

**CHKISTIE**°

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For the most current technical documentation and office contact information, visit https://www.christiedigital.com/.

#### Warranty

Products are warranted under Christie's standard limited warranty, the details of which are available at https://www.christiedigital.com/help-center/warranties/ or by contacting your Christie dealer or Christie.

#### REGULATORY

The product has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the product is operated in a commercial environment. The product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of the product in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at the user's own expense. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

CAN ICES-3 (A) / NMB-3 (A)

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#### **ENVIRONMENTAL**



The product is designed and manufactured with high-quality materials and components some of which can be recycled and reused. This symbol means electrical and electronic equipment, at their end-of-life, should be disposed of separately from regular waste. Please dispose of the product appropriately and according to local regulations. In the European Union, separate collection systems are for used electrical and electronic products.

If printing this document, consider printing only the pages you need and select the double-sided option.

Please help us to conserve the environment we live in!

#### Notation

Learn the hazard and information symbols used in the product documentation.



Danger messages indicate a hazardous situation which, if not avoided, results in death or serious injury.



Warning messages indicate a hazardous situation which, if not avoided, could result in death or serious injury.



Caution messages indicate a hazardous situation which, if not avoided, could result in minor or moderate injury.



Notice messages indicate a hazardous situation which, if not avoided, may result in equipment or property damage.



Information messages provide additional information, emphasize or provide a useful tip.

#### **CHKISTIE**°

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# Important safety guidelines

To prevent personal injury and to protect the device from damage, read and follow these safety precautions.

## Installation safety and warning guidelines

Read all safety and warning guidelines before installing Christie Link.



Warning! If not avoided, the following could result in death or serious injury.

- SHOCK AND FIRE HAZARD! Keep coaxial cables within the building installation, never routing them to external sites.
- LASER RADIATION HAZARD! Do not exceed a Class 1/1M laser radiation rating for optical module.

### **AC** power precautions

Learn the safety precautions related to AC power.



Caution! If not avoided, the following could result in minor or moderate injury.

- SHOCK HAZARD! Disconnect the product from AC before installing, moving, servicing, cleaning, removing components, or opening any enclosure.
- SHOCK HAZARD! Do not attempt operation if the AC supply is not within the specified voltage and current, as specified on the license label.
- FIRE HAZARD! Do not use a power cord, harness, or cable that appears damaged.
- FIRE AND SHOCK HAZARD! Do not attempt operation unless the power cord, power socket, and power plug meet the appropriate local rating standards.

### **Product labels**

Learn about the labels that may be used on the product. Labels on your product may be yellow or black and white.

#### **General hazards**

Hazard warnings also apply to accessories once they are installed in a Christie product connected to power.



#### Fire and Shock Hazard



To prevent fire or shock hazards, do not expose this product to rain or moisture.

Do not alter the power plug, overload the power outlet, or use it with extension cords.

Do not remove the product enclosure.

Only Christie qualified technicians are authorized to service the product.

#### **Electrical Hazard**



Risk of electric shock.

Do not remove the product enclosure.

Only Christie qualified technicians are authorized to service the product.



Warning! If not avoided, the following could result in death or serious injury.



Electrocution hazard. To avoid personal injury, always disconnect all power sources before performing maintenance or service procedures.



**Notice.** If not avoided, the following could result in property damage.



General hazard.

## **Mandatory action**



**Caution!** If not avoided, the following could result in minor or moderate injury.



SHOCK HAZARD! Disconnect all power sources before performing maintenance or service procedures.



Consult the service manual.

# Introduction

This manual is intended for installers and operators of the Christie Link fiber optic system. For complete Christie Link product documentation and technical support, go to www.christiedigital.com.

# What's new in the guide?

The following updates have been made to the guide.

- Moved the *safety guidelines* (on page 5) to a separate chapter and moved it before the Introduction chapter.
- Updated the organization of the Introduction chapter and added topics for *viewing Christie University product training* (on page 8) and *Technical support* (on page 9).
- Updating the topics in the Signal connectivity specifications (on page 19) chapter to provide links to the TruLife+ Supported Video Formats technical reference (P/N: 020-104081-XX) for the video format tables and information.

### **Product overview**

The Christie Link provides a fully integrated fiber solution for long range video transport.

