	Slot size	Lamp Hours	Device Hours	A4 Port	Sensors	Identify	Get info / Refresh
1 1	SGM	I-2 RGBW	V. 1.53	I-2 RGBW	53479B996A23	6 Channel	6	0	3272	1	17	<input type="checkbox"/> Identify	Get / Refresh
2 1	SGM	G-1 Beam	V. 2.25	G-1 Beam	53478CAF4DDD	STANDARD	12	472246	4302	1	16	<input type="checkbox"/> Identify	Get / Refresh

The list view provides you with a complete list of all the RDM compatible fixtures connected to you devices.

To populate the list with new fixtures, simple click the “Discover” button, and the device will perform a RDM discover sequence. New devices will have empty fields for the most part, to populate these fields with data, push the “Get/Refresh” button.

It’s possible to change the DMX address and personality of the fixtures by directly changing the values in the list. The change happens immediately and no confirmation buttons needs to be clicked.

It’s also possible to change the label of each fixture. This can be helpful in creating a better overview over fixtures in a big setup.

When the identify checkbox is checked the fixture is in RDM highlight mode. This varies from manufacture to manufacture how this mode is implemented. But the fixtures will usually light up white or flash.

If the fixtures support sensors you can click on the sensor field to open a new dialog which displays all the available sensors in the fixture.

