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Blair et al.

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(54) **CONTROL DEVICE, SYSTEM CONTAINING THE CONTROL DEVICE AND METHOD OF USING THE SAME**

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G05B 15/02	(2006.01)
G03B 21/14	(2006.01)
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F21L 4/04	(2006.01)
G03B 17/00	(2006.01)
H05B 37/02	(2006.01)

(52) **U.S. Cl.**
CPC ***H04L 69/18*** (2013.01); ***F21L 4/04*** (2013.01); ***G02B 26/0816*** (2013.01); ***G03B 17/00*** (2013.01); ***G03B 21/14*** (2013.01); ***G03B 21/208*** (2013.01); ***G05B 15/02*** (2013.01); ***G06F 11/324*** (2013.01); ***H04L 69/08*** (2013.01); ***H05B 37/0245*** (2013.01)

(58) **Field of Classification Search**
None
See application file for complete search history.

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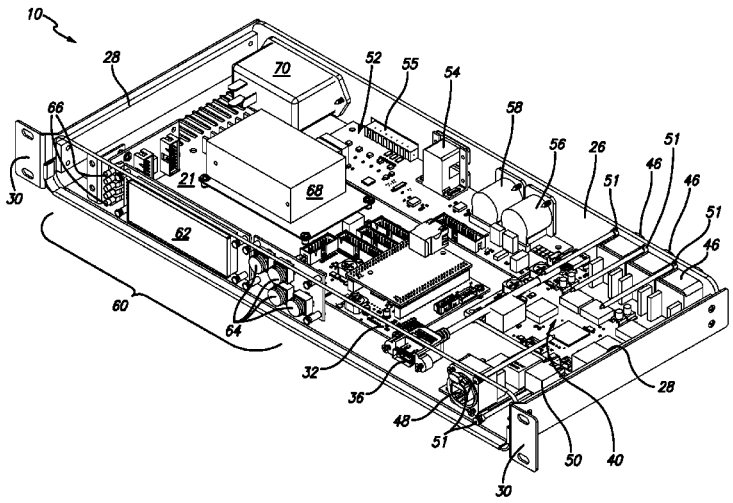
(74) *Attorney, Agent, or Firm* — Downs Rachlin Martin PLLC

(57) **ABSTRACT**

Disclosed is a control device for a serial network protocol controller configured to selectively disable control of a parameter of a controllable media device by at least one channel while the serial network protocol controller continues to transmit the at least one channel to the at least on serial network protocol controllable media device.

31 Claims, 7 Drawing Sheets



Related U.S. Application Data

(60) Provisional application No. 61/707,761, filed on Sep. 28, 2012, provisional application No. 61/802,082, filed on Mar. 15, 2013.

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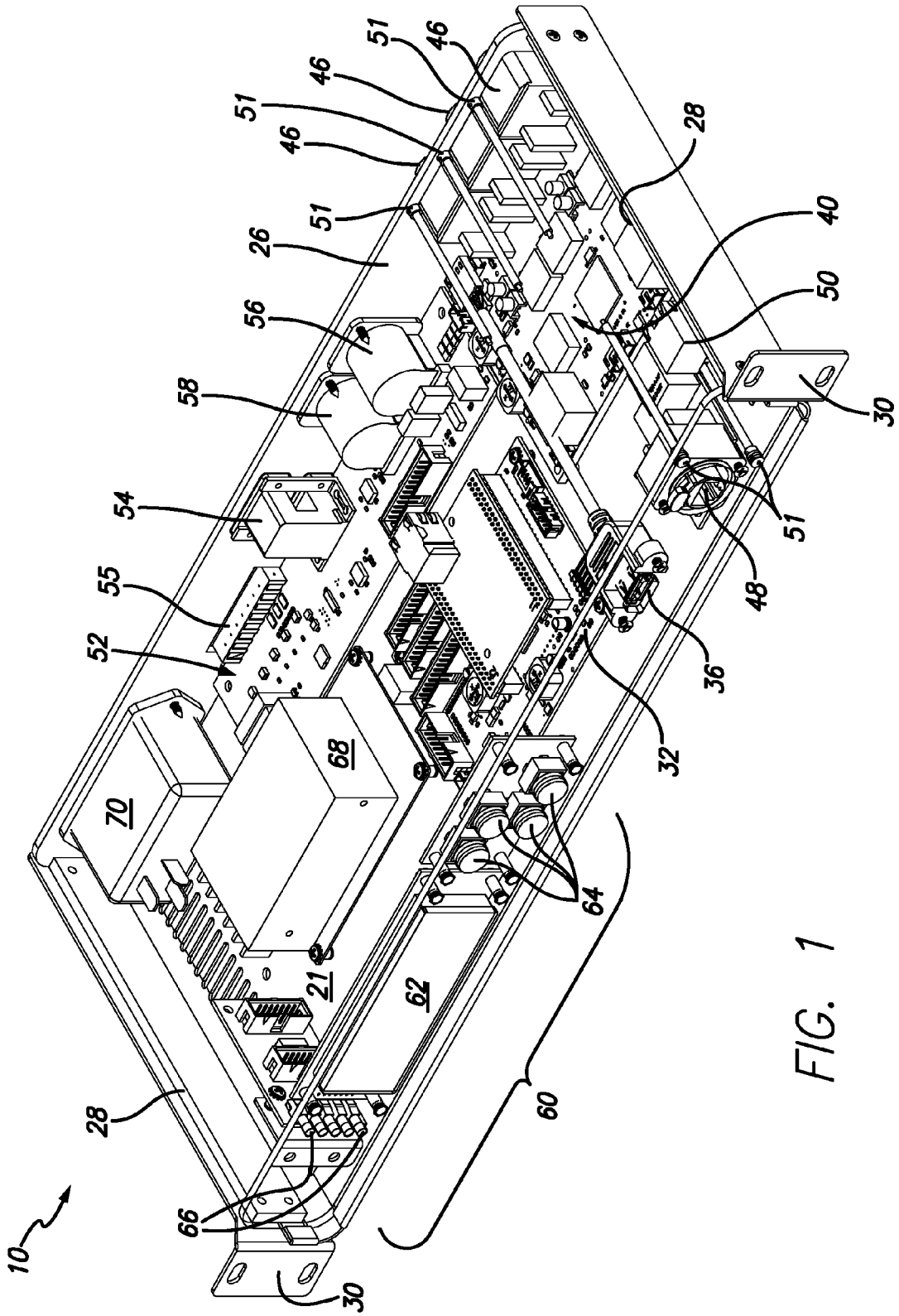
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FIG. 1

