

# ETC User Quick Guide

## CEM3

---

### Overview

This manual is designed to introduce you to the CEM3 user interface and the primary features and functions available to you in your CEM3 power control system. The full CEM3 User Manual is available on the web at [etcconnect.com/cem3](http://etcconnect.com/cem3).

### CEM3 User Interface

---



**WARNING: RISK OF DEATH BY ELECTRIC SHOCK!** Power down the rack before removing the CEM3. Only remove modules with the rack powered off, following these instructions or as instructed by ETC Technical Services.

**AVERTISSEMENT : RISQUE DE MORT PAR ÉLECTROCUTION!** Mettez le rack de gradation hors tension avant de retirer le CEM3. Ne retirez les modules de gradation ou de contrôle que lorsque le rack est éteint, en suivant ces instructions ou selon les instructions des services techniques ETC.

Removing modules exposes the phase bars inside of the rack. When the rack is powered on, phase voltages inside the rack can cause injury or death. When the rack is powered on, modules should only be removed by qualified installers or electricians.



**WARNING: RISK OF DEATH BY ELECTRIC SHOCK!** Failure to disconnect all power to the dimmer rack before working inside could result in serious injury or death.

**AVERTISSEMENT : RISQUE DE MORT PAR ÉLECTROCUTION!** Travailler à l'intérieur du rack de gradation sans avoir déconnecté le courant peut entraîner des blessures graves, voire mortelles.

De-energize main feed to the dimmer rack and follow appropriate Lockout/Tagout procedures as mandated by NFPA 70E. It is important to note that electrical equipment such as dimmer racks can present an arc flash hazard if improperly serviced. This is due to the high amounts of short-circuit current available on the electrical supply to this equipment. Any work must comply with OSHA Safe Working Practices.



**Corporate Headquarters** ■ Middleton, WI, USA | +1 608 831 4116  
**Global Offices** ■ London, UK | Rome, IT | Holzkirchen, DE | Paris, FR | Hong Kong | Dubai, UAE | Singapore  
New York, NY | Orlando, FL | Los Angeles, CA | Austin, TX

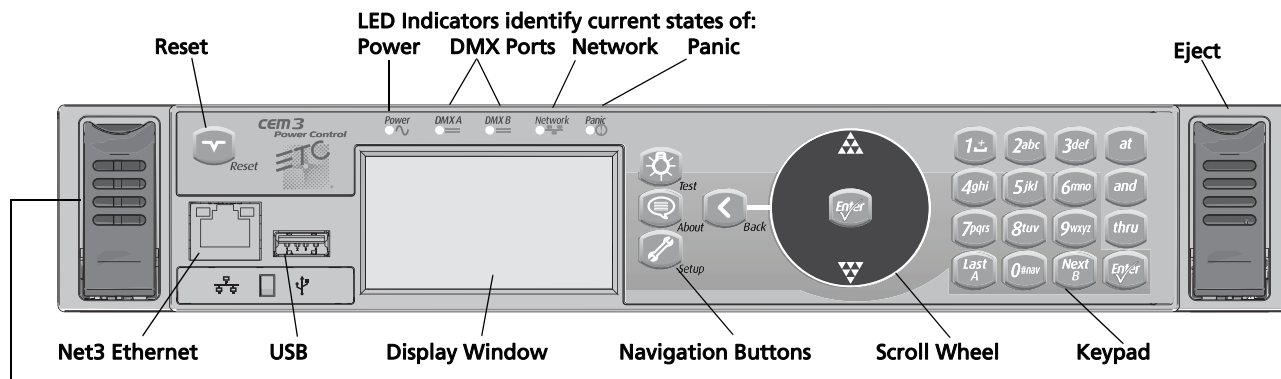
**Web** [etcconnect.com](http://etcconnect.com) | **Support** [support.etcconnect.com](http://support.etcconnect.com) | **Contact** [etcconnect.com/contactETC](http://etcconnect.com/contactETC)

© 2021 Electronic Theatre Controls, Inc. | Trademark and patent info: [etcconnect.com/ip](http://etcconnect.com/ip)

Product information and specifications subject to change. ETC intends this document to be provided in its entirety.  
7140M2200 Rev E Released 2021-03

# ETC User Quick Guide

## CEM3 User Quick Guide






**Eject:** Pull both levers forward from the top edge. Grasp and pull to remove face panel.

### Navigation

Use the scroll wheel and up/down arrows to move the selection cursor on any menu screen until the desired item is highlighted.