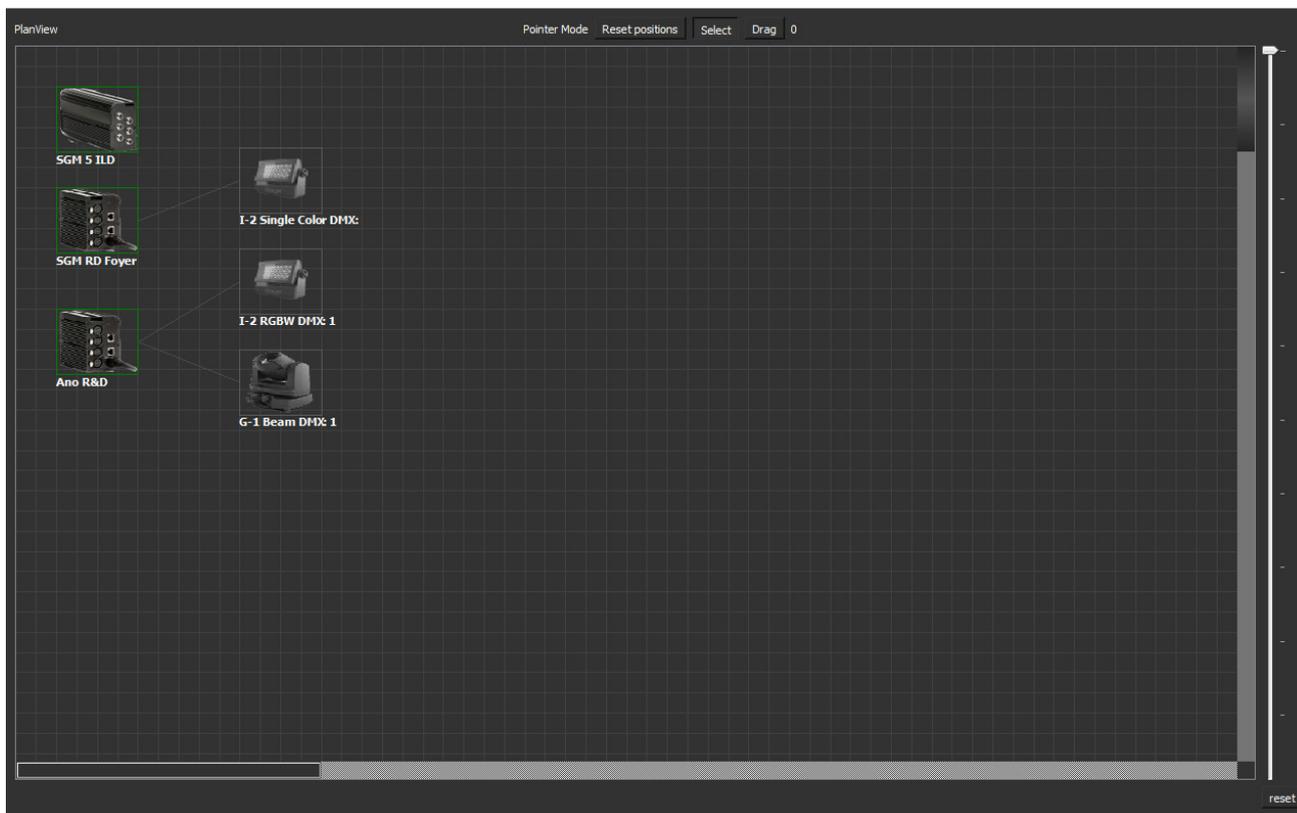
Sensor data

	Sensor Name	Min value	Max value	Value	Samples
1	Main Board Temperature	-20	120	35.26	4
2	Head Board Temperature	-20	120	32.63	4
3	Light Source Temperature	-20	120	28.39	3
4	Pan Angle	0	360	270.3	3
5	Tilt Angle	0	360	62.3	4
6	Wireless Signal Strength	0	100	0	3
7	Wireless Paired	0	1	1	3
8	Battery Voltage	0	50	23.57	3
9	Mains Voltage	0	50	22.42	3
10	Humidity	0	100	50.51	3
11	Compass	-1	360	300	3
12	LSM303D X corr	-20000	20000	-6016	3
13	LSM303D Y corr	-20000	20000	-4952	3
14	Pitch	-20000	20000	-39	3
15	Roll	-20000	20000	223	3
16	Light PWM	0	100	0	3

250 Interval (ms) Graph Close

The Sensor view shows all the sensors and poll them all in turn.

The graphics view:



In the graphics view you have the possibility to arrange your devices and fixtures so they match up with your setup. This gives a great overview over fixtures and an easy way to quickly find fixtures.

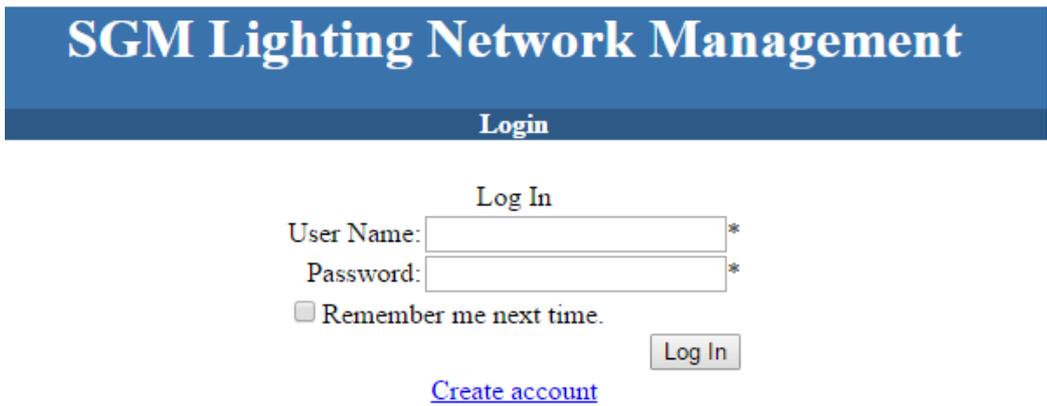
When a fixture is clicked in the graphics view the settings of the fixtures can be set from the property panel.

It is also possible to override control of a specific fixture by clicking the “override control” checkbox.

Create user profile

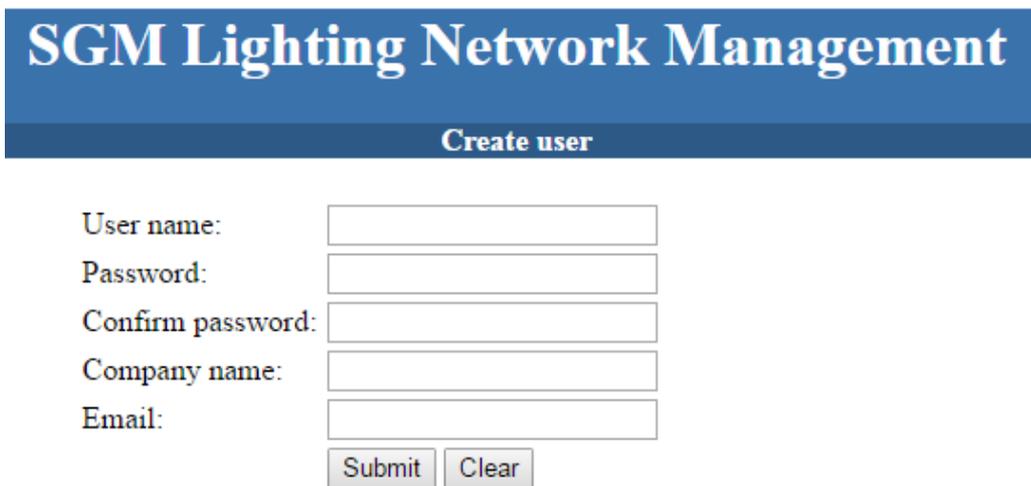
In order to use the online capabilities of the A4 you need a user profile. This user profile gets you a group number, which is used to connect you devices to your profile. It is also via this profile you will get email warnings from log agents, if you create these.

