ArcSystem
ARC–TX1

	Project	Type	Catalog Number
Technical Data Sheet			

AC Mains
Power
90-264VAC
50/60Hz

ArcMesh
Wireless
Protocol

ARC-TX1
Wireless Gateway

Single Gateway
Example

AC Mains
Power
90-264VAC

DMX512
From Lighting
console
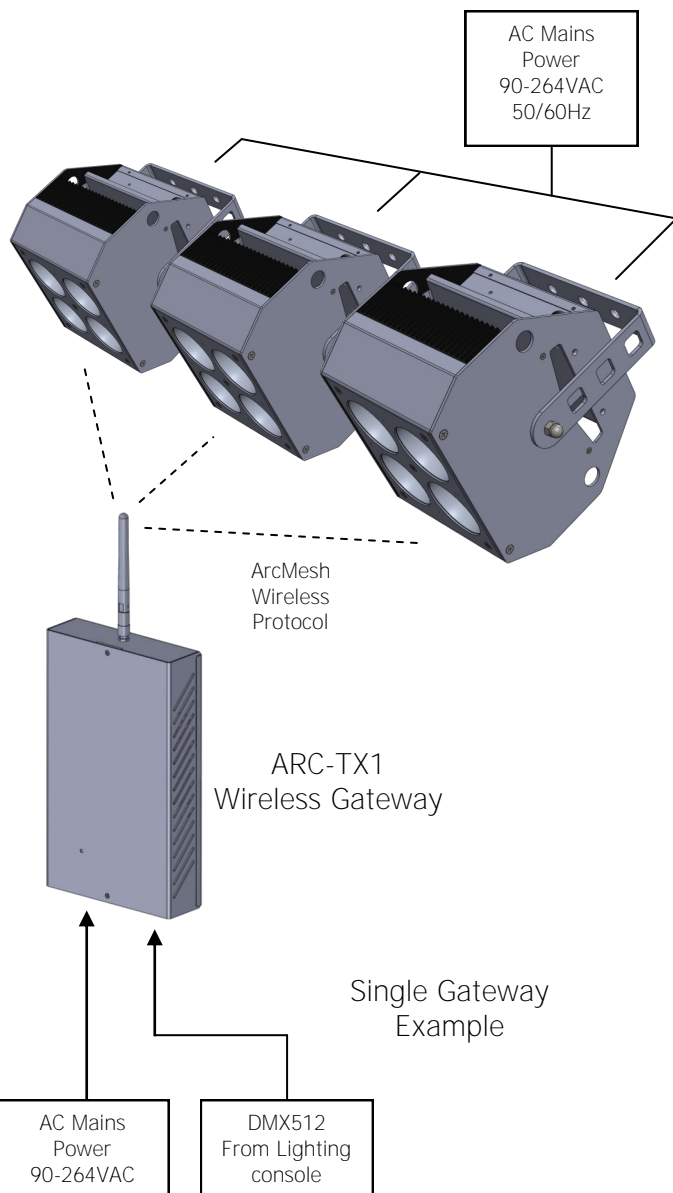
Introducing the ARC-TX1, A DMX wireless gateway for controlling the ArcSystem, a new range of LED auditorium lighting fixtures that are dimmable from 100% to absolute zero using wireless mesh control.

The ARC-TX1 uses a proprietary wireless control protocol developed by GDS called ArcMesh. ArcMesh allows for control of all ArcSystem components.

Simply, it facilitates DMX control of ArcSystem lighting components, and manages any GDS button panels recalling presets.

If using ArcSystem lighting components with the wired DMX option, The ARC-TX1 is not required.

Technical Datasheet.

ArcSystem
ARC–TX1

www.gds.uk.com

General Information

A DMX wireless gateway that allows 1 universe of DMX to be transmitted to ArcSystem lighting components. The compact robust enclosure is designed for wall mounting in permanent installations. It has 3 x conduit knockouts for direct conduit connection or cable glands on the bottom of the unit. It comes complete with antenna that fits on top of the enclosure, see technical drawings below.

