BIAMP SYSTEMS
ARCHITECTS & ENGINEERS SPECIFICATIONS
TESIRA® PRODUCT LINE

TESIRA CONFIGURABLE SERVERS

SERVER

The digital audio network server shall be designed exclusively for use with Tesira® systems. The server shall support AVB digital audio and control networking by means of a factory configured 420 x 420 modular card. The server shall also support an additional 420 x 420 channel AVB networking card, one 32 x 32 channel CobraNet® networking card, one 64 x 64 channel Dante™ networking card, or one standard analog I/O card. The server shall be factory configured with one DSP card and shall be capable of supporting a total of eight cards. The server shall provide dual Ethernet ports for configuration and control connection. The server shall support redundancy if both the primary secondary units are identically configured. The server shall provide front panel LED identification of server power, status, alarm, and activity as well as system-wide alarm. The server shall provide front panel OLED display for server and system information. The server shall be rack mountable (3RU) and feature software-configurable signal processing, including but not limited to: signal routing and mixing, equalization, filtering, dynamics, and delay, as well as control, monitoring, and diagnostic tools. The server shall be CE marked, UL listed and compliant with the RoHS directive. Warranty shall be 5 years. The digital audio network server shall be Tesira SERVER.

SERVER-IO

The digital audio network server shall be designed exclusively for use with Tesira® systems. The server shall support AVB digital audio and control networking by means of a modular 420 x 420 channel card. The server shall support up to three audio networking cards per unit. The server shall support up to one 420 x 420 AVB network card, up to two 32 x 32 channel CobraNet® digital networking cards, and up to two 64 x 64 Dante™ digital networking cards in any configuration that does not exceed three total networking cards. The server shall be factory configured with one DSP card and shall be capable of supporting a total of three cards. The server shall provide dual Ethernet ports for configuration and control connection. The server shall be configurable for up to 48 channels of local audio input and output, including mic and line level, VoIP, and telephone interface. The server shall also support modular I/O cards for acoustic echo cancellation and ambient noise compensation. The server shall provide front panel LED identification of server power, status, alarm, and activity as well as system-wide alarm. The server shall provide front panel OLED display for server and system information. The server shall be rack mountable (3RU) and feature software-configurable signal processing, including but not limited to: signal routing and mixing, equalization, filtering, dynamics, and delay, as well as control, monitoring, and diagnostic tools. The server shall be CE marked, UL listed and compliant with the RoHS directive. Warranty shall be 5 years. The digital audio network server shall be Tesira SERVER-IO.

TesiraFORTÉ AVB AI & TesiraFORTÉ AI

The digital audio network server shall be designed exclusively for use with Tesira® systems. The AVB model server shall support Audio Video Bridging (AVB) digital audio networking that shall allow up to 128 x 128 channels. The AVB Networking connection shall be implemented on a RJ-45 connector on the AVB model. The server shall support Ethernet connection for programming and control on a RJ-45 connector. The server shall have internal DSP processing. The server shall include 4 channels of General Purpose Input and Output connection (GPIO) for sending or receiving logic signals. The programming of the GPIO ports shall be software configurable. The server shall include a RS-232 connection for control data transmission into or out of the server and such operation shall be software programmable. The server shall include a Universal Serial Bus (USB) connection on a standard USB-B type connector. The server shall be software configurable to stream up to 8 channels of digital USB Class 1 Audio transmission either into or out of the server or simultaneous input and output. The server shall provide 12 balanced input connections for receiving of microphone or line level analog audio signals on screw-down, removable connectors. The server shall provide 8 balanced output channels for the transmission of microphone or line level analog audio signals on screw-down, removable connectors. Each individual channel shall have its own dedicated connection. The server shall provide front panel OLED identification of server power, status, alarm, and activity as well as system-wide alarm. The server shall be rack mountable (1RU) and feature software-configurable signal processing, including but not limited to: signal routing and mixing, equalization, filtering, dynamics, and delay, as well as control, monitoring, and diagnostic tools. The server shall control and proxy all Tesira expander-class devices (AVB model only) and Tesira control devices. The server shall be CE marked, UL listed and compliant with the RoHS directive. Warranty shall be 5 years. The server shall be TesiraFORTÉ AVB AI (for AVB model) or TesiraFORTÉ AI (for non-AVB model).