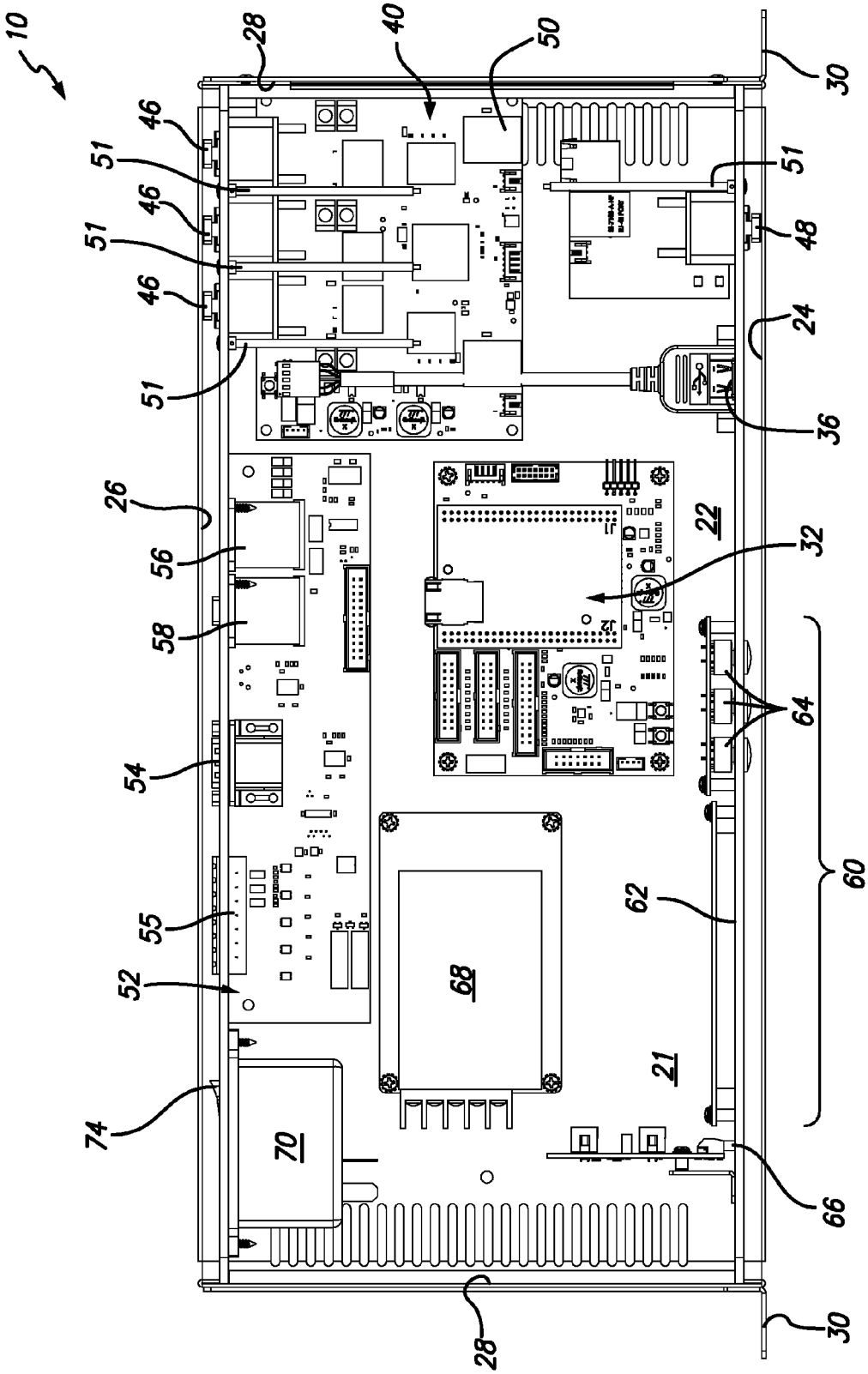
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FIG. 2