To maximise the effectiveness of the ARC-TX1, it is recommend to install the unit into the same space as the majority of the light fittings. Because ArcMesh has the ability to re-transmit its data (each device is a transceiver), other light fittings that are further away can receive data from light fittings near them as opposed to the ARC-TX1.

The ARC-TX1 is configured using the ARC-CT (Commissioning Tool), the ARC-CT is a software application that comes complete with USB transmission dongle for configuring the ArcSystem control parameters. See separate data sheet.
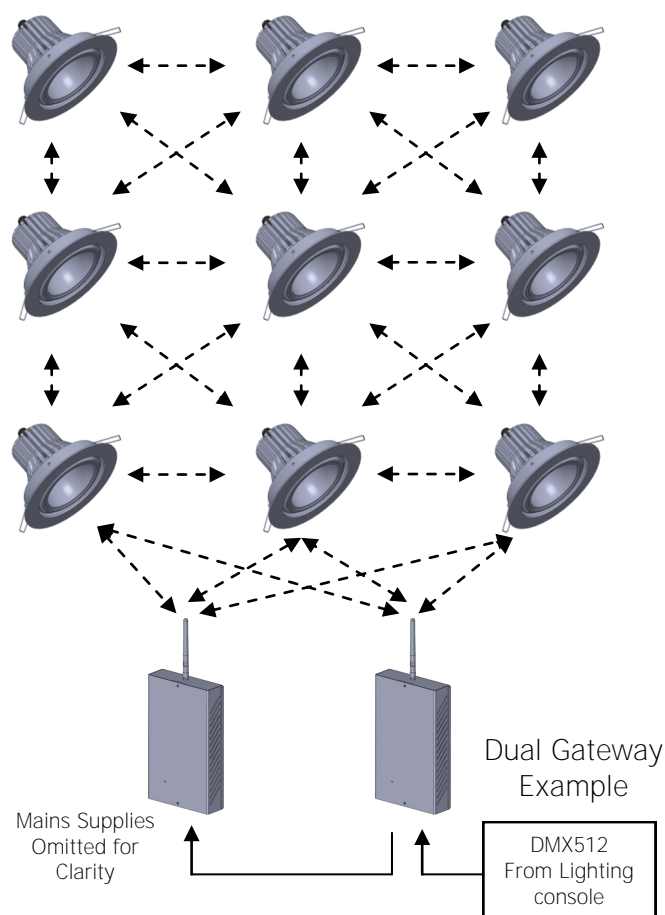
Key Points:

- 90-264VAC mains input.
- DMX512 control input.
- DMX512 control output. The DMX output terminal provides either data from the internal stored presets or the the DMX data from the input. Please see notes on operation below.
- Single or Dual gateway operation for system redundancy. Automatic changeover on power fail if first gateway fails.
- Based on IEEE802.15.4 protocol, allowing co-existence with Wi-Fi and Bluetooth. Operates away from standard wireless networks ensuring minimal interference.
- Heavily site tested for stable operation in flooded wireless networked environments.
- Encrypted service, not identifiable by Wi-Fi.
- 64 ArcMesh channels patchable to 512 DMX channels.
- Non Volatile Memory, keeping settings on power fail
- In conjunction with ARC-CT (Commissioning Tool):
  ⇒ Dimming control and level setting
  ⇒ Patching
  ⇒ Auto recovery for power fail
  ⇒ Minimum Level Setting
  ⇒ Group setup and fade times
  ⇒ Group recall using ARCCP8 (8 way double gang preset button panel). See separate spec sheet.