- 1: Press **[Enter]** to select the highlighted item.
- 2: Use keypad to enter values and select dimmers or ranges of dimmers.
- 3: Press **[Back]** to return to the previous screen on any menu.

### Navigation Buttons

<b>Test (Live Control)</b> 	<b>About</b> 	<b>Setup</b> 
Allows you to <ul style="list-style-type: none"> <li>• Set Levels</li> <li>• Dimmer Check</li> <li>• Activate Presets and Sequences</li> </ul>	Access information on <ul style="list-style-type: none"> <li>• Dimmers</li> <li>• Rack</li> <li>• Control Sources</li> <li>• Errors</li> <li>• Current CEM3 software version</li> </ul>	Commonly used features include <ul style="list-style-type: none"> <li>• Change dimmer, rack, and network settings</li> <li>• Enable control ports</li> <li>• Change Operating Mode</li> <li>• Upgrade/Backup (Media)</li> <li>• Change Curve and Firing Mode</li> </ul>

# ETC User Quick Guide

## CEM3 User Quick Guide

---

### Quick Setup

Navigate to **[Setup]>Quick Setup** and press **[Enter]**. Quick Setup uses four steps to set up a basic configuration. Select **Next** after each step to proceed to the next step.

- **Module:** Select **Module** to change the module type, if needed.
- **Circuit:** Select **Renumbering** if you want to renumber the rack, and select the balance type (**Straight**, **1-Phase**, or **3-Phase**). The CEM3 processor defaults to the balance type that is appropriate for the detected power source, but you can change this value if desired.
  - **Straight** results in circuit numbering that proceeds sequentially straight through the entire rack.
  - **1-Phase** or **3-Phase** results in circuit numbering that distributes the circuits evenly across the different power phases so that neighboring circuits do not place an uneven load on any phase.
- **Dimmer Double:** Set whether the rack will use dimmer doubling. You can also set a DMX offset or sACN offset in this step. This option is available only on 120 V SR and SP type racks.
- **Patch:** Select the patching mode to automatically patch dimmers:
  - **Simple:** This mode patches dimmers to addresses sequentially based on a start address. When using this mode, each dimmer is patched simultaneously to DMX A, DMX B, and sACN with a single address.
  - **Independent:** This mode allows a port-by-port assignment of separate start addresses for DMX A, DMX B, and sACN. In addition, dimmer-doubled start addresses can also be assigned per port.
  - **Universe Split:** This mode is typically used in racks where DMX universes end mid-rack. DMX A is patched through the end of the universe with DMX B unpatched until DMX A runs out. When sACN runs to the end of a universe, the rack automatically patches the next dimmer to address 1 of the next available universe.

At the end of the Quick Setup, the system will prompt you to confirm that you want to save this new configuration. Select **OK** to save the configuration or **Abort** to discard it.

### Dimmer Setup

Navigate to **[Setup]>Dimmers** and press **[Enter]** to access dimmer setup. A default module type is created at the initial rack setup based on rack type and voltage. A single module or a range of multiple modules can be modified in dimmer setup.

#### Navigating Dimmer Setup

The circuit number that is assigned to the location displays at the top of the screen. Often the circuit number matches a label placed at the outlets in installed systems. This information will remain at the top of the screen as you scroll.

To select a dimmer or range of dimmers:

- 1: Scroll through dimmers to find the appropriate circuit number or use the number pad to select the dimmer, and then press **[Enter]**.
- 2: Press **[and]** or **[thru]** to choose a range of dimmers, if needed. Press **[Enter]**.

# ETC User Quick Guide

## CEM3 User Quick Guide

---

### Setting the Module Type

For many installed and touring systems, all dimmer modules are of the same type. However, if your rack has a mixture of module types, you will need to configure them on a one-by-one basis.

- 1: Navigate to **[Setup]>Circuit Assignment>Edit Circuit Layout** and press **[Enter]**.
- 2: Use the scroll wheel to select and edit the module types based on their position in the rack.

### Setting the Control Mode

The control mode of a circuit defines how it controls input. The most common modes are **Dimmable** (circuit will act as a regular dimmer) and **Switched** (suitable for connecting switched loads to moving lights). When in dimmable mode, curve settings also become available.

- 1: Navigate to **[Setup]>Dimmers>Control** and press **[Enter]**.
- 2: Use the scroll wheel to select the mode you want.
- 3: Press **[Enter]**.



**Note:** Available *Firing* and *Control* modes are limited by module type.

---

### Patch

Patching allows you to assign input sources and circuit numbers to dimmers. There are two ways to patch dimmers in CEM3: manually or automatically.