To create your user profile, go to the webpage: <http://sgmmail.cloudapp.net/>



The screenshot shows the 'Login' page of the SGM Lighting Network Management system. At the top, there is a blue header with the text 'SGM Lighting Network Management' in white. Below the header, the word 'Login' is centered. The main content area contains a 'Log In' form with the following elements: a 'User Name:' label followed by a text input field with an asterisk; a 'Password:' label followed by a text input field with an asterisk; a checkbox labeled 'Remember me next time.'; and a 'Log In' button. Below the form, there is a blue underlined link that says 'Create account'.

On the frontpage click "Create account"



The screenshot shows the 'Create user' page of the SGM Lighting Network Management system. At the top, there is a blue header with the text 'SGM Lighting Network Management' in white. Below the header, the text 'Create user' is centered. The main content area contains a 'Create user' form with the following elements: a 'User name:' label followed by a text input field; a 'Password:' label followed by a text input field; a 'Confirm password:' label followed by a text input field; a 'Company name:' label followed by a text input field; and an 'Email:' label followed by a text input field. At the bottom of the form, there are two buttons: 'Submit' and 'Clear'.

Fill in the fields, and push "Submit".

You will in then receive a confirmation email containing your group number.

This can also be found if you log in.

When you have created an account and received your group number, you can enter the group number into the devices you wish to associate with this account. You enter the group number into the devices in the “internet settings” dialog in the desktop application, as mentioned earlier.

When the devices are associated to an account and online, they will send a ping package to a server every minute. When a ping package has been received the device will be shown on the front page when you log in.

Online device view

You can see the devices associated with your account when you login on the webpage, or you can add them to a project in the desktop application.

SGM Lighting Network Management

Device view

[Devices Account](#)

SGM R&D

Node	Mac	Uptime	Last ping(UTC/GMT)	Country	City	IP	Port	Fixtures
R&D Foyer	00-22-95-00-0B-FD	0 Days 0 Hours 2 Minutes	6/15/2016 2:53:15 PM	N/A	N/A	37.205.124.102	0	<input type="button" value="Fixtures"/>
SGM A4	00-22-95-00-0C-F1	5 Days 1 Hours 12 Minutes	8/17/2016 1:23:55 PM	N/A	N/A	37.205.124.102	308	<input type="button" value="Fixtures"/>
SGM A4 FACADE 2	00-22-95-00-04-E3	13 Days 20 Hours 0 Minutes	9/14/2016 11:09:29 AM	N/A	N/A	37.205.124.102	31851	<input type="button" value="Fixtures"/>
SGM RD Foyer	00-22-95-FF-17-1C	32 Days 22 Hours 21 Minutes	9/14/2016 11:09:31 AM	N/A	N/A	37.205.124.102	53	<input type="button" value="Fixtures"/>
Ano R&D	00-22-95-00-14-17	0 Days 21 Hours 2 Minutes	9/14/2016 11:09:55 AM	N/A	N/A	37.205.124.102	116	<input type="button" value="Fixtures"/>

[Refresh](#)

Alerts:

RDM UID	Sensor Number	Sensor Name	Error String	Message sent	Accept

[Refresh](#)

On the webpage you can see each device and when the last ping was received, this should be around a minute ago for online devices.

The Alert field shows current alerts, if any. Alerts are accepted by clicking the button in the accept field. When an alert has been accepted there will not be sent any more mails, mails will be otherwise be sent every 24h until it's accepted.

To see a list of all the RDM fixtures connected to each device, click the "Fixtures" button, and you will be redirected to the fixture page:

SGM Lighting Network Management

Sub fixtures

[Devices Account](#)

Fixtures:

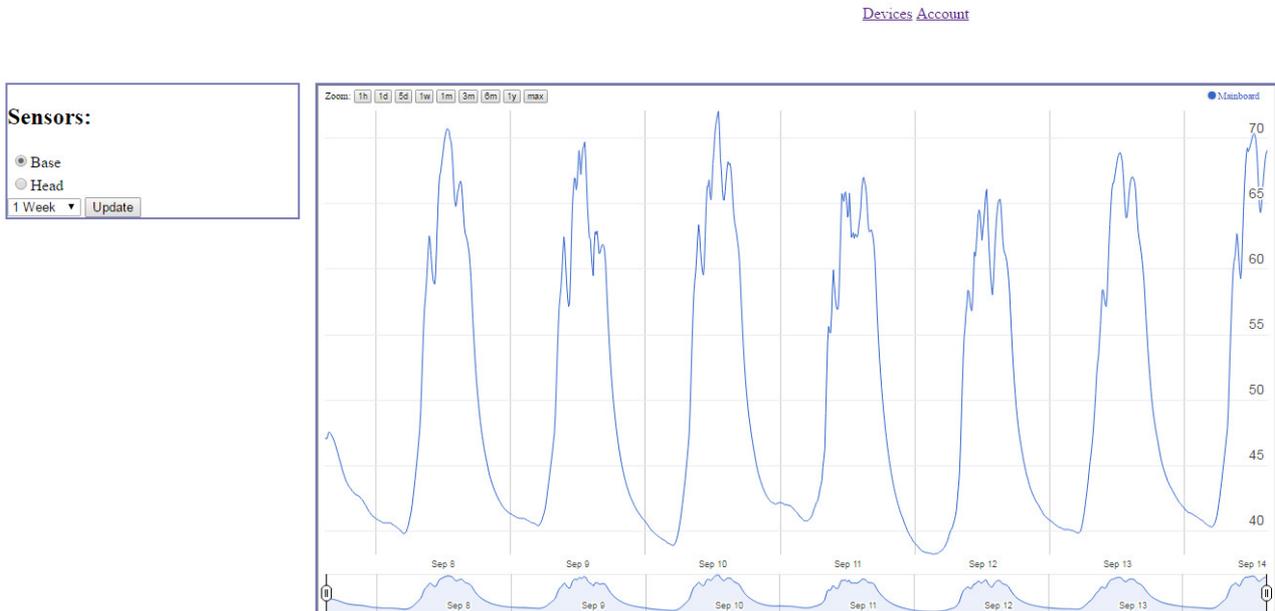
RDM UID	Manufactor	Product	Label	Personality	DMX Address	Firmware V.	Lamp Hours	Device Hours	Errors	Last msg	Refresh	Log Data
5347823C85D1	SGM	P-5	SGM P-5	3 Channel RGB	510	V. 2.49	2485	7659	0	9/13/2016 3:14:00 PM	<input type="button" value="Refresh"/>	<input type="button" value="Logs"/>
534745FFFE92	SGM	P-5	SGM P-5	3 Channel RGB	510	V. 2.49	2487	7507	0	9/6/2016 12:11:40 PM	<input type="button" value="Refresh"/>	<input type="button" value="Logs"/>

[Refresh](#)

If the info fields are empty push the "Refresh" button to fill in the data.

To view log data from a log agent push the “Log” button.

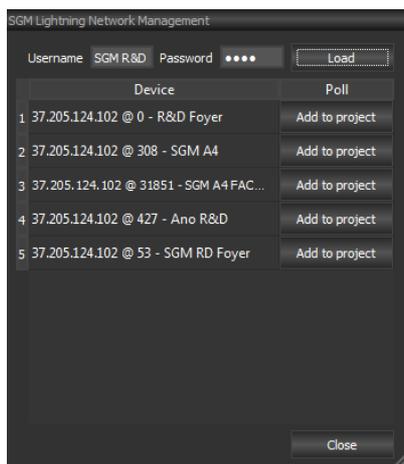
Here you can see a graph representing the data.



Here we see the base temperature from a P5.

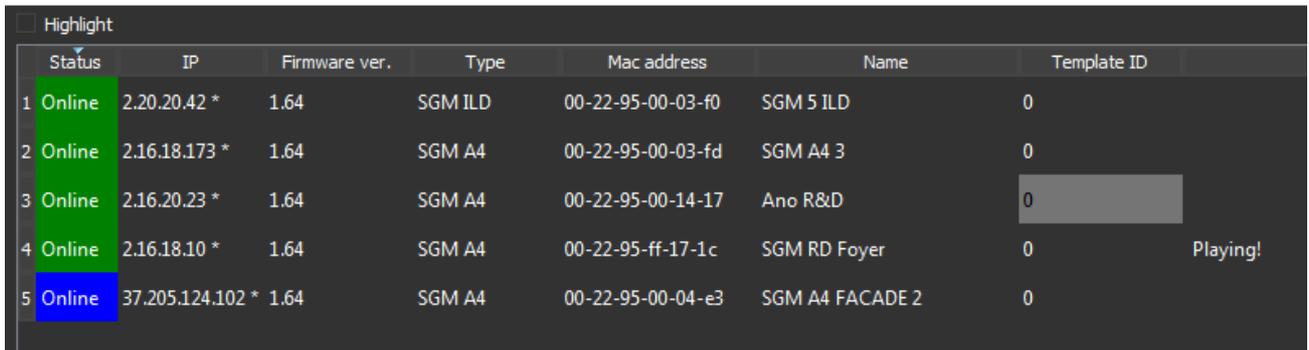
You can also add the devices to a project in the desktop application. This gives you full control over the device, and you can do anything that you also could if you were connected locally.

To add a device, go to “TOOLS” and then push the “LNM” button.



This will give you a dialog window, where you can load all the devices associated to your account, and by clicking the “Add to project” button you add the device to the current project.

Devices connected via the internet will show up with a blue color instead of green. They will still turn red if the communication breaks or they are turned off.