TesiraFORTÉ AVB CI & TesiraFORTÉ CI

The digital audio network server shall be designed exclusively for use with Tesira® systems. The AVB model server shall support Audio Video Bridging (AVB) digital audio networking that shall allow up to 128 x 128 channels. The AVB Networking connection shall be implemented on a RJ-45 connector on the AVB model. The server shall support Ethernet connection for programming and control on a RJ-45 connector. The server shall have internal DSP processing. The server shall include 4 channels of General Purpose Input and Output connection (GPIO) for sending or receiving logic signals. The programming of the GPIO ports shall be software configurable. The server shall include a RS-232 connection for control data transmission and such operation shall be software programmable. The server shall include a Universal Serial Bus (USB) connection on a standard USB-B type connector. The server shall be software configurable to stream up to 8 channels of digital USB Audio Class 1 transmission either into or out of the server or simultaneous input and output. The server shall provide 12 balanced input connections for receiving of microphone or line level analog audio signals on screw-down, removable connectors. The input connections shall include Sona™ Acoustic Echo Cancellation (AEC) hardware and firmware, the parameters, routing and operation of which shall be software programmable. The server shall provide 8 balanced output channels for the transmission of microphone or line level analog audio signals on screw-down, removable connectors. Each individual channel shall have its own dedicated connection. The server shall provide front panel OLED identification of server power, status, alarm, and activity as well as system-wide alarm. The server shall be rack mountable (1RU) and feature software-configurable signal processing, including but not limited to: signal routing and mixing, equalization, filtering, dynamics, and delay, as well as control, monitoring, and diagnostic tools. The server shall control and proxy all Tesira expander-class devices (AVB model only) and Tesira control devices. The server shall be CE marked, UL listed and compliant with the RoHS directive. Warranty shall be 5 years. The server shall be TesiraFORTÉ AVB CI (for AVB model) or TesiraFORTÉ CI (for non-AVB model).

TesiraFORTÉ AVB TI & TesiraFORTÉ TI

The digital audio network server shall be designed exclusively for use with Tesira® systems. The AVB model server shall support Audio Video Bridging (AVB) digital audio networking that shall allow up to 128 x 128 channels. The AVB Networking connection shall be implemented on a RJ-45 connector on the AVB model. The server shall support Ethernet connection for programming and control on a RJ-45 connector. The server shall have internal DSP processing. The server shall include 4 channels of General Purpose Input and Output connection (GPIO) for sending or receiving logic signals. The programming of the GPIO ports shall be software configurable. The server shall include a RS-232 connection for control data transmission into or out of the server and such operation shall be software programmable. The server shall include a Universal Serial Bus (USB) connection on a standard USB-B type connector. The server shall be software configurable to stream up to 8 channels of digital USB Audio Class 1 transmission either into or out of the server or simultaneous input and output. The server shall provide 12 balanced input connections for receiving of microphone or line level analog audio signals on screw-down, removable connectors. The inputs shall include Sona™ Acoustic Echo Cancellation (AEC) hardware and firmware, the parameters, routing and operation of which shall be software programmable. The server shall provide 8 balanced output channels for the transmission of microphone or line level analog audio signals on screw-down, removable connectors. Each individual channel shall have its own dedicated connection. The server shall integrate to standard telephony communications on a RJ-11 connector for a single line of telephone communication. The server shall provide front panel OLED identification of server power, status, alarm, and activity as well as system-wide alarm. The server shall be rack mountable (1RU) and feature software-configurable signal processing, including but not limited to: signal routing and mixing, equalization, filtering, dynamics, and delay, as well as control, monitoring, and diagnostic tools. The server shall control and proxy all Tesira expander-class devices (AVB model only) and Tesira control devices. The server shall be CE marked, UL listed and compliant with the RoHS directive. Warranty shall be 5 years. The server shall be TesiraFORTÉ AVB TI (for AVB model) or TesiraFORTÉ TI (for non-AVB model).