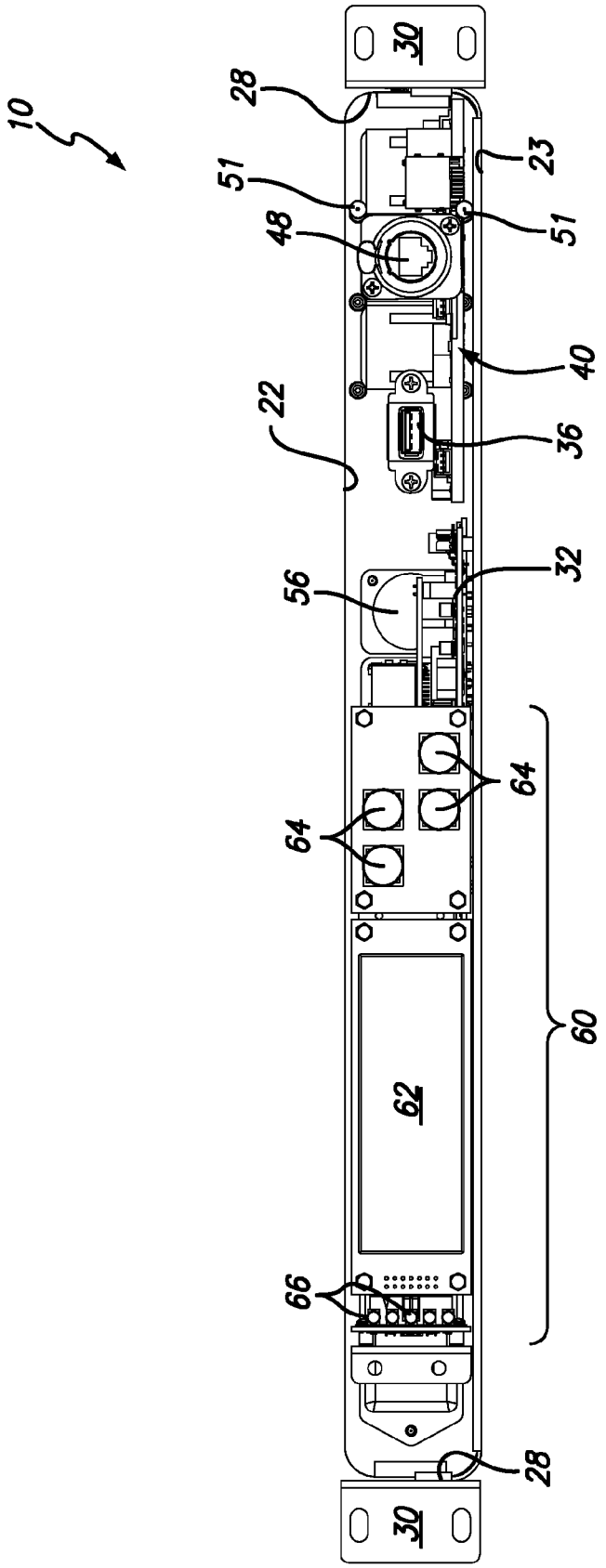


FIG. 3

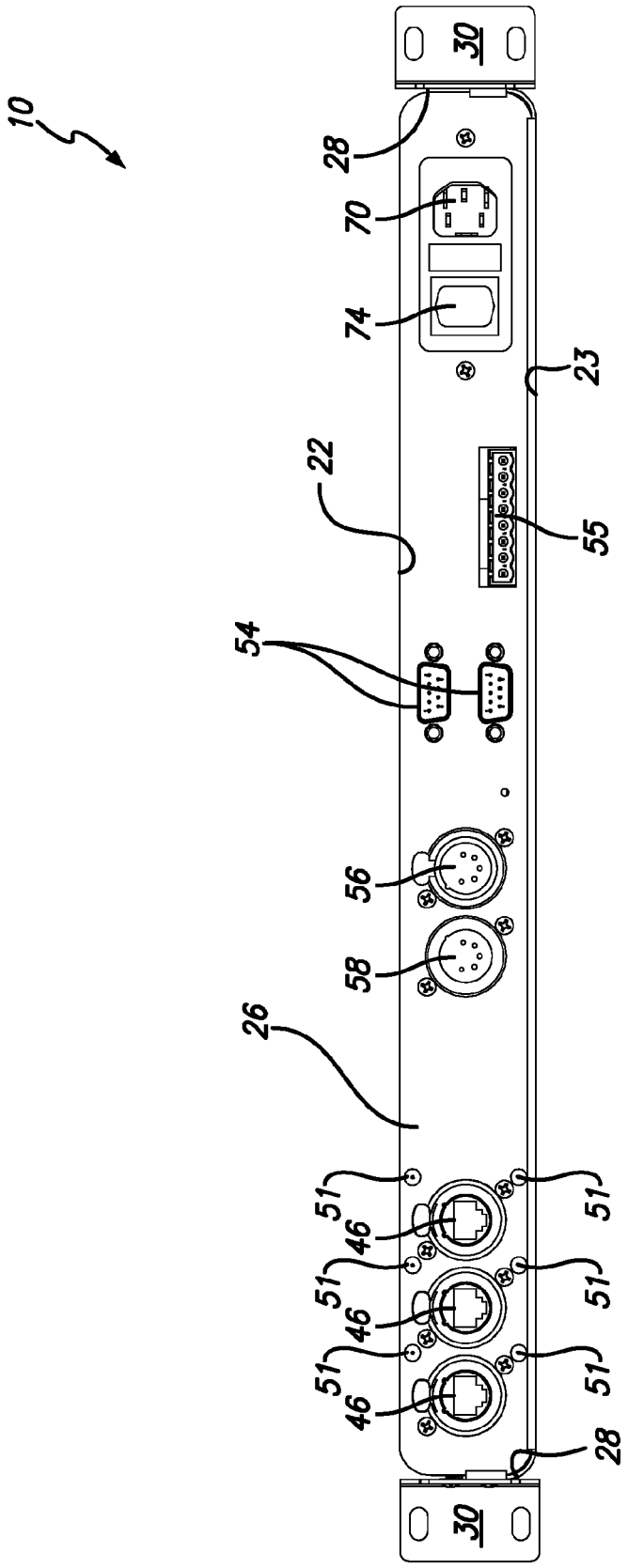


FIG. 4

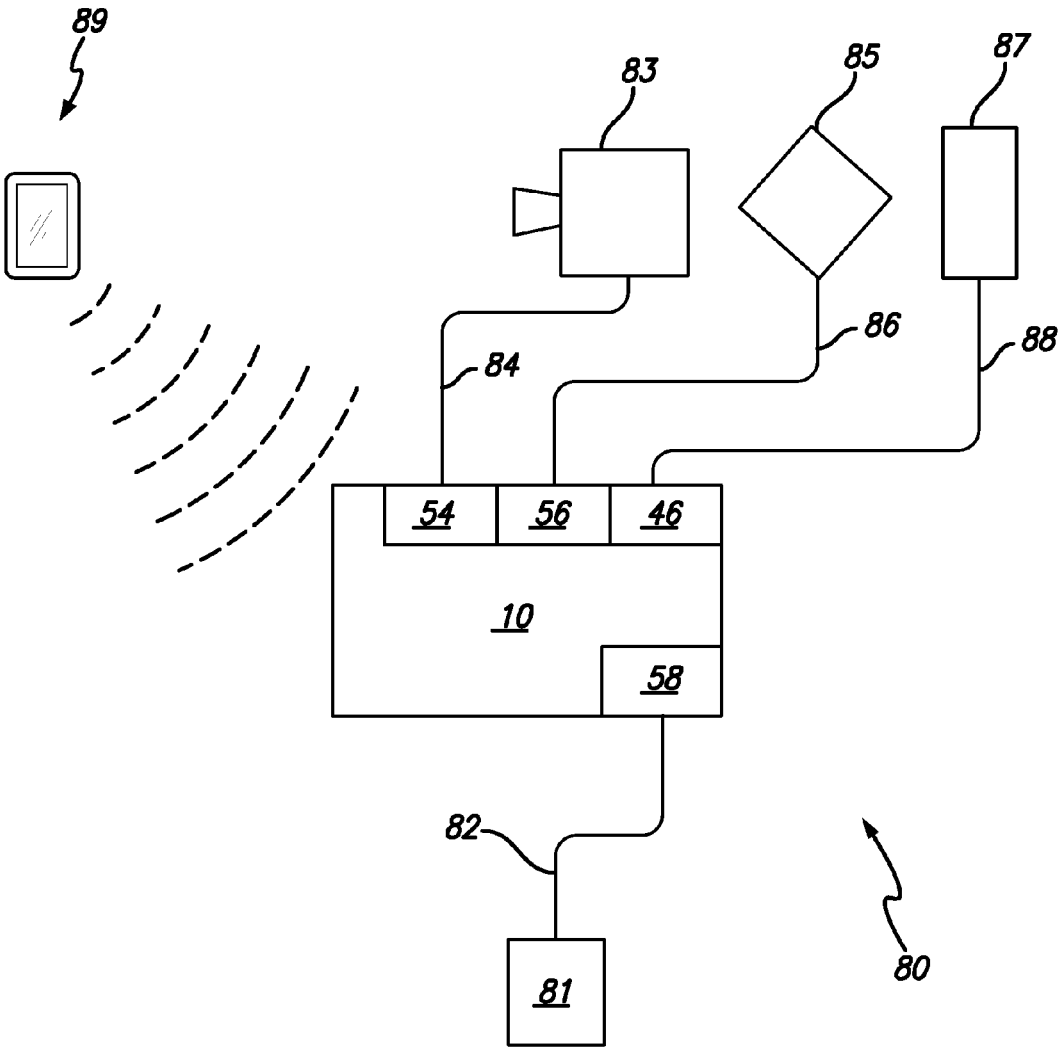


FIG. 5

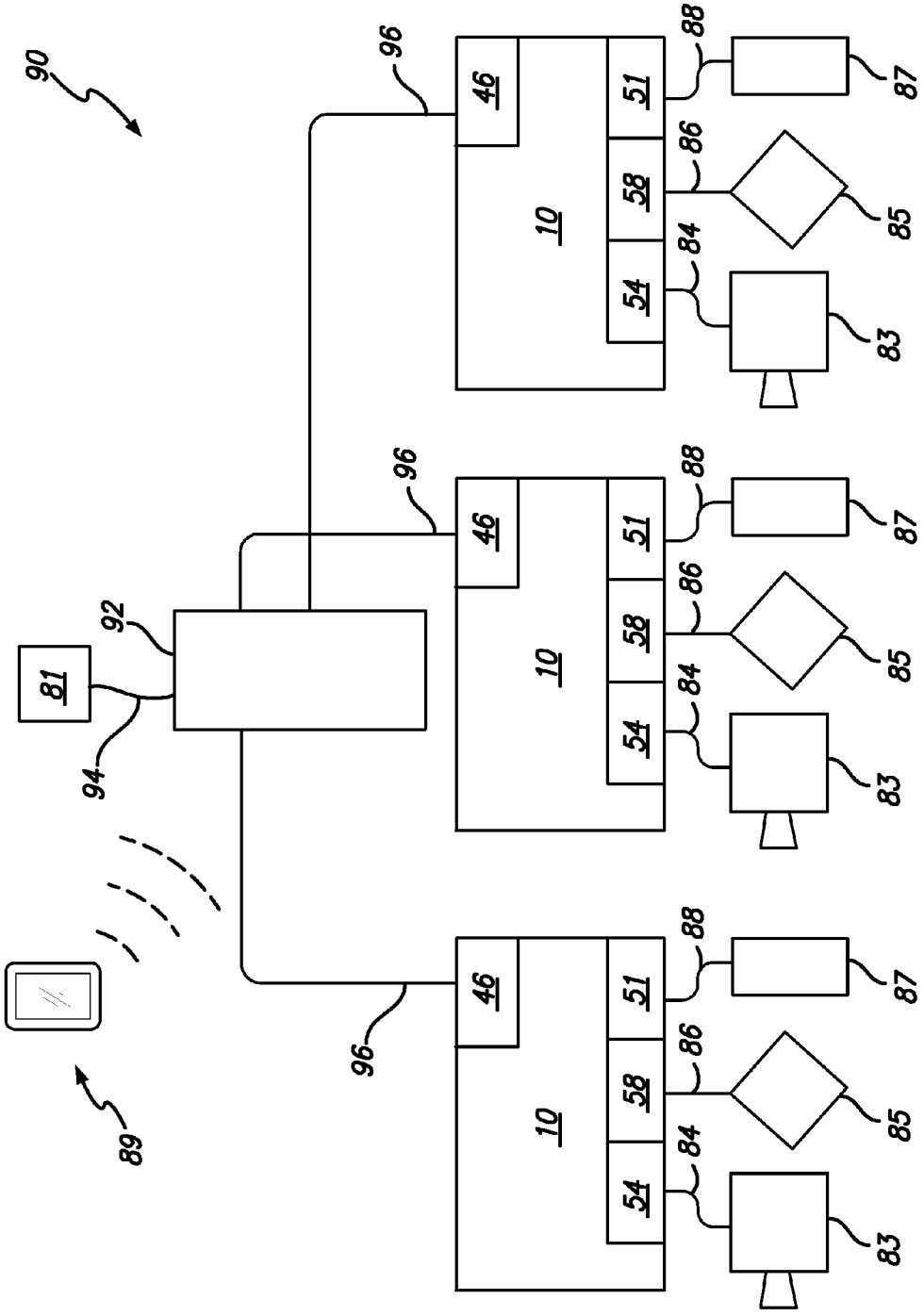
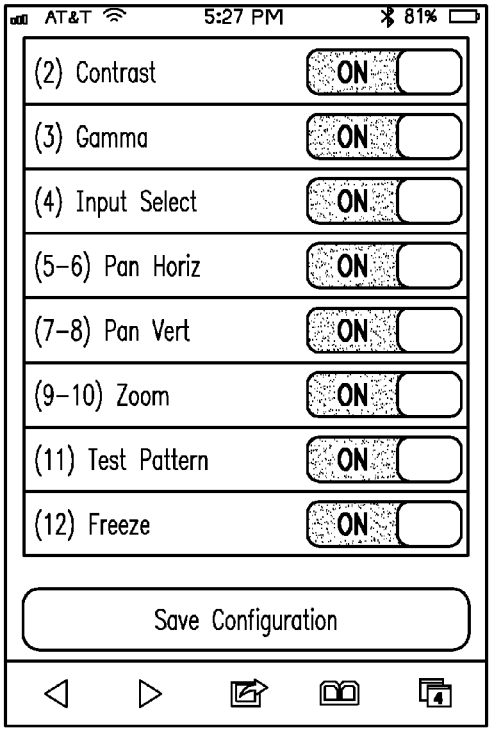


FIG. 6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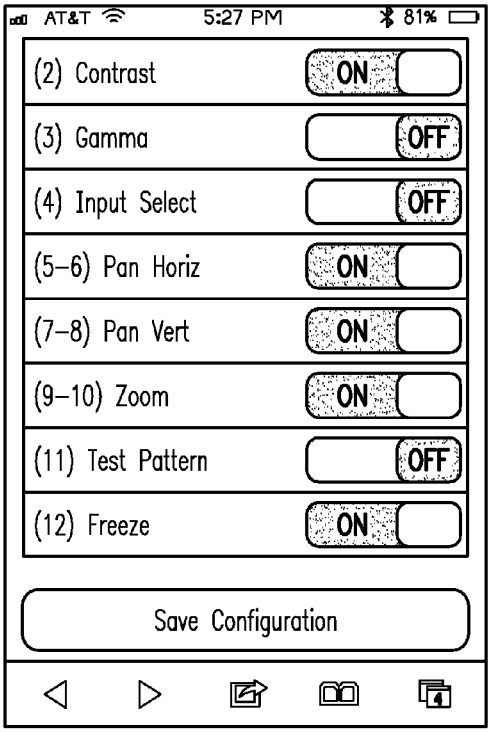
81%
(2) Contrast
ON
(3) Gamma
ON
(4) Input Select
ON
(5–6) Pan Horiz
ON
(7–8) Pan Vert
ON
(9–10) Zoom
ON
(11) Test Pattern
ON
(12) Freeze
ON
Save Configuration

FIG. 7A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ON
(7–8) Pan Vert
ON
(9–10) Zoom
ON
(11) Test Pattern
OFF
(12) Freeze
ON
Save Configuration

FIG. 7B

CONTROL DEVICE, SYSTEM CONTAINING THE CONTROL DEVICE AND METHOD OF USING THE SAME

RELATED APPLICATION DATA

This application is a divisional of U.S. patent application Ser. No. 13/972,675, filed Aug. 21, 2013, and titled "Control Device, System Containing The Control Device And Method of Using the Same," which application is currently pending. This application also claims the benefit of priority of U.S. Provisional Patent Application Ser. No. 61/707,761, filed Sep. 28, 2012, and U.S. Provisional Patent Application Ser. No. 61/802,082, filed Mar. 15, 2013. Each of which are incorporated by reference herein in its entirety.

FIELD OF THE INVENTION

The present invention generally relates to the field of control devices. In particular, the present invention is directed to a control device, system containing the control device and method of using the same.

BACKGROUND

This invention relates to the electrical arts. In particular, this invention relates to a control device for the control of at least one controllable media device, a system incorporating the control device and a method of using the control device.

As media displays are not only becoming more elaborate and complex, but are becoming more commonplace, the control of the controllable media devices used in creating the displays must become more versatile. To this end, controllable media devices with automated and remotely controllable parameters are known in the entertainment and architectural lighting markets. Such media devices are commonly used in theaters, television studios, concerts, theme parks, night clubs and other venues. Representative controllable media devices include lighting devices, such as luminaires and dimmers, projection devices, video processors, audio devices, media servers, effects systems, such as fog machines, and the like. So, for example, a typical controllable lighting device will, at least, provide remote control over intensity, color, focus, beam pattern and zoom. Controllable lighting devices may further provide remote control over pan and tilt among other parameters. Similarly, a typical controllable projector will, at least, provide remote control over intensity, zoom, focus and input selection.