Dual Gateway Example

Mains Supplies Omitted for Clarity

DMX512 From Lighting console

To specify state:
A Wireless gateway for use with GDS ArcSystem LED light fittings. Unit to be constructed from powder coated mild steel and supplied with external antenna. Facility for direct conduit mounting or cable gland fixings. Uses standard DMX512 for control input, and is configured using GDS ARC-CT (Commissioning Tool). The Wireless system must be able to operate fully redundantly using two gateways. Example Part Number ARC-TX1
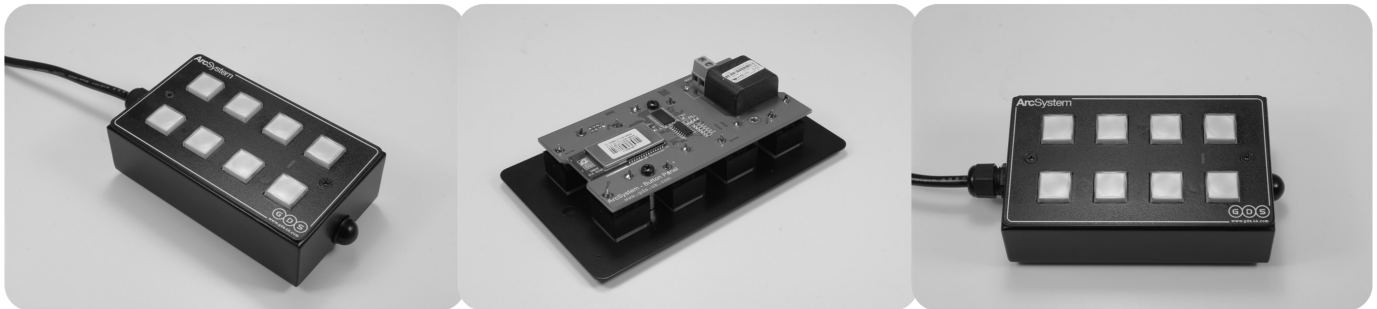
ArcSystem
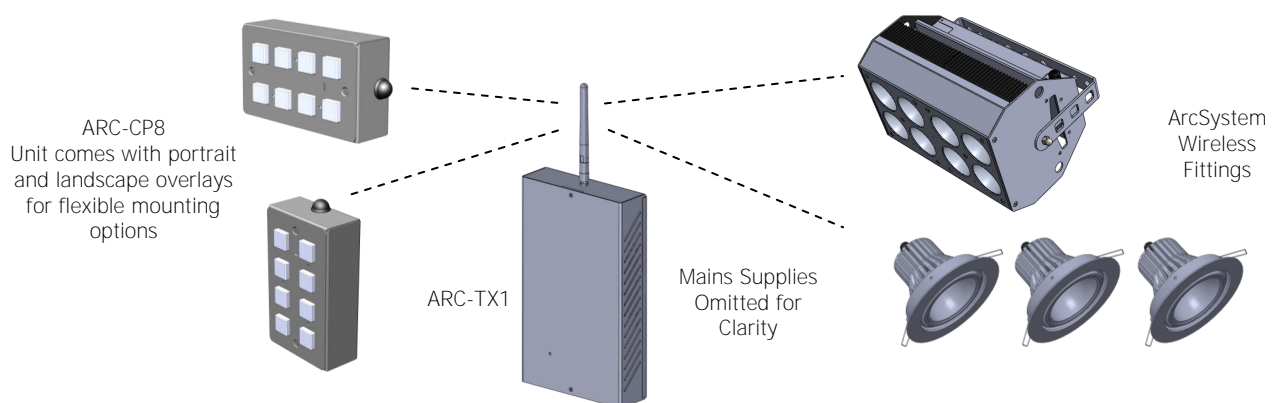# ARC–TX1

Using ARC-CP8 (8 Button Panel)

If remote button panels are required in the ArcSystem, it is possible to use the ARC-CP8 (8 way control panel). The ARC-CP8 offers recall of 8 of a maximum 24 stored presets in the ARC-TX1 gateway. It communicates over the ArcMesh network, so only power is needed at the required button panels. Please see separate data sheet for further information on this product. Any number of CP8 panels can added and assigned to the 24 stored presets.

It is possible to use the ARC-TX1 node in different control scenarios depending on the venues requirements, some examples are shown below:

Control with only ARC-CP8
If using only button panel control in the venue, you will need an ARC-TX1 gateway, even if your ArcSystem LED light fittings are configured as wired. This is because the preset scenes are stored for playback in the ARC-TX1 gateway. Further, the ARC-CP8 (button Panel) is only wireless, so it has to communicate with the ARC-TX1 gateway to convert communication back to DMX512. You can setup the required scenes using the ARC-CT (Commissioning Tool) within the gateway and replay them once they are assigned to the button panels. Fade times and special rules can be set according to the ARC-CT setup, see separate data sheet.