TesiraFORTÉ AVB VI & TesiraFORTÉ VI

The digital audio network server shall be designed exclusively for use with Tesira® systems. The AVB model server shall support Audio Video Bridging (AVB) digital audio networking that shall allow up to 128 x 128 channels. The AVB Networking connection shall be implemented on a RJ-45 connector on the AVB model. The server shall support Ethernet connection for programming and control on a RJ-45 connector. The server shall have internal DSP processing. The server shall include 4 channels of General Purpose Input and Output connection (GPIO) for sending or receiving logic signals. The programming of the GPIO ports shall be software configurable. The server shall include a RS-232 connection for control data transmission into or out of the server and such operation shall be software programmable. The server shall include a Universal Serial Bus (USB) connection on a standard USB-B type connector. The server shall be software configurable to stream up to 8 channels of digital USB Audio Class 1 transmission either into or out of the server or simultaneous input and output. The server shall provide 12 balanced input connections for receiving of microphone or line level analog audio signals on screw-down, removable connectors. The input connections shall include Sona™ Acoustic Echo Cancellation (AEC) hardware and firmware, the parameters, routing and operation of which shall be software programmable. The server shall provide 8 balanced output channels for the transmission of microphone or line level analog audio signals on screw-down, removable connectors. Each individual channel shall have its own dedicated connection. The server shall integrate to Voice Over Internet Protocol (VoIP) systems on a RJ-45 connector for two lines of VoIP communication and shall support Session Initiation Protocol (SIP) v2.0 or later. The server shall provide front panel OLED identification of server power, status, alarm, and activity as well as system-wide alarm. The server shall be rack mountable (1RU) and feature software-configurable signal processing, including but not limited to: signal routing and mixing, equalization, filtering, dynamics, and delay, as well as control, monitoring, and diagnostic tools. The server shall control and proxy all Tesira expander-class devices (AVB model only) and Tesira control devices. The server shall be CE marked, UL listed and compliant with the RoHS directive. Warranty shall be 5 years. The server shall be TesiraFORTÉ AVB VI (for AVB model) or TesiraFORTÉ VI (for non-AVB model).

TESIRA SERVER CARDS

AVB-1

The digital audio networking card shall be designed for installation at the factory or in the field. The card shall be installable into Tesira® SERVER or Tesira SERVER-IO. The card shall be equipped with dual RJ-45 connectors allowing for interface with a Tesira network over Audio Video Bridging (AVB) protocol. The card shall send up to 420 total channels and receive up to 420 total channels of networked digital audio. The card shall send up to 64 streams and receive up to 64 streams of AVB between 1 and 60 channels per stream. The card shall operate in a single chassis or over a larger Tesira system in conjunction with other digital networking protocols including CobraNet® and Dante™. The card shall incorporate AES48-2005 Grounding and EMC practices and shall be compliant with the RoHS directive. Warranty shall be 5 years. The digital audio networking card shall be Tesira AVB-1.

DAN-1

The digital audio networking card shall be designed for installation at the factory or in the field. The card shall be installable into Tesira® SERVER and Tesira SERVER-IO. The card shall be equipped with dual RJ-45 connectors allowing for interface with devices utilizing the Dante™ networking protocol from Audinate®. The card shall be equipped with one Brooklyn II Module for up to 64 x 64 channels of Dante digital audio transmission. The card shall operate in a single chassis or over a larger Tesira system in conjunction with other digital networking protocols including CobraNet® and AVB. The card shall be addressable by Audinate's Dante Control software for signal routing external to the Tesira system. The card shall meet all performance criteria as specified by Audinate for the Brooklyn II Module. The card shall incorporate AES48-2005 Grounding and EMC practices and shall be compliant with the RoHS directive. Warranty shall be 5 years. The digital audio networking card shall be Tesira DAN-1.