It is a difficulty in elaborate media displays, that the different controllable media devices are often controlled by different protocols. Today many controllable devices are controlled by command-based protocols, including the RS-232 protocol, a command-based protocol commonly used for projectors, video processors/switchers, and playback devices, the RS-422 protocol and, in particular, the Sony Decklink extended RS-422 protocol, commonly used to trigger playback devices, such as analog and digital VTR decks, media servers and the like, as well as certain Ethernet-based protocols.

It is also known to control certain controllable media devices through the industry standard state-based protocols, such as DMX-512. DMX-512 was developed by the United States Institute of Theatre Technology (USITT) in 1986 and has since been adopted and revised by the Entertainment Services and Technology Association (ESTA) as an ANSI standard, E1.11. This is an EIA RS-485 based serial network protocol designed to transmit 512 bytes of data (or channels) from a DMX-512 controller to a number of serially connected media device controllers.

A controllable media device controller that uses DMX-512 for control uses a number of discrete channels to control various media device parameters. Each controllable media device is designed by its manufacturer with a number of such controllable parameters that respond to a pre-defined mapping of the channels. Typically, the assignment mapping of DMX-512 channels to the internal control channels and hence to physical parameters is fixed within the media device. For example, channels **1** and **2** may control pan and tilt, **3** may control zoom and so on. Additionally, each of the channels has multiple levels, or amplitude settings, to produce different values for the parameters within the channels. The amplitude level on each channel can be set to one of up to 255 discrete levels. The mappings of the values within the channels to particular commands for a parameter are also fixed within the media device.

It is a drawback of such DMX-512 and other state-based protocol controllable devices, that the controller has control over all exposed parameters whether all the parameters are to be used or not. This results in the user often changing parameters that should not be modified. With a DMX-512 controllable projector, for example, the user may want control over only intensity and input selection, but not zoom or focus, so that a controller user will not inadvertently adjust parameters, that a projectionist may have spent hours manually setting.

A manufacturer may offer more than one such mapping selectable as a different "protocol mode" or "library" option. It remains a drawback, however, that the user cannot freely decide which parameters to use. It is a further drawback of this approach that the library file format is different for every brand/type of control requiring the media device controller include a large number of library files in order to support multiple media devices

SUMMARY OF THE DISCLOSURE

In one implementation, the present disclosure is directed to a control device for a serial network protocol controller, the serial network protocol controller configured to repeatedly transmit an output signal composed of a plurality of channels to at least one controllable media device, at least one of the plurality of channels for controlling a parameter of the at least one controllable media device. The control device includes a housing; a CPU and a memory disposed in the housing; a serial network protocol inlet port for communication with the serial network protocol controller; and a serial network protocol outlet port for communication with the at least one controllable media device; wherein the control device is configured to selectively disable control of the parameter of the controllable media device by the at least one channel while the serial network protocol controller continues to transmit the at least one channel to the at least one media device.

In another implementation, the present disclosure is directed to a media device control system. The system includes a serial network protocol controller, a control device for the serial network protocol controller and at least one controllable media device, the serial network protocol controller configured to repeatedly transmit an output signal composed of a plurality of channels to the control device, at least one of the plurality of channels for controlling a parameter of the at least one controllable media device. The control device includes a housing; a CPU and a memory disposed in the housing; a serial network protocol inlet port

for communication with the serial network protocol controller; and a serial network protocol outlet port for communication with the at least one controllable media device, where, the control device is configured to selectively enable and disable control of the parameter of the at least one controllable media device by the at least one channel while the serial network protocol controller continues to transmit the at least one channel to the at least one controllable media device.

In yet another implementation, the present disclosure is directed to a method for controlling at least one parameter of a controllable media device. The steps include transmitting an output signal composed of a plurality of channels to a control device operably connected to the controllable media device, at least one of the plurality of channels for controlling a parameter of the controllable media device; and selectively disabling, with the control device, control of the parameter of the at least one controllable media device, while continuing to transmit the at least one channel.

BRIEF DESCRIPTION OF THE DRAWINGS

For the purpose of illustrating the invention, the drawings show aspects of one or more embodiments of the invention. However, it should be understood that the present invention is not limited to the precise arrangements and instrumentalities shown in the drawings, wherein:

FIG. **1** is a top and front isometric view of one embodiment of a control device in accordance with the invention, with the top and front of the housing shown in phantom;

FIG. **2** is a top view of the control device shown in FIG. **1**, with the top of housing shown in phantom;

FIG. **3** is a front view of the control device shown in FIG. **1**, with the front of housing shown in phantom;

FIG. **4** is a back view of the control device shown in FIG. **1**, with the back of housing shown in phantom;

FIG. **5** is a schematic illustration of a first embodiment of a media device control system including a control device connected to a plurality of controllable media devices;

FIG. **6** is a schematic illustration of a second embodiment of a media device control system including three control devices, each control device connected to a plurality of controllable media devices; and

FIGS. **7**A and **7**B are diagrammatic views of a user interface before and after selective disabling of a plurality of channels.

DETAILED DESCRIPTION

Particular embodiments of the invention are described below in considerable detail for the purpose of illustrating its principles and operation. However, various modifications may be made, and the scope of the invention is not limited to the exemplary embodiments described below.

Disclosed is a media device control system comprising a state-based protocol controller, at least one device for controlling signals generated by the state-based protocol controller and a plurality of controllable media devices. In some embodiments, the media device control system additionally comprises a remote control unit. It is a distinct advantage of the invention that the control device is of use, not only with controllable media devices controlled by state-based protocols, such as the DMX-512 protocol, but by command-based protocols. For example, the control device is useful for configuration and control of RS-232 and RS-422 protocol controlled devices.

In one aspect, the control device is configured to transmit the output signal composed of a plurality of channels repeatedly based on any suitable standard state-based protocol, such as the DMX-512 protocol. Presently, a DMX-512 controller is configured to serially transmit up to 512 channels. In such aspects, at least one of the plurality of channels is for controlling a parameter of at least one DMX-512 controllable media device.

Details of the control device **10** are shown in FIGS. **1-4**. The control device includes a housing **21**. In the embodiment shown in FIGS. **1-4**, the housing has a generally rectangular cross section with a top surface **22** (FIGS. **3** and **4**), a bottom surface **23** (FIGS. **3** and **4**), a front surface **24** (FIGS. **2** and **3**), a back surface **26** (FIGS. **2** and **4**) and opposing side surfaces **28** (FIGS. **1-4**). In some aspects, the housing forms a rack mount box dimensioned to be mounted on a rack, such as a 19" rack (not shown) with screws (not shown) using flanges **30** (FIGS. **1-4**).

In one aspect, disposed in the housing **21** is a main logic board **32** (FIGS. **1-3**) comprising a central processing unit (CPU) and memory. In some embodiments, the CPU includes an Ethernet controller to provide a network interface for remote configuration and control of the controllable media devices via Wi-Fi or a Local Area Network (LAN). In the embodiment shown in FIG. **5**, a wireless Ethernet module is included with the CPU to provide direct configuration and control of the controllable media devices using a remote control unit **89**.

In still another embodiment, the central processing unit includes an embedded web server to provide a network interface for remote configuration and control of the controllable media devices via the Internet. The user can access the web server either with a user interface **60** on the control device (FIGS. **1-3**) or with the remote control device **89**.