The Christie Link is intended to be used in conjunction with fiber optic cabling/module options and two option cards, the CFIC or HBMIC to convert electrical signals to optical for transport across long distances.

### **Key features**

Understand the important features of the Christie Link.

- Supports HDMI and DisplayPort video input
- · Allows HD to full 4K120Hz workflow
- Supports 3D video
- Includes a status LED
- Built-in keypad control interface
- Web user interface
- Ethernet
- Compatible with QSFP+ (40 Gbps) modules

## List of components

Verify all components were received with the projector.

- Christie Link module
- Power cord
- User manual

For all accessories, refer to the specifications section.

### **Related documentation**

Additional information on this product is available in the following documents.

- Christie Link Product Safety Guide (P/N: 020-102249-XX)
- Christie Link Status System Guide (P/N: 020-02255-XX)
- Christie Link Serial Commands Guide (P/N: 020-102321-XX)

#### **Accessing product documentation**

For installation, setup, and user information, see the product documentation available on the Christie Digital Systems USA Inc. website. Read all instructions before using or servicing this product.

- 1. Access the documentation from the Christie website:
  - Go to this URL: http://bit.ly/2tlHckq or https://www.christiedigital.com/en-us/products/accessories/christie-link-transmitter
  - Scan the QR code using a QR code reader app on a smartphone or tablet.



2. On the product page, switch to the **Downloads** tab.

#### **Viewing Christie University product training videos**

Christie University provides select product training videos that are helpful for understanding and using your product.

To view the available videos for your product:

- 1. Go to Christie University: https://training.christiedigital.com.
- 2. Select I'm a Christie partner or customer.
- 3. Log into your profile.
- 4. Select Catalog.
- 5. Select Videos.
- Select Product Training Videos.



7. Navigate to the folder for your product.

# **Technical support**

Technical support for Christie Enterprise products is available at:

- North and South America: +1-800-221-8025 or Support.Americas@christiedigital.com
- Europe, Middle East, and Africa: +44 (0) 1189 778111 or Support.EMEA@christiedigital.com
- Asia Pacific (support.apac@christiedigital.com):
  - China: +86 10 6561 0240 or tech-supportChina@christiedigital.com
  - India: +91 (80) 6708 9999 or tech-India@christiedigital.com
  - Japan: 81-3-3599-7481
  - Singapore: +65 6877-8737 or tech-Singapore@christiedigital.com
  - South Korea: +82 2 702 1601 or tech-Korea@christiedigital.com

# Installation and setup

Learn how to install, connect, and optimize the settings.

## **Operating environment**

Provides specifications for operating environment.

- 5 cm (2 inch) clearance from front intake
- 7.6 cm (3 inch) clearance from rear exhaust
- Ambient temperature (operating) 5 to 35° C (41 to 95° F) up to 457.2 m (1500 feet)
- Humidity (non-condensing) 10 to 80%
- Operating altitude: 3048 m (10,000 feet) maximum at 5 to 25° C (41 to 95° F) ambient

## **System overview**

Christie Link transports DisplayPort or HDMI video signals over long distances through fiber optic cabling using the Christie video over fiber data standard.



## **Christie Link setup**

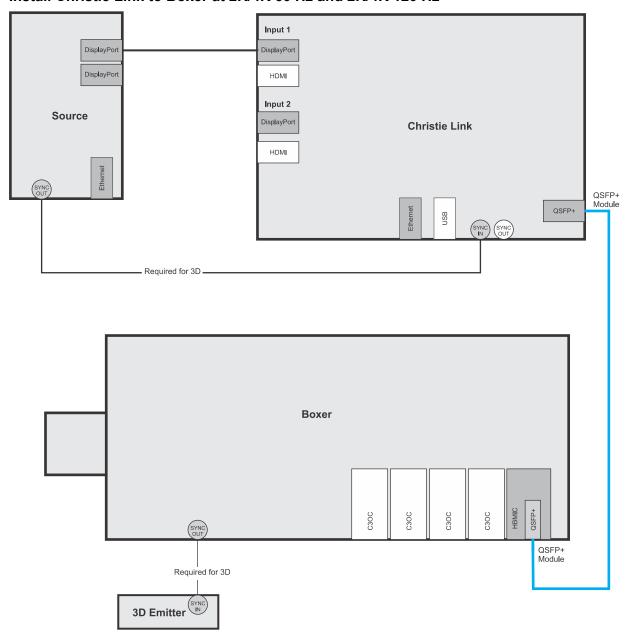
Understand the setup configuration.