	Status	IP	Firmware ver.	Type	Mac address	Name	Template ID
1	Online	2.20.20.42 *	1.64	SGM ILD	00-22-95-00-03-f0	SGM 5 ILD	0
2	Online	2.16.18.173 *	1.64	SGM A4	00-22-95-00-03-fd	SGM A4 3	0
3	Online	2.16.20.23 *	1.64	SGM A4	00-22-95-00-14-17	Ano R&D	0
4	Online	2.16.18.10 *	1.64	SGM A4	00-22-95-ff-17-1c	SGM RD Foyer	0
5	Online	37.205.124.102 *	1.64	SGM A4	00-22-95-00-04-e3	SGM A4 FACADE 2	0

It will be their public IP address showing in the IP field.

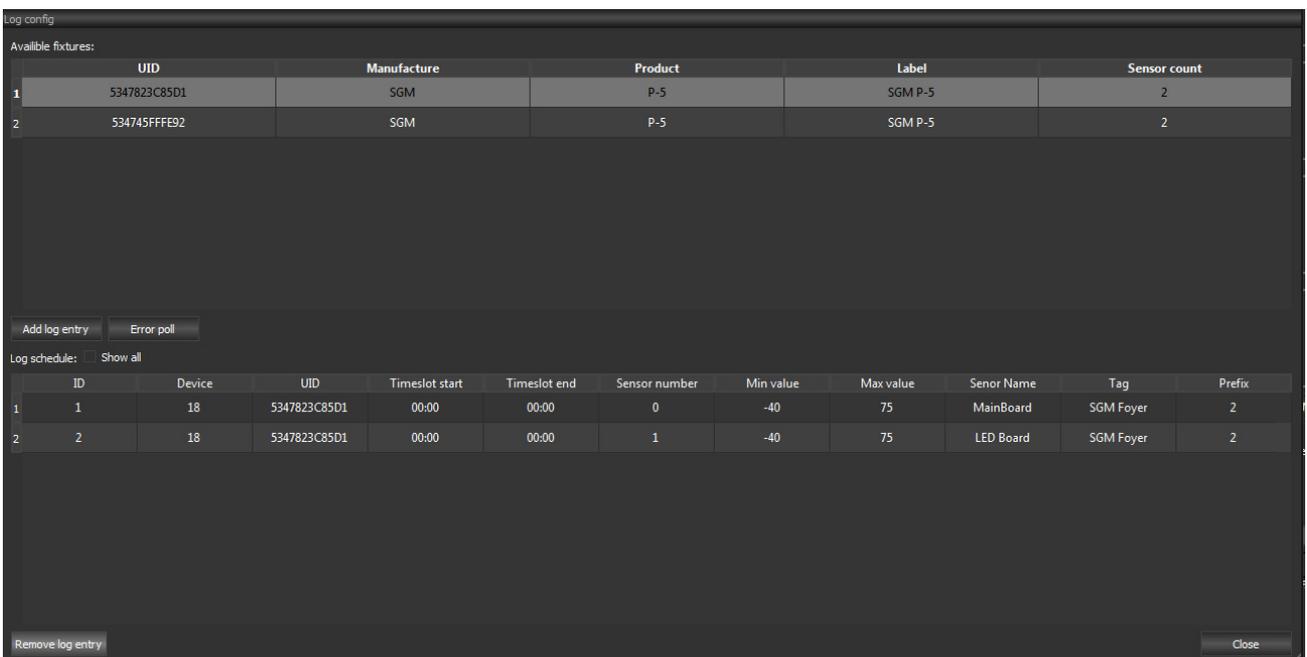
Internet devices behave like regular local devices except communication can have some minor latency.

Create log agent

In order to create a log agent you need to add the device, on which you want to create a log agent, to a project in the desktop application. This is explained in the previous chapter.

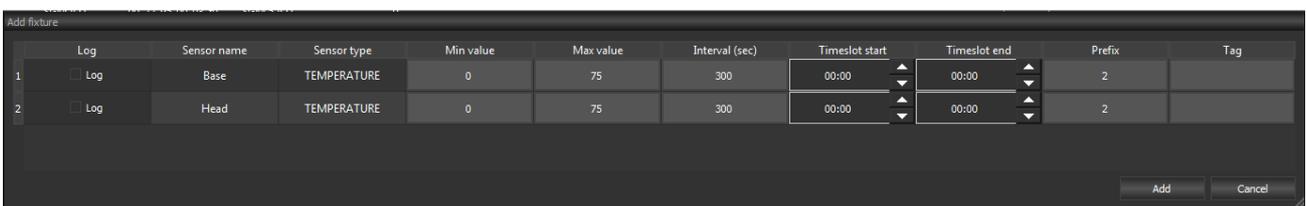
When this is done, click on the device, and you will notice a button in the property field called “Log editor”. This button is not available on regular local devices.

Click the “Log Editor” button and a window will show:



This window contains all the RDM fixtures connected to the device.

Select the fixture you wish to create an agent on, and click the “Add log entry” button.



This window shows the available sensors on the fixture.