In one aspect, a dedicated USB charging port **36** (FIGS. **1-3**) extends through the front surface **22** of the housing **21** and is operably connected to the main logic board **32**. The USB charging port is of especial use for charging mobile devices, such as the mobile devices used for remote control or configuration of the controllable control devices.

In another aspect, the control device **10** is configured to include at least one Ethernet port. In the representative embodiment shown in FIGS. **1-3**, the control device includes three rear external Ethernet ports **46**, one front external Ethernet port **48** and one internal Ethernet port **50**. The external Ethernet ports can be used for remote configuration or control of any controllable media device connected to the Ethernet ports using a suitable protocol including without limitation, industry standard protocols, such as ArtNet, PathportNet, ETCNet, MA-Net, MA-Net2, ACN, ANSI E1.31, ANSI E1.33, SLPv2, ANSI E1.17 and the like. In some embodiments, the Ethernet ports are included as part of an Ethernet switch module, such as a gigabit Ethernet switch module **40** (FIGS. **1-3**) disposed in the housing **21** of the signal control device **10** and in communication with the CPU.

Other embodiments of the control device **10** can include different numbers of Ethernet ports in different locations depending on the needs of the user. In some embodiments, the Ethernet switch module **40** includes a pair of status lights **51** positioned adjacent to each of the external Ethernet ports **46** and **48** for indicating whether data is being received or transmitted through the Ethernet ports.

In another aspect, the control device **10** is configured to include one or more additional communication ports for configuration and control of the media devices. In some embodiments, the additional communication ports are

included as part of an input/output (I/O) module **52** disposed in the housing **21** of the control device **10** and in communication with the CPU.

In the representative embodiment shown in FIGS. **1-4**, the I/O module includes two serial ports **54**, and, in this embodiment, two DB-9 serial ports for supporting the RS232 protocol. The RS232 protocol is commonly used for projectors, video processors/switchers, playback devices and the like. Even when a media device does contain Ethernet connectivity, it is often desirable to use the serial port as it may require little or no configuration as opposed to the configuration that Ethernet connectivity often requires.

The representative I/O module **52** also includes an MSTBA communication port **55** for connection to controllable media devices configured and controlled using the RS422 protocol and, in particular, the Sony Decklink extended RS422 protocol. The Sony Decklink extended RS422 protocol is commonly used to trigger playback devices, such as analog and digital VTR decks, media servers and the like.

The representative I/O module **52** includes an XLR-5 inlet port **58** for connection to a DMX-512 controller and an XLR-5 outlet port **56** for connection to at least one controllable media device configured and controlled using the DMX-512 protocol and, in particular, to at least one controllable media devices configured and controlled using the RDM extended DMX-512 protocol. The DMX-512/RDM protocol is commonly used for lighting and show control. Show control provides real-time control over controllers and media devices connected to the other communication ports, i.e., connected to the Ethernet switching ports **46** and **48**, the serial ports **54**, and the MSTBA connection port **55**. Show control enables protocol conversions between any physical port and any Ethernet-based protocol. This provides for, but is not limited to, the direct control of projector functions, video switching and processing, LED walls, playback devices and controlling any device that can be connected using any of the communication ports on the control device. In addition show control provides for the programming of triggers and actions based on events from scheduled dates or times, time-codes contact-closure or any other incoming signal. Additionally, DMX-512/RDM can be used to control other DMX-512 devices based on input coming from the DMX-512 ports.

In another aspect, the control device **10** is configured to provide support for general purpose input/output (GPIO). GPIO supports at least one input and output contact closure interface that enables the control device to directly control power to a device or system or a trigger a system that is able to accept contact closure inputs. The input and output contact closure interfaces provide complex triggering and control over media devices connected to the communication ports by taking a simple external input from switches, such as a musician's foot pedal or a motion sensor or a trigger on a mechanical system. In some embodiments, the control device includes at least one of an MSTBA or other communication port configured to support the GPIO control.

In another aspect, the control device is control device **10** is configured to support a clock generator disposed in the housing **21**. The clock generator produces time codes to trigger events or synchronize the various controllable media devices. In some embodiments, the time code is an SMPTE time code.

In some embodiments, the control device **10** is configured to support MIDI Show Control and Midi time code extended protocols for linking control of different media devices. The control device can receive inputs and generate outputs to provide bridging control to and from any of the communication ports.

In still another aspect, disposed on the front surface **24** of the housing **21** of the control device **10** is a user interface **60** (FIGS. **1-3**) by which a user can operate the control device and control and or configure the controllable media devices, as well as monitor their status. In some aspects, the user interface includes a display **62** (FIGS. **1** and **3**), such as a touch screen display, including but not limited to an LCD touch screen display adapted to configure or control the control device as well as at least one of the media devices. In some further aspects, the user interface includes at least one mechanical switch, such as a DIP switch, operably connected to the CPU. In the representative embodiment shown in FIGS. **1-3**, a plurality of push buttons **64** (four shown in the representative FIGS. **1-3**) are adapted to configure or control the control device as well as at least one of the media devices. In some aspects, the user interface additionally includes a plurality visible indicators **66** (FIGS. **1** and **3**) including lights such as LED lights to indicate the status of the various configuration and control features.

In some aspects, the control device **10** includes a power supply **68** (FIGS. **3** and **4**) for supplying power to all of the electrical components of the control device (FIGS. **3**, **4** and **6**), a power cord receptacle **70** to receive a power cord (not shown) for supplying electricity to the control device and on off control switch **74** (FIGS. **4** and **6**) for controlling the flow of electricity to the power supply.

FIG. **5** is a schematic illustration of one aspect or the invention; a media control system **80** comprising a serial network protocol controller **81** configured to transmit an output signal composed of a plurality of channels repeatedly to the control device **10**, at least one of the plurality of channels for controlling a parameter of the at least one controllable media device. In the representative embodiment shown in FIG. **5**, the serial network protocol controller is operably connected to the DMX-512 input port **58** of the control device using a suitable DMX-512 connection cable **82**.

The control device **10**, in turn, is operably connected to a plurality of controllable media devices. Representative media devices include, without limitation, lighting devices, such as luminaires and dimmers, projection devices, video processors, audio devices, media servers, effects systems, such as fog machines and the like. For example, in the embodiment shown in FIG. **5**, a projector **83** is connected to one of the serial ports **54** using a suitable RS-232 connection cable **84**, a lighting device **85** is connected to the DMX-512 outlet port **56** using a suitable DMX-512 connection cable **86** and a media server **87** is connected to one of the external Ethernet ports **46** using an Ethernet cable **88**. While a first controllable media device **83**, a second controllable media device **85** and a third controllable media device **87** are shown in FIG. **5** one or more controllable media devices can be connected to the control device according to the particular needs of a user.

The remote control unit **89** can be any suitable device. Representative remote control units include smart phones, such an Apple's iPhone.

It is a distinct advantage of the invention that the control unit can be used to configure a wide range of media devices, including DMX-512 protocol controlled media devices, such as lighting devices, including as luminaires and dimmers, projectors, video processors, audio devices, video devices, including video processors/switchers, and playback

devices, including analog and digital VTR decks, media servers, effects systems, including fog machines, LED walls and the like.