ARC-CP8
Unit comes with portrait and landscape overlays for flexible mounting options

ARC-TX1

Mains Supplies Omitted for Clarity

ArcSystem Wireless Fittings

NOTE:
The 24 presets that are stored within the ARC-TX1 can be setup using either the DMX input to create the levels or the ARC-CT (commissioning Tool) preset page to adjust the levels over the 64 ArcSystem groups. Once these have been set, they can be stored into 1 of the 24 presets using the ARC-CT. These presets can then be assigned to the buttons on button panels, along with settings such as fade times and button logic rules, such as push and hold for a predetermined time before the button will trigger the preset. Please see separate data sheet for further information on these products.
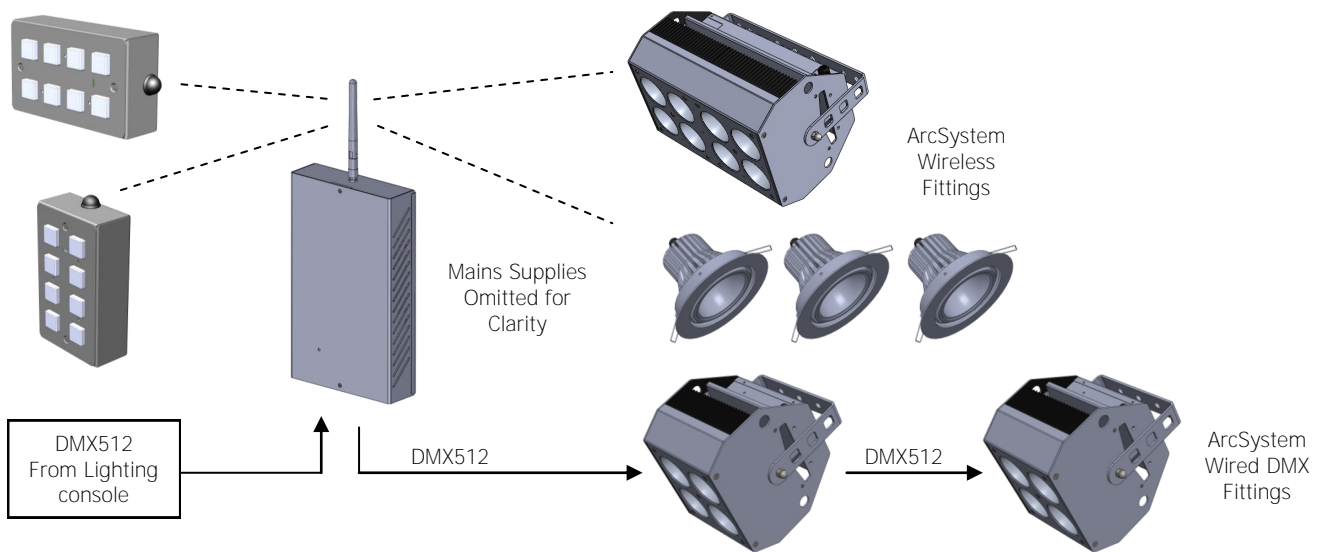
ArcSystem
ARC−TX1

Using ARC-CP8 (8 Button Panel) - cont

Control with ARC-CP8 and DMX

Button panels and DMX512 can be used together in one venue as required. In addition, both wired and wireless units can operate from the ARC-TX1 simultaneously. A DMX control channel (assignable in the ARC-CT) allows for switching between internal preset control (button panels) and external DMX input control. Fade times and rules for this transition can be set within the ARC-CT.