- 1. Connect the DisplayPort or HDMI video source directly to the Christie Link module using standard cabling.
- 2. Configure the Christie Link module and Christie projector with the appropriate QSFP+ modules.
- 3. Connect the Christie Link module to a Christie projector using a qualified fiber optic cable.

# **Boxer connection diagram**

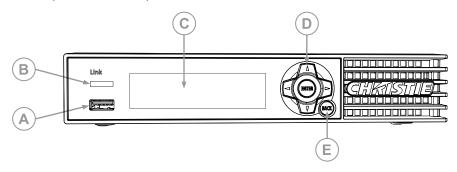
The following solutions are for Boxer® installations.

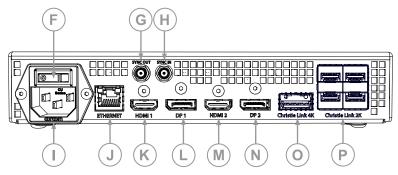
#### Install Christie Link to Boxer at 2K/4K 60 Hz and 2K/4K 120 Hz



# **Christie Link components**

Identify the main components of Christie Link.

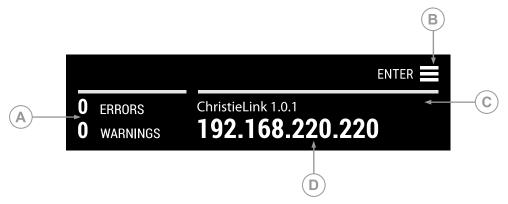




ID	Component	Description	
Α	USB port	Accepts USB sticks for upgrade and interrogation.	
В	LED status indicator	Indicates device status.	
С	Display panel	Provides more detailed status and menu options/settings.	
D	Keypad	Use the keypad to navigate through the menu options.	
Е	Back button	Exits the current menu option.	
F	AC power switch	Powers on and off the unit.	
G	Sync out (SMA connector)	Transmits the 3D sync to another Christie Link.	
Н	Sync in (SMA connector)	Accepts a 3D sync from the video source.	
I	AC power receptacle	Plug in an appropriately rated line cord.	
J	Ethernet	Accepts an Ethernet cable connection.	
K	HDMI 1	High-Definition Multimedia Interface cable connection 1	
L	DP1	Display Port connection 1.	
М	HDMI 2	High-Definition Multimedia Interface cable connection 2	
N	DP2	Display Port connection 2.	
0	Christie Link 4K	Use this port to connect to the HBMIC option card for up to 4K resolution at 120 Hz.	
Р	Christie Link 2K	Reserved for future use.	

## **Christie Link dashboard**

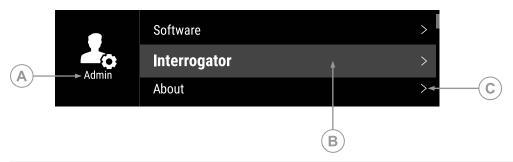
Identify the main components of the dashboard on the display panel. The Christie Link module dashboard is similar to the web dashboard. Users can configure and adjust settings from either dashboard.



ID	Description	
Α	Notifies users of errors and warnings.	
В	Indicates you must select <b>Enter</b> to access the menu.	
С	C Displays the product name and software version.	
D	Displays the IP address.	

## **Christie Link menu**

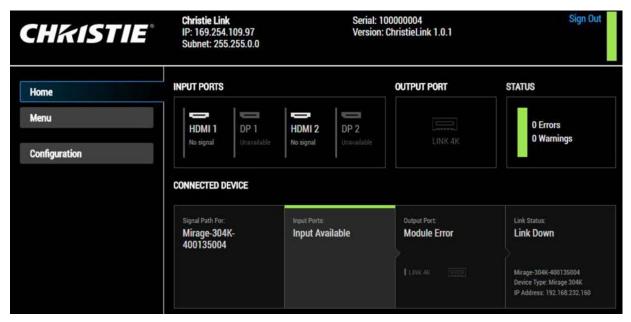
Identify the main components of the menu on the display panel.



ID	Description	
Α	Indicates the sub-menu.	
В	Highlights the menu item in the list of options.	
С	Indicates another level of sub-menu options.	

## **Christie Link web dashboard**

Identify the main components of the web dashboard.