Additionally, the control unit **10** can be used to configure and control a wide range of parameters. For example, every DMX-512 controllable media device is designed by its manufacturer to include a predefined number of controllable parameters. Representative parameters for a DMX-512 controllable video processing device include, without limitation, contrast, gamma correction, input source selection, horizontal panning, vertical panning, tilt, zoom in and out, beam pattern, image freezing, focus, color and the like. Representative parameters, for a DMX-512 controllable projector will, at least, provide remote control over intensity, zoom, focus and input selection. Additionally, the values within the channels to particular commands for a parameter are fixed within a media device.

In an alternative embodiment shown in FIG. **6**, a media device control system **90** comprises a serial network protocol controller **81** operably connected to a single network access point **92** via an Ethernet cable **94**. Each of a plurality of control devices **10** is connected to the single network access point to form a local area network. In some embodiments, the control devices are connected by Ethernet cables **96** to the single network access point via the external Ethernet ports **46** on each of the control devices. In other embodiments, the network access point can be connected to the control devices using different types of cables and ports or they can be connected wireles sly. While three control devices and three controllable media devices connected to each of three control devices are shown in the representative embodiment of FIG. **6**, one or more controllable media devices can be connected to one or more control devices according to the particular needs of a user. The control device can configure and control each controllable media device independently or in combination, using the remote control unit **89**.

In some embodiments, the control device is configured to identify the particular channel or channels that are controllable by a DMX-512 protocol controller. In one embodiment, the central processing unit is configured to identify the particular channel or channels that are controllable by the DMX-512 protocol controller. In another embodiment, the control device includes a separate integrated circuit, processor, logic unit or the like configured to identify the particular channel or channels that are controllable by the DMX-512 protocol controller.

In some embodiments, the control device is configured to include a DMX-512 signal mute. The DMX-512 signal mute selectively enables and disables control of at least one channel while allowing the DMX-512 controller to continue to transmit the at least one channel on to the control device. In some aspects, the control device is configured to selectively disable and/or enable control of the parameter of the at least one channel by the DMX-512 protocol controller while allowing the DMX-512 protocol controller to continue to transmit the at least one channel to the control device.

In one aspect, the control device **10** is configured to selectively disable and/or enable control of the parameter by causing the control device to ignore the at least one channel. And in one aspect, the control device is configured with a static default value for each disabled channel, such that if a different value is entered for that channel, the incoming value is ignored and the at least one device continues to use the static value.

In another aspect, the control device **10** includes software or firmware for selectively controlling the mute, the software or firmware implemented through an IOS, Windows, Linux, including Android, or similar operating system user interface.

It is a benefit of control device **10** configured with a mute in accordance with the invention that the selectively disabled parameters can then be controlled by another method, such as manually controlled or controlled by another command protocol. For example, in an exemplary embodiment, the DMX controllable media device is a projector. The DMX-512 protocol controller output signal includes a plurality of channels for controlling parameters such as intensity, input selection, zoom and focus. Using the control device in accordance with this aspect of the invention, the channels for intensity and input selection can be enabled, i.e., be controllable by a DMX-512 protocol controller, while control of the channels for zoom and focus by the media device controller can be disabled, so that the zoom and focus can be manually controlled by the user or by a command protocol.

In another exemplary embodiment of the invention, the serial network protocol controller can be configured to transmit an output signal to a controllable lighting device. The output signal can include, for example, a plurality of channels for controlling parameters, such as intensity, color, focus, beam pattern, zoom, pan and tilt. Using the control device in accordance with this aspect of the invention, the channels for focus, beam pattern, zoom, pan, and tilt can be enabled, to provide for ready control by the controller. Simultaneously, the channels for intensity and color can be disabled to cause the device to ignore any data received for that channel and prevent the user from inadvertently changing the value for the parameter otherwise controllable by that channel. It is a benefit of such a control device that, when enabled, the possibility of inadvertently changing the value of a parameter is minimized or eliminated.

Turning now to the method of operation, in one aspect, a method for controlling at least one parameter of a controllable media device comprises transmitting an output signal composed of a plurality of channels repeatedly to a control device operably connected to the controllable media device, where at least one of the plurality of channels is for controlling a parameter of the controllable media device. Representative parameters include, without limitation, contrast control, gamma correction, input source selection, horizontal panning, vertical panning, tilt control, zoom in and out, control of the beam pattern, image freezing, focus control and color control.

Control of the parameter is selectively disabled using the control device, while continuing to transmit the at least one channel. In one aspect, the output signal composed of the plurality of channels is repeatedly transmitted by a media device controller, such as a serial network protocol controller. Suitable serial network protocol controllers include, without limitation, DMX-512 protocol controllers, ANSI E1.31 protocol controllers, Artnet protocol controllers, PathportNet protocol controllers, ETCNet protocol controllers, MA-Net controllers, MA-Net2 protocol controllers and ACN protocol controllers.

And in an aspect of the invention, the method further comprises selectively enabling control of the disabled at least one parameter of the at least one controllable media device by the at least one channel of the plurality of channels using the control device, while continuing to transmit the at least one channel. In some embodiments, the selective enabling and disabling control of the parameter of the controllable media is by a graphical interface configured to selectively disable and/or enable control of the parameter of the controllable media device by the signal controller.

In some aspects, the user can control operation of at least one control device on a channel-by-channel basis using a graphical user interface. Shown in FIG. **7**A is a diagrammatic representation of an IOS interface on the remote control having a menu showing channels **2-12** of the media device controller enabled to control, contrast, gamma, input selection, horizontal, respectively. Shown in FIG. **7**B is the menu after the appropriate boxes on the user interface have been clicked to disable gamma, input selection, and test pattern.

In the foregoing specification, various aspects of the invention have been described with reference to specific exemplary embodiments. Various modifications and changes may be made, however, without departing from the scope of the present invention. The specification and figures are illustrative, rather than restrictive, and modifications are intended to be included within the scope of the present invention. Accordingly, the scope of the invention should be determined by the claims and their legal equivalents rather than by merely the examples described. With regard to particular embodiments described above, any benefit, advantage, solution to a problem, or any element that may cause any particular benefit, advantage, or solution to occur or to become more pronounced are not to be construed as critical, required, or essential features or components of any or all the claims

The foregoing has been a detailed description of illustrative embodiments of the invention. It is noted that in the present specification and claims appended hereto, conjunctive language such as is used in the phrases "at least one of X, Y and Z" and "one or more of X, Y, and Z," unless specifically stated or indicated otherwise, shall be taken to mean that each item in the conjunctive list can be present in any number exclusive of every other item in the list or in any number in combination with any or all other item(s) in the conjunctive list, each of which may also be present in any number. Applying this general rule, the conjunctive phrases in the foregoing examples in which the conjunctive list consists of X, Y, and Z shall each encompass: one or more of X; one or more of Y; one or more of Z; one or more of X and one or more of Y; one or more of Y and one or more of Z; one or more of X and one or more of Z; and one or more of X, one or more of

Y and one or more of Z.