ArcSystem Wireless Fittings

Mains Supplies Omitted for Clarity

DMX512 From Lighting console

DMX512

DMX512

ArcSystem Wired DMX Fittings

DMX with dual redundancy (2 x ARC-TX1)

It is possible to run the ArcSystem as a dual redundant system whilst using wired and wireless light fittings and button panels. The gateway is either in master or slave mode, depending on the ARC-CT setup. The unit that is set to slave mode will pass the DMX data straight through, whereas the master unit will output the preset or live DMX levels onto the 'DMX Out' depending on the DMX control channel status. The preset and configuration data is stored in both units regardless of system state. This is achieved by using RDM between nodes on the DMX data line. For this reason, either gateway can run the system in the event of a gateway failure.
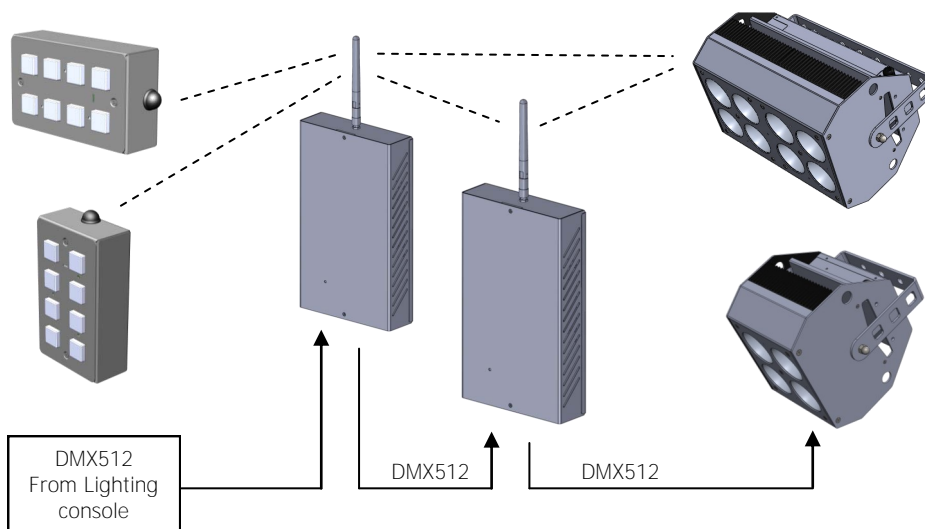
Note:
When 2 x ARC-TX1 are used together, link the DMX signal through both units. The system will designate a master and slave unit. The slave unit will pass the DMX through.

DMX512 From Lighting console

DMX512

DMX512

System Architecture

There is an assignable control channel from the DMX IN port that is used to switch between local and external control. This control channel allows either the local button panels to be used, or full DMX control from the DMX IN port. This allows the system to be used whilst the venues lighting desk is off, or full desk control for pre-show applications etc.
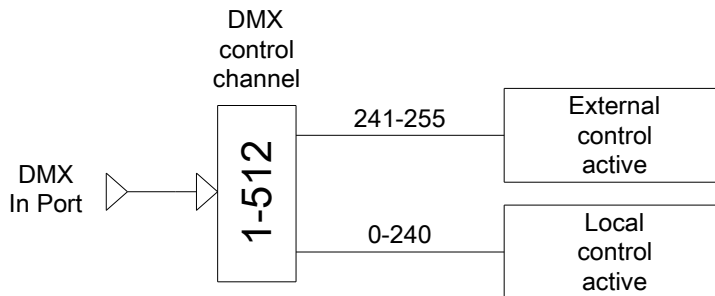

The ArcSystem operates on 64 control groups. Depending on the DMX control channel above, the system operates in the following way.

Local control (control channel low)
The 24 stored presets store all 64 groups for outputting to either the wireless or wired fittings. If using the DMX output for wired fittings, the DMX channels that are assigned to the 64 groups in the ARC-CT are used.