SAC-4

The ambient noise compensation card shall be a 4-channel card designed exclusively for use with Tesira SERVER and Tesira SERVER-IO. The modular card shall provide 4 balanced mic or line level inputs on plug-in barrier strip connections. Software configuration and control for each input shall include: gain with clip indicator, phantom power on/off, mute, level, and signal invert. The ambient noise compensation algorithm shall be configured and controlled separately in software. Programmable parameters shall include: threshold, response time and compensation. The modular input card shall incorporate AES48-2005 Grounding and EMC practices and shall be compliant with the RoHS directive. Warranty shall be 5 years. The ambient noise compensation card shall be Tesira SAC-4.

SCM-1

The digital audio networking card shall be designed for installation at the factory or in the field. The card shall be installable into Tesira® SERVER and Tesira SERVER-IO. The card shall be equipped with dual RJ-45 connectors allowing for interface with devices utilizing the CobraNet® networking protocol. The card shall send up to 4 bundles of up to 8 channels each and receive up to 4 bundles of up to 8 channels each. The card shall operate in a single chassis or over a larger Tesira system in conjunction with other digital networking protocols including AVB and Dante™. The card shall incorporate AES48-2005 Grounding and EMC practices and shall be compliant with the RoHS directive. Warranty shall be 5 years. The digital audio networking card shall be Tesira SCM-1.

SEC-4

The acoustic echo cancellation card shall be a 4-channel card designed exclusively for use with Tesira® SERVER and Tesira SERVER-IO. The modular card shall provide 4 balanced mic or line level inputs on plug-in barrier strip connections. Software configuration and control for each input shall include: gain with clip indicator, phantom power on/off, mute, level, and signal invert. The acoustic echo cancellation algorithm shall be configured and controlled separately in software and include processing for high-pass filtering, automatic gain control and noise reduction. Programmable parameters shall include: conferencing mode, noise reduction, threshold, mute and level. The modular input card shall incorporate AES48-2005 Grounding and EMC practices and shall be compliant with the RoHS directive. Warranty shall be 5 years. The acoustic echo cancellation card shall be Tesira SEC-4.

SIC-4

The input card shall be a 4-channel card designed exclusively for use with Tesira® SERVER and Tesira SERVER-IO. The modular card shall provide 4 balanced inputs on plug-in barrier strip connections. Software configuration and control for each input shall include: gain with clip indication, phantom power on/off, mute, level, and signal invert. Analog-to-Digital conversion shall be 24-bit with a sampling rate of 48kHz. Performance specifications (20Hz˜20kHz) shall be: Frequency Response +0/-0.25dB; THD+N <0.006% (line), <0.040% (mic); EIN <-125dBu; and Dynamic Range >108dB. The modular input card shall incorporate AES48-2005 Grounding and EMC practices and shall be compliant with the RoHS directive. Warranty shall be 5 years. The input card shall be Tesira SIC-4.

SOC-4

The output card shall be a 4-channel card designed exclusively for use with Tesira® SERVER and Tesira SERVER-IO. The modular card shall provide 4 balanced outputs on plug-in barrier strip connections. Software configuration and control for each output shall include: mute, level, signal invert and selectable output reference level (24dBu, 18dBu, 12dBu, 6dBu, 0dBu, -31dBu). Digital-to-Analog conversion shall be 24-bit with a sampling rate of 48kHz. Performance specifications (20Hz-20kHz) shall be: Frequency Response +0/-0.25dB; THD+N < 0.0035%; and Dynamic Range > 110dB. The modular output card shall incorporate AES48-2005 Grounding and EMC practices and shall be compliant with the RoHS directive. Warranty shall be 5 years. The output card shall be Tesira SOC-4.