#### Manual Patching

Navigate to **[Setup]>Patching** and press **[Enter]** to access manual patching for DMX or sACN addresses. Addresses are available for each input port in the dimmer setup display. Patching a dimmer in this display limits you to the assignment of data addresses one dimmer at a time.

#### Automatic Patching

Patch dimmers automatically by using the Quick Setup utility (see [Quick Setup](#) on [page 3](#)).

### Network Setup

Navigate to **[Setup]>Network** and press **[Enter]** to access the three network setup options:

- **Link Local:** An address is obtained locally to allow communication between the racks with no user setup. Choose **Link Local** if you're working in a touring system where equipment moves around frequently.
- **DHCP:** Acquires an IP address from a DHCP server on the network. If the rack is unable to get an address from DHCP, it will get an address from **Link Local**. Choose **DHCP** if you're working in a system with a DHCP server (for example, an Eos<sup>®</sup> console).
- **Custom:** Allows a user to manually enter the IP, Subnet, and Gateway addresses. ETC products use a 10.101.xxx.yyy address scheme, where *x* varies by product line and *y* is an incremental value.

Network Setup	
Type:	[Custom]
IP: [	10.101.101.101]
SN: [	255.55.0.0 ]
GW: [	10.101.101.101]
[Abort]	[Commit]

# ETC User Quick Guide

## CEM3 User Quick Guide

### Dimmer Set/Overrides

This screen allows for the setting of levels for dimmers, dimmer check, and access to the preset function.

#### Setting Levels

**Set Local Levels** and **Set System Levels** allow you to set a dimmer or a range of dimmers to specified levels.

- 1: Navigate to **[Test]>Set Local Levels** or **[Test]>Set System Levels** and press **[Enter]**.
- 2: If the rack has been configured with more than one space, select the appropriate space and select **OK**.
- 3: Select a dimmer by entering the number.
- 4: To select a range of dimmers, use the **[thru]** and **[and]** buttons.
- 5: Press **[at%]**.
- 6: Set a level by entering the number or scrolling with the scroll wheel. 0–100 is the valid range. 100 will display as "FL".
- 7: Press **[Enter]**.

#### Dimmer Check

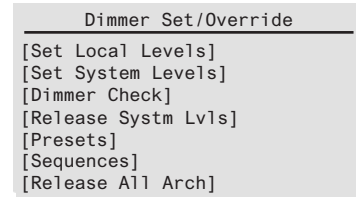
**Dimmer Check** allows you to quickly step through all lugs or all circuits in a space to test their output at a given percentage. This can be useful when testing out a system.

- 1: Navigate to **[Test]>Dimmer Check** and press **[Enter]**.
- 2: If necessary, press **[Enter]** to set whether to run the dimmer check by lug or by circuit.
- 3: Navigate to **Lug** or **Ckt**.
- 4: Select a dimmer by entering the number or using the scroll wheel.
- 5: Press **[Enter]**.
- 6: Set a level by entering the number or using the scroll wheel.
- 7: Press **[Enter]**.
- 8: Use **Prev** or **Next** to step through the dimmers.

Dimmer check levels will be released when you exit the display.

#### Release System Lvl

This display will release any set levels. The screen will display for a second and then will return to the main **Dimmer Set/Override** display.



# ETC User Quick Guide

## CEM3 User Quick Guide

---

### Presets

You can record and play back up to 64 preset looks for each space.

- 1: To record a preset, set the desired output levels for any dimmers in your rack using any method.
- 2: Navigate to **[Test]>Presets** and press **[Enter]**.
- 3: If the rack has been configured with more than one space, select the appropriate space and select **OK**.
- 4: Select the preset number that you want to record, and then select **Snapshot/Record** to record the current look. You can also change the **Fade Time(s)** value, if desired (default is 2 seconds).
- 5: Select **Activate** to turn on the preset, or **Deactivate** to turn off the preset.

### Configuration Backup and Restore

There is a USB key slot on the front of the CEM3. Use this to save the rack configuration to a USB drive for safekeeping and to reload the configuration if needed.

You can also back up and restore CEM3 rack configuration using an FTP server or a networked computer. See the CEM3 User Manual at [etconnect.com/cem3](http://etconnect.com/cem3) for details.

#### Saving a Configuration to USB

- 1: Navigate to **[Setup]>File Operations** and press **[Enter]**.
- 2: Scroll to **Save to USB**.
- 3: Press **[Enter]**. A default configuration file name displays.
- 4: To change the name of the configuration file, use the scroll wheel to navigate to the file name, and then use the keypad to modify it.
- 5: Navigate to **[OK]** and press **[Enter]**. The file is saved to the USB drive.