As an example, if DMX 501 is assigned to the first of 64 control groups (group 1). Wireless fittings can be addressed to respond to group 1. In this case, DMX 501 would be output from the DMX OUT port when a button panel is setup to replay group 1.
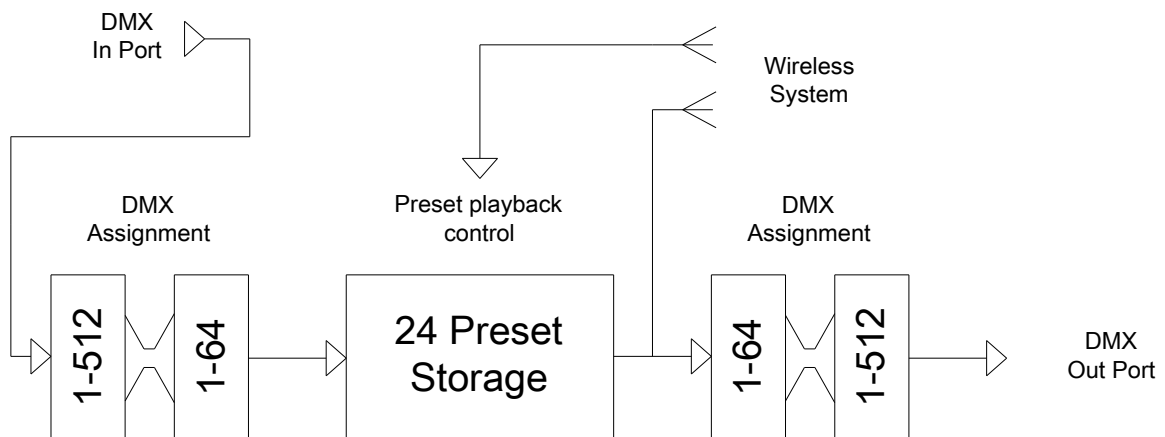
For convenience, It is possible to use the DMX IN port levels to store the 24 presets for play back when the ARC-TX1 is placed in local control. If this is not possible, for venues that do not have a lighting desk, they can be setup with the ARC-CT instead.

All DMX IN levels apart from the control channel are ignored during normal operation.

ArcSystem
ARC–TX1

www.gds.uk.com

System Architecture - cont

External control (control channel high)

The DMX IN channels are assigned to the 64 control groups using the ARC-CT. The DMX IN can then be used to directly control these control groups for wireless control. The DMX OUT port will output the same DMX channels that are being used for the DMX IN port. Channels that are not assigned to the 64 control groups will also be passed through to the DMX OUT port.
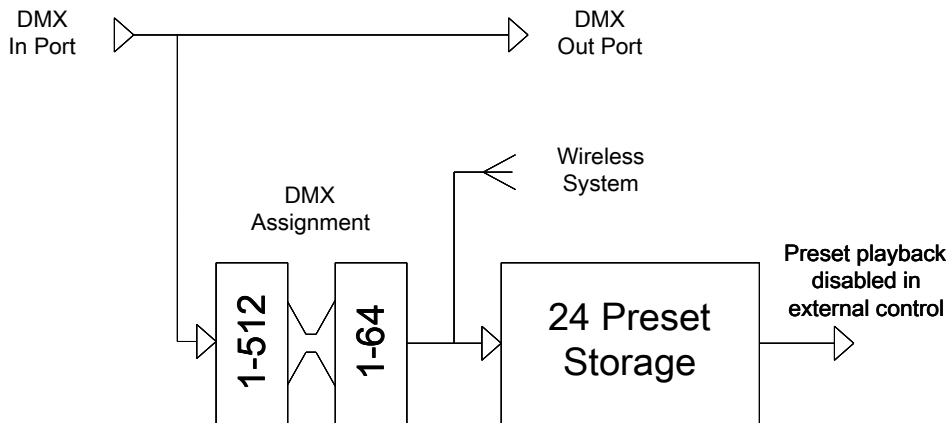
Programming/Replaying Presets

When programming presets with the ARC-CT tool, it is possible to select only channels to be affected for that preset when storing. This means a preset can be replayed that may be programmed for say group 1, that will not effect the status of other groups.

.

Basic Physical Information

- Unit Weight 0.9 Kgs / 1.98 lbs
- Height = 41mm / 1.6"
- Width = 141mm / 5.5"
- Length = 230 / 9.1" (excluding antenna)
- Length = 344 / 13.5" (including antenna)

ArcSystem
ARC–TX1

www.gds.uk.com

Dimensional Data

[5.551in]
141mm

[9.055in]
230mm

[13.532in]
343.70mm

[1.618in]
41.10mm