STC-2

The telephone interface card shall be a two-line, modular card for use with Tesira® SERVER and Tesira SERVER-IO, and shall allow direct connection to standard analog telephone lines. Each channel shall provide normal 2-wire to 4-wire “hybrid” functions, as well as line-echo cancellation, noise suppression, caller ID decoding, ring detection/ validation, DTMF tone dialing, DTMF decoding, and call progress tone decoding. The telephone interface shall allow the Tesira system to respond to DTMF control commands such as preset recalls from any telephone system. The telephone interface may be used for audio input-only applications such as paging access; or for audio output-only applications such as broadcast feeds and remote system monitoring. The telephone interface card shall incorporate AES48-2005 Grounding & EMC practices, and shall be compliant with the RoHS directive. Warranty shall be 5 years. The telephone interface card shall be Tesira STC-2.

TESIRA SERVER CARDS (CONTINUED)

SVC-2

The telephone interface card shall be a two-line, modular card for use with Tesira® SERVER and Tesira SERVER-IO, and shall provide an interface to Voice over Internet Protocol (VoIP) service. The card shall be designed for installation at the factory or in the field. The card shall be equipped with a single RJ-45 connector allowing for up to 2 VoIP telephone lines. The operation shall be software configurable and provide integration over Session Initiation Protocol (SIP) v2 or later. The card shall support multiple standardized codecs including G.711μ, G.77A, G.722, G.729AB, and G.723.1. The VoIP interface card shall incorporate AES48-2005 Grounding and EMC practices and shall be compliant with the RoHS directive. Warranty shall be 5 years. The telephone interface card shall be Tesira SVC-2.

TESIRA REMOTE EXPANDERS

EX-IN, EX-AEC, EX-OUT, EX-IO

The 4-channel expanders shall be designed exclusively for use with Tesira® devices. The expanders shall be built in a half-rack chassis and be powered by PoE+. The expander shall utilize the AVB network for all audio networking as well as software configuration and control. The input, AEC, and input/output expander shall receive mic or line level analog input on plug-in barrier strip connectors. The output and input/output expander shall deliver mic or line level analog output on plug-in barrier strip connectors. Analog-to-Digital and Digital-to-Analog conversion shall be 24-bit with a sampling rate of 48kHz. The expanders shall be CE marked, UL listed and compliant with the RoHS directive. Warranty shall be 5 years. The input expander shall be Tesira EX-IN. The input expander with AEC shall be Tesira EX-AEC. The output expander shall be Tesira EX-OUT. The input/output expander shall be Tesira EX-IO.

EX-LOGIC

The logic expander shall be designed exclusively for use with Tesira® server devices. The expander shall be built in a half-rack chassis and be powered by PoE. Connection to the server for software configuration and control shall be via Ethernet. The expander shall have 16 connections that may be configured as input or output logic controls. As inputs, the connections shall accept a contact closure or 5V TTL input signal. As outputs, the connections shall be open-collector and sink up to 40V/300mA. Additionally, four of the connections shall be configurable to operate as variable voltage control connections. These connections shall accept a variable input or provide a variable output from ground up to +5V. Additionally, any of the 16 connections shall be configurable for direct LED driver capability. The expanders shall be CE marked, UL listed and compliant with the RoHS directive. Warranty shall be 5 years. The logic expander shall be Tesira EX-LOGIC.

TESIRA MODULAR EXPANDER

EX-MOD

The modular expander shall be designed exclusively for use with Tesira® server devices. The expander shall be capable of handling up to three cards of four channels each for a total of 12 channels of analog audio inputs and outputs in various combinations. The expander shall utilize the AVB network for all audio networking as well as software configuration and control. The expander shall have a universal internal power supply: 100 – 240VAC, 50/60Hz. The expander shall provide front panel LED identification of device power, status, alarm, and activity. The expander shall be rack mountable (1RU) and shall be CE marked, UL listed and compliant with the RoHS directive. Warranty shall be 5 years. The modular expander shall be Tesira EX-MOD.