Various modifications and additions can be made without departing from the spirit and scope of this invention. Features of each of the various embodiments described above may be combined with features of other described embodiments as appropriate in order to provide a multiplicity of feature combinations in associated new embodiments. Furthermore, while the foregoing describes a number of separate embodiments, what has been described herein is merely illustrative of the application of the principles of the present invention. Additionally, although particular methods herein may be illustrated and/or described as being performed in a specific order, the ordering is highly variable within ordinary skill to achieve aspects of the present disclosure. Accordingly, this description is meant to be taken only by way of example, and not to otherwise limit the scope of this invention.

Exemplary embodiments have been disclosed above and illustrated in the accompanying drawings. It will be understood by those skilled in the art that various changes, omissions and additions may be made to that which is specifically disclosed herein without departing from the spirit and scope of the present invention.

What is claimed is:

1. A control device for a serial network protocol controller, the serial network protocol controller configured to repeatedly transmit an output signal composed of a plurality of channels to at least one controllable media device, two or more of the plurality of channels for controlling corresponding parameters of the at least one controllable media device, the control device comprising:

a housing;

a CPU and a memory disposed in the housing;

a serial network protocol inlet port for communication with the serial network protocol controller; and

an outlet port for communication with the at least one controllable media device;

wherein the control device is configured to

receive a user selection to enable or disable any one of the two or more of the plurality of channels to enable or disable control of one or more of the parameters by the serial network protocol controller;

receive a control value for one of the parameters corresponding to the user-selected disabled channel; and

in response to the user selection to disable one of the two or more of the plurality of channels, ignore the user-selected disabled channel and provide the control value to the at least one controllable media device for control of the corresponding parameter.

2. The control device of claim **1**, further comprising a wireless Ethernet controller configured to provide control of the control device via Wi-Fi or via a Local Area Network.

3. The control device of claim **1**, wherein the CPU is configured to provide support for at least one of ANSI E1.31, Artnet, PathportNet, ETCNet, MA-Net, MA-Net2 and ACN protocols.

4. The control device of claim **1**, further comprising an embedded web server configured to provide control of the device via the Internet.

5. The control device of claim **1**, wherein the serial network protocol controller is configured for a DMX-512 protocol.

6. The control device of claim **1**, further comprising at least one additional communication port for communication with a media device controllable by a protocol other than a serial network protocol used by the serial network protocol controller.

7. The control device of claim **6**, wherein the at least one additional communication port is a serial port, an Ethernet port or an MSTBA port.

8. The control device of claim **6**, wherein the protocol other than the serial network protocol is RS-232 or RS-422 protocol.

9. The control device of claim **1**, wherein the parameter is intensity, contrast control, gamma correction, input source selection, horizontal panning, vertical panning, tilt control, zoom in and out, control of a beam pattern, image freezing, focus control or color control.

10. The control device of claim **9**, wherein the control device is configured to selectively enable control of the parameter of the at least one controllable media device by the at least one channel while the serial network protocol controller continues to transmit the at least one channel to the at least one controllable media device.

11. The control device of claim **1**, wherein the control value is provided with a command-based protocol communication.

12. The control device of claim **1**, wherein at least one controllable media device is a command-based protocol controlled media device.

13. The control device of claim 1, wherein the control value is a user-specified static default value.

14. A media device control system comprising:

a serial network protocol controller, a control device for the serial network protocol controller and at least one controllable media device,

the serial network protocol controller configured to repeatedly transmit an output signal composed of a plurality of channels to the control device, two or more of the plurality of channels for controlling corresponding parameters of the at least one controllable media device and

the control device comprising:

a housing;

a CPU and a memory disposed in the housing;

a serial network protocol inlet port for communication with the serial network protocol controller; and

an outlet port for communication with the at least one controllable media device,

where, the control device is configured to

receive a user selection to enable or disable any one of the two or more of the plurality of channels to enable or disable control of one or more of the parameters by the serial network protocol controller;

receive a control value for one of the parameters corresponding to the user-selected disabled channel; and

in response to the user selection to disable one of the two or more of the plurality of channels, ignore the user-selected disabled channel and provide the control value to the at least one controllable media device for control of the corresponding parameter.

15. The media device control system of claim 14, wherein the control device further comprises a wireless Ethernet controller configured to provide control of the control device via Wi-Fi or via a Local Area Network.

16. The media device control system of claim 14, wherein the CPU is configured to provide support for at least one of ANSI E1.31, Artnet, PathportNet, ETCNet, MA-Net, MA-Net2 and ACN protocols.

17. The media device control system of claim 14, wherein the control device further comprises an embedded web server configured to provide control of the control device via the Internet.

18. The media device control system of claim 14, wherein the serial network protocol controller is configured for a DMX-512 protocol.

19. The media device control system of claim 14, further comprising at least one additional communication port for communication with a media device controllable by a protocol other than a serial network protocol used by the serial network protocol controller.

20. The media device control system of claim 19, wherein the at least one additional communication port is a serial port or an MSTBA port.

21. The media device control system of claim 19, wherein the protocol other than the serial network protocol is RS-232 or RS-422 protocol.

22. The media device control system of claim 14, wherein the at least one controllable media device is a lighting device, a projection device, a video processor, an audio device, a media server or an effects system device.

23. The media device control system of claim 14, wherein the parameter is intensity, contrast control, gamma correction, input source selection, horizontal panning, vertical panning, tilt control, zoom in and out, control of a beam pattern, image freezing, focus control or color control.

24. The media device control system of claim 23, wherein the control device is configured to selectively enable control of the parameter of the at least one controllable media device by one of the plurality of channels while the serial network protocol controller continues to transmit the one of the plurality of channels to the at least one controllable media device.

25. The media device control system of claim 14, further comprising a remote control unit configured to display a graphical user interface (GUI), the GUI including a menu of the two or more of the plurality of channels and corresponding ones of the parameters controlled by the two or more of the plurality of channels, the menu including a plurality of control elements for receiving a user selection to disable or enable control by the serial network protocol controller of any one or more of the parameters.

26. A method for controlling parameters of a controllable media device comprising the steps of:

receiving, at a control device operably connected to the controllable media device, an output signal from a media device controller, the output signal composed of a plurality of channels, two or more of the plurality of channels for controlling corresponding ones of the parameters of the controllable media device;

receiving a user selection to enable or disable any one of the two or more of the plurality of channels to enable or disable control of one or more of the parameters by the media device controller;

receiving a control value for one of the parameters corresponding to the user-selected disabled channel; and

in response to the user selection to disable one of the two or more of the plurality of channels, selectively disabling, with the control device, control by the media device controller of the parameter corresponding to the user-selected disabled channel by ignoring the user-selected disabled channel and providing the control value to the controllable media device for control of the corresponding parameter.

27. The method of claim 26, further comprising receiving a user selection to selectively enable control of the user-selected disabled channel.

28. The method of claim 26, wherein the media device controller is a serial network protocol controller.

29. The method of claim 26, wherein the media device controller is a DMX-512 protocol controller, an ANSI E1.31 protocol controller, an Artnet protocol controller, a Pathport-Net protocol controller, an ETCNet protocol controller, an MA-Net, MA-Net2 protocol controller or an ACN protocol controller.

30. The method of claim 26, wherein the media device controller is a DMX-512 protocol controller.

31. The method of claim 26, wherein the parameter is contrast control, gamma correction, input source selection, horizontal panning, vertical panning, tilt control, zoom in and out, control of a beam pattern, image freezing, focus control or color control.

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