**Home** is the system dashboard showing all the inputs and outputs connected to Christie Link.

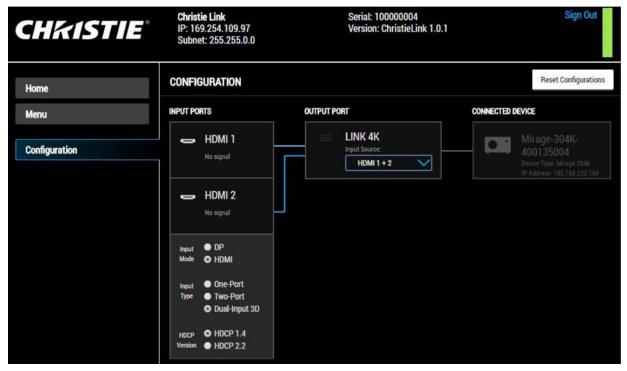
**Connected Devices** shows the current signal paths and can be used to diagnose signal path errors, such as the module is broken or input is not available.

The **Status** light corresponds to the status light in the top right on the Christie Link module.



The **Menu** dashboard allows you access to **Network Settings**, **System Settings**, **Admin**, and **Status settings**.





**Configuration** settings allow you to see the visual input to output mapping and dynamically change the input mode, input type and where video is routed to. If a device is connected, it appears inactive until a connection is restored. To clear the cached devices, select **Reset Configurations** 

## **Christie Link LED status indicators**

Identify the LED state colors and meaning.

If both a warning and error exist, the LED status indicates the red error status.

LED	State	Description	
Blue	Flashing	System is starting up.	
Green	Solid	Power is on. System status is OK.	
Yellow	Flashing	Warning a problem exists with the system but it is still functioning.	
Red	Flashing	A critical error exists preventing the system from functioning.	
Off		The AC power is off.	

## **Christie Link input types**

Learn about the different input type options.

#### **One-Port**

Users can select the input type (DisplayPort or HDMI) for each individual output port. Options include selecting input one, input two, or multi-stream. In multi-stream mode, both inputs are sent to the connected projector and the user can select which input stream to run. The videos are not combined.

#### **Two-Port**

In Two-Port mode, input one and input two are combined into a single video. Input one is responsible for the left section of the screen, and input two is responsible for the right section of the screen.

When two-port mode is selected, no options are available for the output modules. It only displays HDMI  $1\ \&\ 2$  or DisplayPort  $1\ \&\ 2$ .

#### **Dual Input 3D**

Users are not required to select the inputs to each individual output port. The two input signals are always combined. Input one is responsible for the left eye and input two is responsible for the right eye.

When dual input 3D is selected, no options are available for the output modules. It only displays HDMI 1 & 2 or DisplayPort 1 & 2.

## **Connecting Christie Link to the projector**

Configure the connection between Christie Link and the projector.

- 1. From the projector display panel, select **Configuration** > **Input Settings**.
- Navigate to Input Mode and select **HDMI** or **DP**.
   DP (DisplayPort) is the default.
- 3. To save the selection, select **Enter**.
- 4. Navigate to Input Type and select **One-Port**, **Two-Port**, or **Dual-Input 3D**.
- 5. To save the selection, select **Enter**.
- 6. Navigate to the Output Devices and select the source.

  The input type (One-Port, Two-Port, or Dual-Input 3D) determines the available options.
- 7. To save the selection, select **Enter**.

  If the projector is connected and detected, only the required source selections are available.

# **Configuring system settings**

Learn how to configure the system settings.

## **Configuring Christie Link network settings**

You can set the IP address and device name of the Christie Link device.



You cannot change the IP settings using the web interface.

- 1. Select Menu > Communications > Network Settings.
- 2. Select IP Settings.
- 3. Select Edit.
- 4. Select **DHCP** or **Static**
- 5. Use the up and down keys to enter the IP address of Christie Link.
- 6. Select Enter.
- 7. Select Device Name.
- 8. Use the up and down keys to enter the name of Christie Link.
- 9. Select Enter.

## **Setting the date**

Configure the date on Christie Link.

- 1. Select Menu > System Settings > Date & Time.
- 2. Select Date.
- 3. Use the up and down keys to adjust the year (YYYY), month (MM), and day (DD).