TESIRA EX-MOD CARDS

EEC-4

The input card shall be a 4-channel card designed exclusively for use with Tesira® EX-MOD. The modular card shall provide 4 balanced inputs with AEC on plug-in barrier strip connections. Software configuration and control for each input shall include gain with clip indication, phantom power on/off, mute, level, and signal invert. Analog-to-Digital conversion shall be 24-bit with a sampling rate of 48kHz. Performance specifications (20Hz-20kHz) shall be: Frequency Response +0/-0.25dB; THD+N <0.006% (line), <0.040% (mic); EIN <-125dBu; and Dynamic Range >108dB. The modular input card shall incorporate AES48-2005 Grounding and EMC practices and shall be compliant with the RoHS directive. Warranty shall be 5 years. The input card shall be Tesira EEC-4.

EIC-4

The input card shall be a 4-channel card designed exclusively for use with Tesira® EX-MOD. The modular card shall provide 4 balanced inputs on plug-in barrier strip connections. Software configuration and control for each input shall include gain with clip indication, phantom power on/off, mute, level, and signal invert. Analog-to-Digital conversion shall be 24-bit with a sampling rate of 48kHz. Performance specifications (20Hz-20kHz) shall be: Frequency Response +0/-0.25dB; THD+N <0.006% (line), <0.040% (mic); EIN <-125dBu; and Dynamic Range >108dB. The modular input card shall incorporate AES48-2005 Grounding and EMC practices and shall be compliant with the RoHS directive. Warranty shall be 5 years. The input card shall be Tesira EIC-4.

TESIRA EX-MOD CARDS (CONTINUED)

EIOC-4

The input/output card shall have 2 input and 2 output channels designed exclusively for use with Tesira® EX-MOD. The modular card shall provide 2 balanced inputs and 2 balanced outputs on plug-in barrier strip connections. Software configuration and control for each input shall include gain with clip indication, phantom power on/off, mute, level, and signal invert; whereas for each output shall include mute, level, signal invert, and selectable output reference level (24dBu, 18dBu, 12dBu, 6dBu, 0Bbu, -31dBu). Analog-to Digital and Digital-to-Analog conversion shall be 24-bit with a sampling rate of 48kHz. Performance specifications (20Hz- 20kHz) shall be: Frequency Response +0/-0.25dB. The modular I/O card shall incorporate AES48-2005 Grounding and EMC practices and shall be compliant with the RoHS Directive. Warranty shall be 5 years. The input/output card shall be Tesira EIOC-4.

EOC-4

The output card shall be a 4-channel card designed exclusively for use with Tesira® EX-MOD. The modular card shall provide 4 balanced outputs on plug-in barrier strip connections. Software configuration and control for each output shall include: mute, level, signal invert and selectable output reference level (24dBu, 18dBu, 12dBu, 6dBu, 0dBu, -31dBu). Digital-to-Analog conversion shall be 24-bit with a sampling rate of 48kHz. Performance specifications (20Hz-20kHz) shall be: Frequency Response +0/-0.25dB; THD+N < 0.0035%; and Dynamic Range > 110dB. The modular output card shall incorporate AES48-2005 Grounding and EMC practices and shall be compliant with the RoHS Directive. Warranty shall be 5 years. The output card shall be Tesira EOC-4.

TESIRA CONTROLLERS

TEC-1

The control panel shall provide programmable remote control of volume and selection functions for Biamp's Tesira® products. The control shall be a Power over Ethernet (PoE) network appliance with a graphical display and a capacitive touch scroll wheel for menu navigation and selection. The connection shall be made using a standard RJ-45 or IDC connector. The control shall be available as a surface mounted device that shall not require any type of electrical box be present for mounting and available in another form factor as an in-surface device without a backbox. The control panel shall be made from white PVC/ABS material with UV protection additive. Warranty shall be 5 years. The control panel shall be Tesira TEC-1s for surface mount applications and TEC-1i for in-surface applications.