#### Loading a Configuration from USB

The configuration must be in the root directory of the USB device.

- 1: Navigate to **[Setup]>File Operations** and press **[Enter]**.
- 2: Scroll to **Load from USB**.
- 3: Press **[Enter]**.

# ETC User Quick Guide

## CEM3 User Quick Guide

---

### Controller Replacement

---



**WARNING:** RISK OF DEATH BY ELECTRIC SHOCK! Power down the rack before removing the CEM3. Only remove modules with the rack powered off, following these instructions or as instructed by ETC Technical Services.

**AVERTISSEMENT :** RISQUE DE MORT PAR ÉLECTROCUTION! Mettez le rack de gradation hors tension avant de retirer le CEM3. Ne retirez les modules de gradation ou de contrôle que lorsque le rack est éteint, en suivant ces instructions ou selon les instructions des services techniques ETC.

Removing modules exposes the phase bars inside of the rack. When the rack is powered on, phase voltages inside the rack can cause injury or death. When the rack is powered on, modules should only be removed by qualified installers or electricians.

---



**WARNING:** RISK OF DEATH BY ELECTRIC SHOCK! Failure to disconnect all power to the dimmer rack before working inside could result in serious injury or death.

**AVERTISSEMENT :** RISQUE DE MORT PAR ÉLECTROCUTION! Travailler à l'intérieur du rack de gradation sans avoir déconnecté le courant peut entraîner des blessures graves, voire mortelles.

De-energize main feed to the dimmer rack and follow appropriate Lockout/Tagout procedures as mandated by NFPA 70E. It is important to note that electrical equipment such as dimmer racks can present an arc flash hazard if improperly serviced. This is due to the high amounts of short-circuit current available on the electrical supply to this equipment. Any work must comply with OSHA Safe Working Practices.

---

The configuration for the CEM3 is automatically stored in two places: the backplane of the rack and in the CEM3.

- If you have to replace the CEM3, you can simply pull out the CEM3 and insert the new one.
- If you have to replace the backplane as well, you can reload the configuration from a USB drive (see [Configuration Backup and Restore](#) above).

### Panic

Panic allows dimmers to be turned on via a contact closure. Panic is generally configured at installation. If you need to change the dimmers in the panic preset, navigate to **[Setup]>Dimmers**, and modify the **Allow in Panic** option for the appropriate dimmers.

Navigate to **[Setup]>Panic** and press **[Enter]** to access the **Panic Setup** screen. In this screen, you can set the panic parameters and record a panic look.

When panic is active, the red panic LED on the front of the CEM3 is lit and 'Panic Active' displays.

# ETC User Quick Guide

## CEM3 User Quick Guide

---

### Service and Troubleshooting

#### General Maintenance

- Make regular backups of your configuration to a USB drive or over the network (see [Configuration Backup and Restore](#) on [page 6](#)).
- Your rack has filters fitted into the door. Every 6 months or as needed, remove and clean the filters with a vacuum cleaner.
- Do NOT use water or chemical cleaners in your rack or modules.

#### Troubleshooting

For assistance, try the ETC Web site at [etconnect.com](http://etconnect.com) or the Dimming and Networking Systems page at [community.etconnect.com](http://community.etconnect.com). If these resources are insufficient, contact ETC Technical Services directly (see contact information at bottom of first page). Emergency service is available from all ETC offices outside of normal business hours.

Issue or Error Message	Action
Display of the CEM3 is not lit up	<ul style="list-style-type: none"><li>• Check that power is connected to the rack. If the CEM3 is in an installed rack, check that the power disconnect is turned on. If the CEM3 is in a portable pack, check that power is connected and turned on.</li><li>• Check that the CEM3 is fully seated in the rack. The black latches on either side of the CEM3 should be pushed up and the CEM3 should be flush with the front of the rack.</li></ul>
Dimmers not turning on	<ul style="list-style-type: none"><li>• Check that there is power to the CEM3 as described above.</li><li>• Check that your control source (Network or DMX) connections are OK.</li><li>• Check for an error message on the CEM3 display.</li></ul>
Error: Fan Fail	Check that the fan is running and clear of obstructions.
Error: CPU Overtemp	Check the temperature in the dimmer room.
Error: Voltage Too High or Too Low	Check the incoming power supply to the rack.
Error: Dimmer Overtemp	Check that the specified dimmer is not overloaded and check cooling.