Select the sensors you wish to log by clicking the checkbox in the “Log” field.

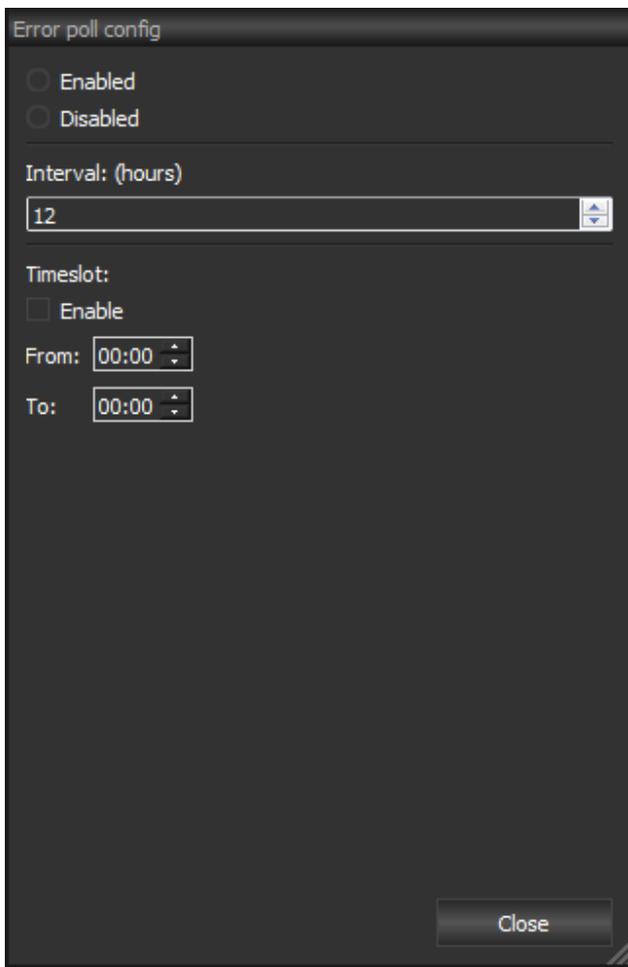
The min and max values indicate the values the sensor must be within in order to not raise an error.

The Interval indicates how often you want to log the sensor.

The timeslot gives an interval of time to the log agent, where it's allowed to do the logging. You might not want to allow logging during a scheduled show, because heavy RDM activity on a DMX link can cause some flicker in the lights.

In the "Tag" field you can write a custom tag for the agent. This can be used to quickly find the data.

It is also possible to create an agent who polls for errors. This is only possible for SGM products. This is done by clicking the "Error poll" button in the "Log editor" window.