HD-1

The hardware dialer shall be designed exclusively for use with Tesira® Server-class devices. The dialer shall provide call initiation and termination functions for Biamp Tesira products. The dialer shall be PoE powered. The dialer shall use a single network interface for all communication, configuration, and control via a standard RJ45 connector. The dialer shall have an LCD display screen. The dialer shall have a 12-key dial pad and shall include support for call volume adjustment, call mute, call bridging, on and off hook, hold, and redial last number. The dialer shall support 100-programmable speed dial numbers and feature scroll up/down, phone line 1 and phone line 2 buttons, flash, and 4 navigation buttons. The dialer shall be compliant with the RoHS directive. Warranty shall be five years. The dialer shall be the Tesira HD-1.

TESIRA SOFTWARE

Biamp Canvas™ Software

The control software program shall allow the creation and use of customized computer control screens with Tesira® digital audio systems. The software shall allow function and appearance of the graphic control interface to be tailored to the exact needs of the user. Individual or grouped sets of controls may be placed and assigned to specific system functions, or component objects may be copied directly from the Tesira system design file into the control software, resulting in completely pre-assigned control surfaces. An array of drawing tools shall be provided for extensive graphic manipulation of controls, backgrounds, and labeling. Control screens may be created with the ability to easily navigate between multiple pages of operation. Once created, a custom control file may be downloaded into the Tesira system, where it can then be accessed by multiple network computers which are running the control software. The control software shall not alter the system design itself, and control access to the system shall be password protected. System control may be provided using a combination of the control software, hardware control panels, and third-party RS-232, simultaneously. Minimum recommended system requirements shall be: Windows® 7/8; 1GB RAM; 1280x1024 screen resolution. The control software program shall be Biamp Canvas.

Oreno™ Mobile Control Software

The control software program shall allow the creation and use of customized computer control screens with Tesira digital audio systems. The software shall allow function and arrangement of the graphic control interface to be tailored to the needs of the user. Individual controls may be placed within a template and assigned to specific system functions. Objects may be copied directly from the Tesira system design file into the control software, or an entire Tesira system design file may be imported for use in the control interface creator. Only supported Tesira DSP blocks will be covered by this import. Rooms may be created in the control interface creation software and then control screens assigned to each room.

Once created, a custom control file may be downloaded into the Oreno Manager, where it can then be accessed by multiple network devices which are running compatible browsers. The control system shall not alter the system design itself, and control access to the system may be password protected.

The manager software shall provide a web-based administration console for the customer. Within the administration console user accounts may be created and then granted access to one or more rooms. Also within the administration shall be the capability to connect the control system to one or more Tesira Systems via a LAN connection. The administration console shall also provide access to an event log which shall capture control system events. The administrative console shall provide the capability to enable and disable the remote control system.

Users shall be able to select which control interface they wish to operate via the web-browser of a device. Users may also choose to lock access to that room to other users for the duration of a meeting.
System control may be provided using a combination of the control system, hardware control panels, and third-party RS-232 devices, simultaneously*. Minimum recommended system requirements for the manager software shall be: Windows® Server 2008 / Windows® 7 SP1; 4GB Available HDD space; 4GB RAM; Intel Core i3 or AMD Phenom II 64-bit processor. Compatible web browsers for the administration console shall be: Firefox 34, IE10, Safari 7.1, and Chrome 31. Compatible web browsers for the user interface shall be: Chrome 31+, Firefox 36+, Safari 7.1+ on Mac OSX, IE 10+ on Windows, Safari on ios7+, Android browser 4.4+. The control software program shall be Oreno.

* RS-232 control via presets executing Tesira command strings.

MICROPHONES

CM1

The microphone shall be of the condenser type with a modular threaded capsule available in cardioid and supercardioid polar patterns. The microphone shall be protected from RF interference. The microphone shall have a fully integrated preamp circuitry thereby eliminating the need for a remote preamplifier module. The microphone shall operate on 18-52 Volts DC and the nominal output impedance shall be equal to 150 ohms at 1 kHz. The microphone shall have a sensitivity of 37 mV / Pa at 1 kHz. The microphone shall have a maximum SPL level of ≥130 dB with THD of 0.5%. The microphone shall be machined out of brass and the dimensions shall be 12 mm in diameter by 54 mm in length. The microphone shall be the Biamp CM1.