# **Setting the time**

Configure the time on Christie Link.

- 1. Select Menu > System Settings > Date & Time.
- 2. Select Time.
- 3. Use the up and down keys to adjust the hour (HH), minutes (MM), and seconds (SS).

## Informing the source of signal preferences

Configure Christie Link to automatically inform the video source of the preferred signal formats.

- If you need a specific frame rate, from the display panel, select MENU > Configuration > INPUT PORTS > EDID Timing.
- Select the required EDID timing and select **Enter**.
   Hz is the default EDID timing.

## Changing the user account password

The user account password limits access to the functionality on the web interface to authorized users. Christie recommends changing the default user account password.



This feature is only available on the web interface.

- 1. From the home page of the web interface, select **MENU** > **Admin** > **Remote Password**.
- 2. Select **Current Password** and enter your current password.
- Select New Password and enter your new password.
   Create your password using 4 to 32 characters. The password can be any combination of letters, numbers, and symbols (ASCII-standard characters only). Accents and accented characters are not supported.
- 4. Select **Confirm** and re-enter your new password.
- 5. Select Apply.

### Accessing the generated user account password

If the user account password is not available, the generated password can be used to access the functionality on the web interface.

Note the following about the generated user account password:

- The generated password can be used to change the user account password.
- Every time the user account password is updated, the generated password is changed.
- If the projector defaults are reset using the **Reset Factory Defaults** feature, the user account password is reset.



This feature is accessed from the display panel on the projector and the on-screen display.

- 1. From the display panel, select **MENU** > **Admin**.
- 2. Select **Generated password**.

The generated password is displayed in this field.

# Signal connectivity specifications

Identify the signal connectivity specifications for Christie Link.

The list of formats listed below are not exhaustive and other formats may be supported. For more information, contact Christie Technical Support.

### **HDMI 2.0 video formats**

The HDMI 2.0 interface supports HDCP 1.x and 2.2.

For supported video formats for Christie Link, see *TruLife+ Supported Video Formats technical reference (P/N: 020-104081-XX)*.

## **DisplayPort video formats**

The DisplayPort 1.2 interface supports HDCP 1.x.

For supported video formats for Christie Link, see *TruLife+ Supported Video Formats technical reference (P/N: 020-104081-XX)*.

## **Dual-input 3D**

Identify the video formats for the Dual-input 3D.

One set of cables is required for left-eye and another set is required for right-eye. The output rate depends on the input rate (per eye) as follows:

- 24 Hz signals are triple-flashed resulting in an output rate of 144 Hz.
- 25 Hz signals are triple-flashed resulting in an output rate of 150 Hz.
- 30 Hz signals are double-flashed resulting in an output rate of 120 Hz.
- 60 Hz signals are single-flashed resulting in an output rate of native 120 Hz.

For supported video formats for Christie Link, see *TruLife+ Supported Video Formats technical reference (P/N: 020-104081-XX)*.

# Diagnostic tools and upgrading Christie Link

Follow these procedures to help with upgrading and diagnosing issues with Christie Link.

## **Viewing Christie Link status**

Alarms contain information about the values of the items operating in normal range, warnings, and errors that can be reported by the status system of Christie Link.

- From the display panel, select **Status**.
   You can also view the statuses from **MENU** > **STATUS**.
- 2. Scroll to the status category you want to view and select it.

## **Upgrading the Christie Link software**

When a new version of the software is released, the Christie Link projector must be upgraded.

Christie recommends backing up your files before installing an upgrade package.

- 1. Download the latest software version from the Christie website:
  - a) Navigate to https://www.christiedigital.com/products/projectors/all-projectors/.
  - b) Select the projector series.
  - c) On the product page, select the model and switch to the **Downloads** tab.
  - d) Expand the Software downloads section.
  - e) Download the software upgrade file.
- 2. If using the display panel to upgrade the software, insert a USB key that contains the software upgrade file.

The USB flash drive must be formatted using the FAT 32 file system.

The upgrade file must be located at the root of the USB key.

- 3. Select MENU > Admin > Software > Upgrade.
- 4. Select an upgrade file.
  - On the projector, select the upgrade file from the root of the USB and select Enter.
  - From the web interface, in the Open dialog, navigate to the file and select Open.
- 5. To automatically restart Christie Link, select **Restart Now**.

