

DMX (Digital Multiplex) controllers are essential devices used in the entertainment and lighting industry to control stage lighting, effects, and other DMX-compatible devices like fog machines, moving heads, LED fixtures, and lasers.

Here's a detailed overview:

- What is DMX?

DMX is a standard protocol (DMX512) used to control lighting and stage equipment.

It allows communication between controllers and devices using a standardized signal over a specific cable format.

DMX512: Refers to the transmission of up to 512 channels of data, each capable of controlling a single function of a device (e.g., brightness, color, movement).

- **DMX Controller Basics**

A DMX controller sends DMX signals to devices to control their functions. The number of devices and channels it can manage depends on the controller's capabilities.

Types of DMX Controllers

1. Hardware Controllers:

Manual Controllers: Physical consoles

with sliders, buttons, and faders for hands-on control.

Programmable Controllers: Allow users to program scenes, chases, and sequences for automated playback.

2. Software Controllers:

Use a computer, tablet, or smartphone.

Require a DMX interface (e.g., USB-to-DMX) to connect the software to DMX-compatible devices.

Popular software includes Chamsys MagicQ, LightKey, and QLC+.

3. Hybrid Controllers:

Combine hardware and software features for versatile control.

- Key Features of DMX Controllers

1. Channel Count:

A single DMX universe supports 512 channels. Each fixture uses a specific number of channels.

Advanced controllers can support multiple universes (1024 channels, 2048 channels, etc.).

2. Programming and Scenes:

DMX controllers allow users to create

"scenes" (specific settings for fixtures) and "chases" (sequences of scenes).

3. Connectivity:

Uses 3-pin or 5-pin XLR cables for signal transmission.

Wireless DMX options are available for modern setups.

4. Control Modes:

Manual Mode: Direct control of channels.

Auto Mode: Pre-programmed sequences.

Sound-Activated Mode: Syncs lighting effects with music or ambient sounds.

- How DMX Controllers Work

1. Addressing Fixtures:

Each DMX fixture is assigned a starting channel (address).

The number of channels used by a fixture depends on its capabilities (e.g., a simple PAR light may use 3 channels for RGB, while a moving head might use 10+).

2. Data Transmission:

The controller sends data packets to all devices in the chain.

Devices only respond to data intended for their assigned channels.

3. Daisy-Chaining:

Fixtures are connected in a daisy-chain configuration using XLR cables.

The last fixture in the chain requires a DMX terminator to prevent signal interference.

- Advantages of DMX Controllers

Precise control over lighting and effects.

Synchronization of multiple fixtures for complex light shows.

Scalability for small setups to large productions.

Compatibility with most professional lighting equipment.

- Choosing the Right DMX Controller

1. Application: Determine whether it's for a small DJ setup, a concert, or a theater production.

2. Number of Fixtures: More fixtures may require more channels or multiple

universes.

3. Ease of Use: Beginners might prefer simpler controllers, while professionals may need advanced features.

4. Budget: Options range from affordable manual controllers to expensive, feature-rich consoles.

● Popular DMX Controllers

1. Entry-Level:

Chauvet Obey 40

ADJ (American DJ) DMX Operator

2. Intermediate:

Elation Midicon 2

Enttec DMX USB Pro (paired with software)

3. Professional:

MA Lighting GrandMA series

Avolites Tiger Touch

● Tips for Using DMX Controllers

1. Plan Your Layout: Label fixtures and

assign logical channel addresses.

2. Backup Your Programming: Save scenes and sequences in case of controller failure.

3. Use Quality Cables: Poor-quality cables can cause signal issues.

4. Experiment: Familiarize yourself with your controller's capabilities for creative results.

- DMX controllers are vital for bringing stage designs to life, whether you're running a small event or a large-scale production. Let me know if you'd like

guidance on specific controllers,
programming tips, or troubleshooting!

[from: Mon Dec 16, 2024.

Mission: Buy the cheapest "Laserworld
EL-230RGB" by reachijg DJ City's
customer support at the corner of
Carlotta and Reserve Rds.

Tel: 1300 352 489

The Laserworld EL-230RGB MKII is a
versatile RGB laser system designed for
small venues, private parties, and
mobile DJ events.

It offers a total output power of up to
230 mW, producing seven colors,

including white, through its red (650 nm), green (532 nm), and royal-blue (445 nm) laser modules.

The device features approximately 50 preset patterns—such as layers, tunnels, fences, and waves—that can be controlled via DMX, sound-to-light, or stand-alone modes.

High-speed stepper motors provide scanning speeds of 2-5 kpps with a maximum scan angle of 30°.

Key Specifications:

Total Power: 230 mW

Red: 100 mW / 650 nm

Green: 40 mW / 532 nm

Blue: 90 mW / 445 nm

Beam Specifications: Approximately 4 mm diameter / 1 mrad divergence

Operation Modes: Stand-Alone, Sound-to-Light, DMX

Laser Class: 3B

Dimensions: 205 x 145 x 75 mm

Weight: 2.0 kg

In Australia, the Laserworld EL-230RGB MKII is available through DJ City, a reputable retailer specializing in DJ and lighting equipment. You can find more

information and purchase the product on their website:

For a visual overview and demonstration of the Laserworld EL-230RGB MKII's capabilities, you might find the following product video helpful:

Youtube EL-230RGB 6.9 > 300

[https://youtu.be/rq90po04zfM?
si=HtBOBRM_LGArBipG](https://youtu.be/rq90po04zfM?si=HtBOBRM_LGArBipG)

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Sent by you:

- How does DMX connect and synchronise networks of Lasers in different locations ?

DMX (Digital Multiplex) is a standard protocol used to control lighting and effects, including lasers, in entertainment and stage productions.

Here's how it connects and synchronizes networks of lasers in different locations:

- **DMX Controllers:** A DMX controller sends out control signals to various devices, including lasers. These controllers can be hardware-based (like a lighting console) or software-based (running on a computer).
- **DMX Cables:** Lasers and other DMX-compatible devices are connected using DMX cables. These cables

carry the control signals from the controller to each device in the network. The standard DMX cable uses a 3-pin or 5-pin XLR connector¹.

- **Addressing:** Each laser or device in the DMX network is assigned a unique address. This allows the controller to send specific commands to individual devices or groups of devices. The addressing ensures that each laser performs the correct actions at the right time¹.
- **Master-Slave Configuration:** In some setups, one laser can be designated as the “master,” and others as “slaves.” The master laser receives the DMX signal and then synchronizes the slave lasers to

perform the same actions. This is useful for creating synchronized light shows across multiple locations¹.

- **ShowNET and ILDA:** Advanced systems like ShowNET can store custom ILDA (International Laser Display Association) files on an internal SD card. These files can be triggered via DMX, allowing for complex and synchronized laser shows².
- **Wireless DMX:** For lasers in different physical locations, wireless DMX systems can be used. These systems transmit DMX signals wirelessly, reducing the need for long cable runs and making it easier to synchronize devices over larger

areas3.

By using these methods, DMX can effectively control and synchronize networks of lasers, creating impressive and coordinated light shows.

If you have any specific setup or scenario in mind, feel free to share, and I can provide more detailed guidance!