Error poll config

Enabled
 Disabled

Interval: (hours)
12

Timeslot:
 Enable

From: 00:00
To: 00:00

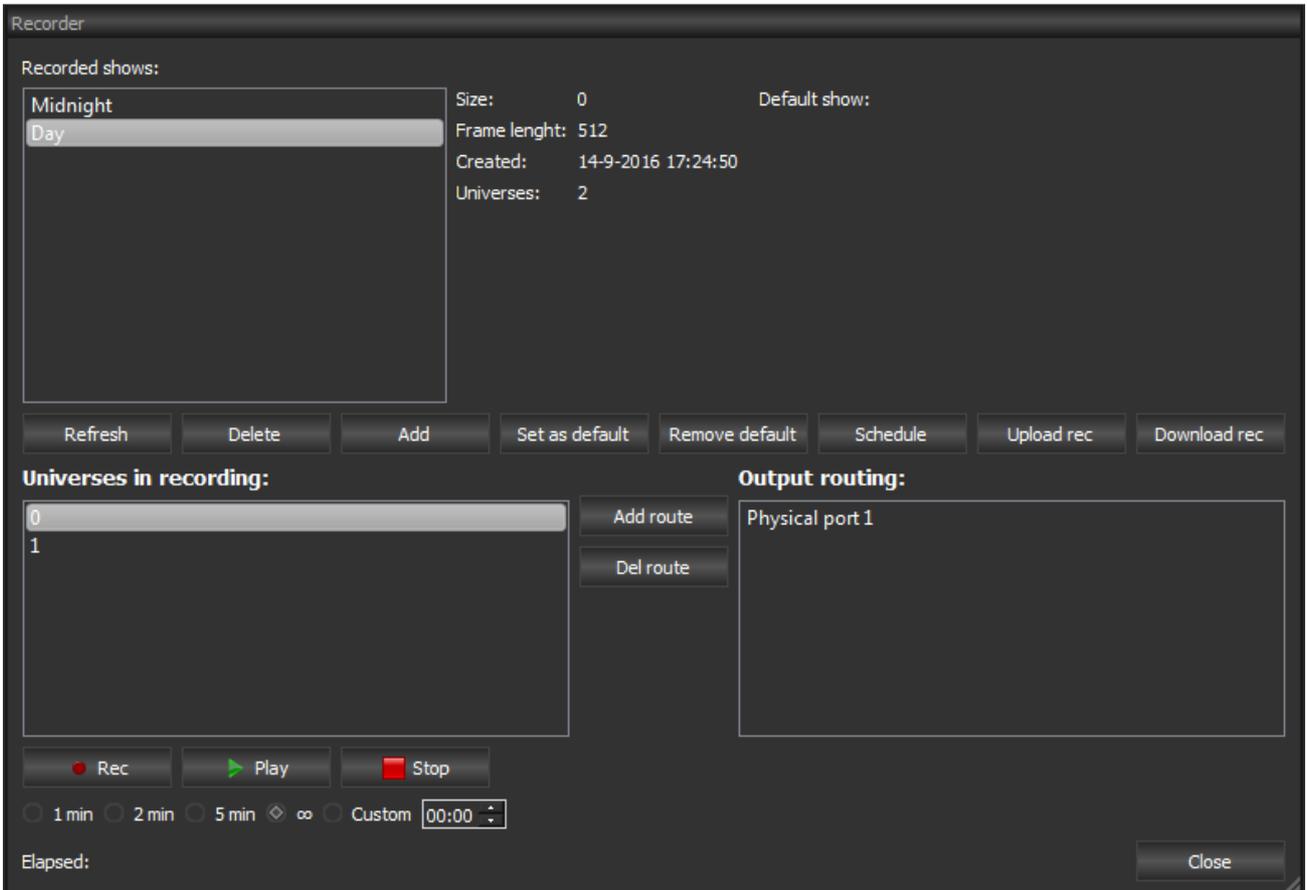
Close

Click the "enabled" button to enable the error poll.

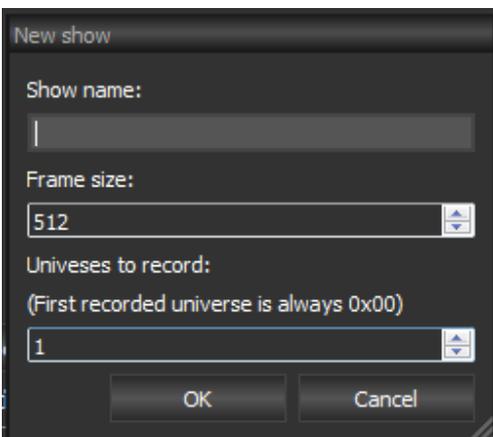
Set the interval to an appropriate value, default is 12 hours. Again it is possible to create a timeslot where it is allowed for the agent to do the actual poll.

Recorder

Open the “Recorder” window by clicking the “Recorder” button in the property field.



To create a new recording open the “New Show” dialog by clicking the “Add” button.



Show name is the name that will appear in the recorded show list. Max 20 characters.

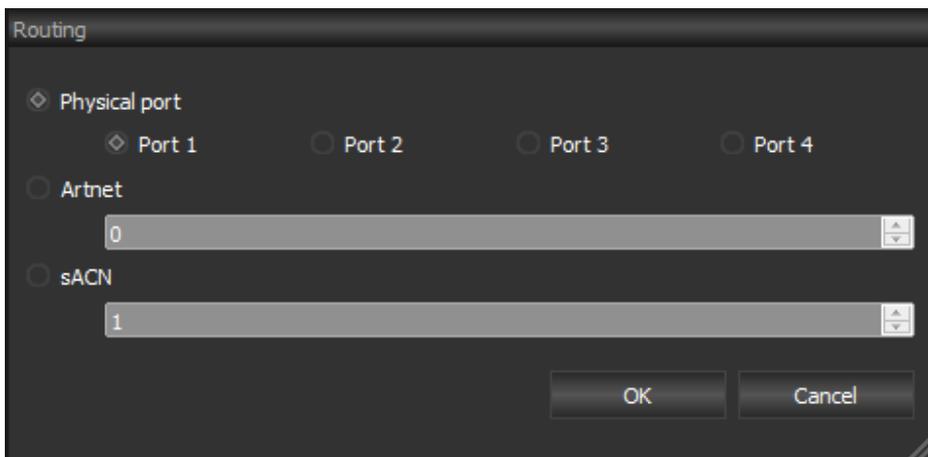
Frame size is the size of channels to record. For example if you only need 100 DMX channels, this can be set to 100 to reduce the file size.

Universes to record is the amount of universes this file will record. Max 4 universes.

When you have successfully created a new show file, it's time to record data into it. Select the file in the file list. You have the possibility to set a fixed time on the recording. This is useful if you have a show that repeats itself after 2 min. then select the "2 min" button, and the recording will automatically stop after 2 minutes.

To start the recording push the "Rec" button. To stop the recording push the "Stop" button.