If you decide to restart Christie Link at a later date (**Restart Later**), you cannot perform another upgrade until the Christie Link is restarted.

## Running the Christie Link interrogator

The interrogator captures diagnostic information Christie personnel uses to help diagnose and correct any issues.

- 1. If saving the interrogator file to a USB flash drive on the projector, insert a USB flash drive in the USB port on the projector.
  - The USB flash drive must be formatted using the FAT 32 (restricted to key sizes of 32 GB or less) and exFAT file systems.
- 2. Select MENU > Admin > Interrogator.
- 3. Select Run.
  - If on the projector, the interrogator file is stored at the root directory on the USB flash drive.
  - If running Christie Link interrogator from the web interface, a message appears indicating the interrogator file was successfully created.
- From the web interface to download the interrogator file to the computer, select **Download** File.

The interrogator file is downloaded to the default location on the computer.

5. If on the projector, at the completion prompt, select **OK**.

## Restoring factory default settings

Restoring factory settings removes all custom device settings.

Only Christie qualified technicians can reset factory defaults.

- 1. From the display panel, select **MENU** > **Admin** > **Service**.
- 2. Enter the service password.
- 3. Select Reset Factory Defaults.
- 4. At the confirmation prompt, select **Reset**.

# **Christie Link Specifications**

Learn about the product specifications. Due to continuing research, specifications are subject to change without notice.

# **Physical specifications**

Learn the dimensions and weight of the Christie Link.

Description	Dimensions
Size (L x W x H)	285.5 mm x 220.2 mm x 42.8 mm
Weight	1.5 kg
Operating position	Landscape

## **Power requirements**

Learn the power requirements for Christie Link.

Parameter	Requirement
Voltage	100-240 VAC
Current	1.0 A
Line frequency	50/60 Hz
Christie Link module	Connector type: IEC60320-1 C14
Power cord	Connector type: IEC60320-1 C13

### **Accessories**

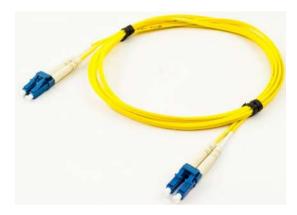
Learn about the accessories available for the Christie Link.

Description	Part number
High Bandwidth Mulit-Input Card (HBMIC)	144-116109-XX
Rack Mounting Shelf	144-128102-XX

# Fiber specifications

The Christie Link accepts the following fiber cable options.

Parameter	Requirement	Description
Connector 1 - Type Connector 1 - Polish	LC UPC	Blue color
Connector 2 - Type Connector 2 - Polish	LC UPC	Blue color
Fiber Mode	9/125 μm	Single-mode yellow cable
Fiber Type	Duplex	
Wavelength	1310 nm	



# Regulatory

This product conforms to the latest regulations and standards related to product safety, environmental, and electromagnetic compatibility (EMC) requirements.

#### **Safety**

- ANSI/UL 60950-1 Information Technology Equipment Safety Part 1: General Requirements
- CAN/CSA C22.2 No. 60950-1
- EN 60950-1
- IEC 60950-1 IEC/EN 60950-1 Information Technology Equipment Safety Part 1: General Requirements

#### **Electro-magnetic compatibility**

#### **Emissions**

- CAN ICES-003 (A)/NMB-003 (A) Information Technology Equipment (Including Digital Apparatus) – Limits and Methods of Measurement
- CISPR 22/EN 55022, Class A
- FCC CFR47, Part 15, Subpart B, Class A Unintentional Radiators

#### **Immunity**

• CISPR 24/EN55024 EMC Requirements – Information Technology Equipment – Immunity Characteristics – Limits and Methods of Measurements

#### **Environmental**

- China Ministry of Information Industry (along with 7 other Government Agencies) Order No.32 (01/2016) on the control of pollution caused by electronic information products, hazardous substances concentration limits (GB/T 26572 2011), and the applicable product marking requirement (SJ/T 11364 2014).
- EU Directive (2011/65/EU) on the restriction of the uses of certain hazardous substances (RoHS) in electrical and electronic equipment and the applicable official amendment(s).
- EU Directive (2012/19/EU) on waste and electrical and electronic equipment (WEEE) and the applicable official amendment(s).
- Regulation (EC) No. 1907/2006 on the registration, evaluation, authorization and restriction of chemicals (REACH) and the applicable official amendment(s).