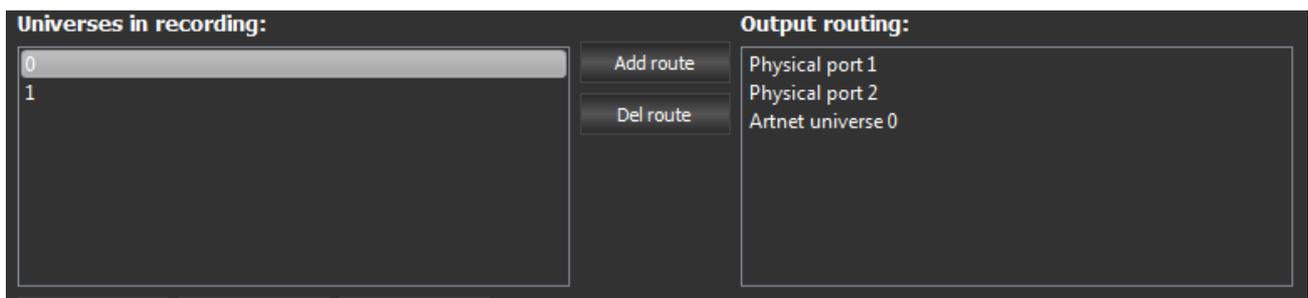
When a show file is selected the universes in the file will show in the "Universes in recording" list. In order to playback the show you have just recorded, you need to create a routing to the universes. This is done by selecting a universe in the list and then clicking the "Add route" button.



Here you have the possibility to route the data out to 1 of the 4 physical ports on the A4.

You can also choose to route the data out as Art-Net or sACN.

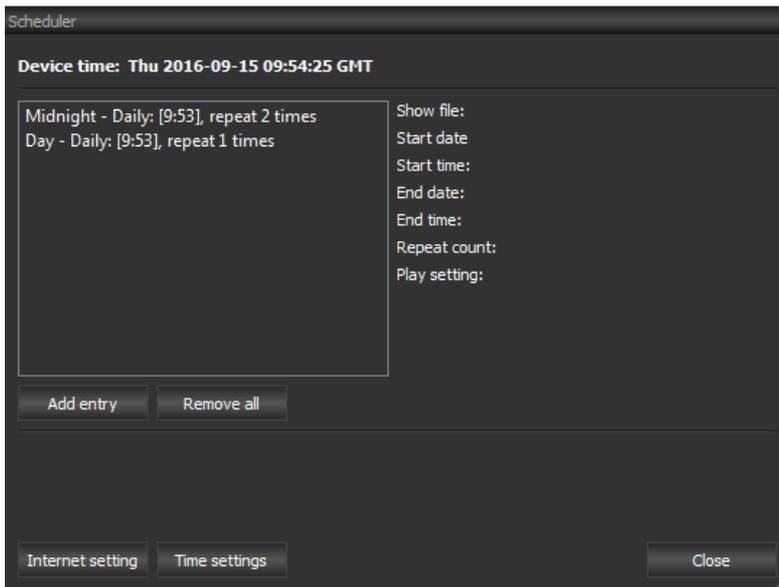
You can add multiple routes to each universe if you like.



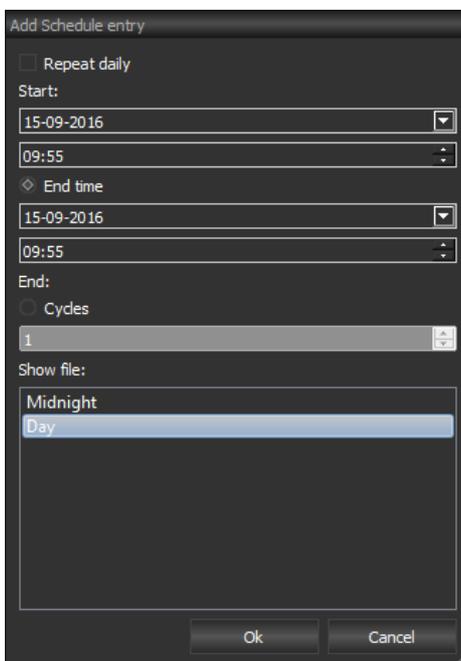
You can set a show file to be the default show by selecting the file in the show list, and clicking the "Set as default" button. When the A4 is powered up it will automatically start playback of this file.

Scheduler

To open the “Scheduler” dialog click the “Scheduler” button in the Recorder window.



Here you can see an overview over the schedules currently created. To add a new entry in the scheduler, click the “Add entry” button.



In this dialog you can choose the settings for the schedule entry.

If the entry should repeat daily, click the “Repeat daily” checkbox.

You will then need to set a start time, for the show to start.

If “End time” is selected the show will loop until the time period is over. If “Cycles” is selected the show will loop the amount of cycles selected.

In the show file list you choose which show to associate with this entry.