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TesiraFORTÉ®

OPERATION MANUAL

January 2018

The TesiraFORTÉ products are server-class devices that are designed to operate as standalone processing devices, with Tesira expanders and controllers, or as part of a full set of Tesira devices. TesiraFORTÉ AI, CI and VT products feature 12 analog mic/line level inputs and 8 analog mic/line level outputs in a fixed configuration. TesiraFORTÉ VT4 features 4 analog mic/line level inputs and 4 analog mic/line level outputs in a fixed configuration. All models also include configurable USB audio, 4 GPIO connections, RS-232 serial port, Ethernet control port and an internal power supply with a standard IEC three-conductor removable power cord. The front panel of each TesiraFORTÉ server features an OLED display for system and unit information including the device IP address. The display is navigated with capacitive touch buttons.

The TesiraFORTÉ products are separated into AVB-equipped, Dante-equipped or standalone TesiraFORTÉ devices with no digital audio protocol feature. TesiraFORTÉ VT4 is separated into AVB-equipped, Dante-equipped but does not feature a standalone model (digital audio protocol feature). The models with AVB (Audio Video Bridging) have an additional RJ-45 Ethernet connector for connecting with other Tesira and 3rd party AVB devices through the use of an AVB switch. Dante models feature an RJ-45 Ethernet connector in the place of the AVB RJ-45 connector. This allows other Dante enabled Tesira or 3rd party devices to communicate through the use of switches. The TesiraFORTÉ AVB servers have a capacity of 128 channels of audio in and 128 channels of audio out. TesiraFORTÉ DAN (Dante) models have a capacity of 32 channels of audio in and 32 channels of audio out. The standalone TesiraFORTÉ products have the same features and processing functionality as the AVB and the Dante equipped servers, but without the ability to make a digital audio connection to other Tesira audio devices.



TesiraFORTÉ Front Display

- 1 – Ventilation fan cover
- 2 – Display navigation buttons
- 3 – LED status indicators
- 4 – OLED display

Ventilation fan cover

Each device has a perforated cover to allow cool air into the chassis. A variable speed temperature controlled fan allows air into the front of the unit and out of the rear left side. Ensure that nothing obstructs the front or side of the unit.

Display Navigation Buttons

Capacitive-touch buttons allow navigation through the OLED display menu to view and configure device and networking information, as well as see system-wide faults. Navigating the display is accomplished by touch-sensitive UP and DOWN and SELECT buttons.

LED Status Indicators

Five multi-color LEDs on the front panel of the device provide information about the status of the device and the greater Tesira system.

- Power – Reports power of the host device and Front Panel Display.
- Alarm – Reports abnormal conditions local to the host device.
- Activity – Reports the activity of host device within the greater system.
- Status – Reports the status of host device.
- AIS (Alarm in System) – Reports abnormal conditions within the greater system.

LED	Off	Green	Yellow	Red
Power	Unit is not powered	Unit is powered	Not applicable	Not applicable
Alarm	No fault is active in the device	Not applicable	Minor fault is active in the device	Major fault is active in the device
Activity	Not applicable	The host device is an active part of an active system	Not applicable	The host device is part of an inactive system (Audio is stopped) or host device is not part of a system
Status	Not applicable	Device has received its configuration and is ready to participate in the system	Device is ready and waiting to receive a configuration	Device is not ready to receive its configuration
AIS (Alarm In System)	No fault is active in any device in the system	Not applicable	Minor fault is active in a device in the system	Major fault is active in a device in the system

OLED Display

The OLED display provides information about the server device as well as the Tesira system that is connected to the server. The OLED display is read-only.

Home Screen

The home screen is the default screen that shows the overview of the device. If the text is too long to fit on the entire display, it will scroll to the left. Menus at the bottom allow other selections. By default the main menu icon will be selected.

Some menu icons double as status indicators. They change depending on the status of the device. The fault status icon only appears if there is an active fault in the system.

After a period of inactivity, the Front Panel Display will transition back to this home screen.



To open any of the menus, use the UP and DOWN buttons to highlight the menu icon desired, then press the SELECT button.

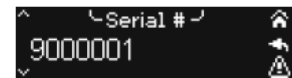
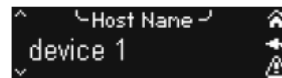
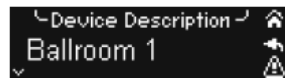
Menu Screen

A menu screen containing a list of items that are used to navigate to other menus can be accessed from the home screen. On the right are icons that provide quick navigation to other screens. Pressing the select button on an item will transition to the screen that displays that information. A scroll indicator at the left shows if there is more information to show by scrolling down.

Device Information

The device information screen shows the following information:

- Device description
- Host name
- Serial number
- Firmware revision



System Information

The system information screen shows the following information:

- Device audio state (on/off)
- System description

Network Parameters

The network parameters screen shows the following information

- Host name
- IP address
- Subnet mask
- Gateway

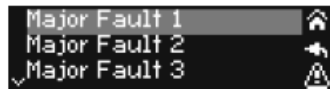
Display Settings

The display settings operations include the following:

- Change brightness and contrast
- Change timeouts

Faults

If a fault is present in the system an exclamation icon is shown on the lower right of the screen. Each unique fault in the system will be listed.



Edit Timeouts

Dim Mode

The display has a screensaver mode where it will dim the display brightness. Pressing any button will bring the screen back to the original brightness and respond to the control movement.

Sleep Mode

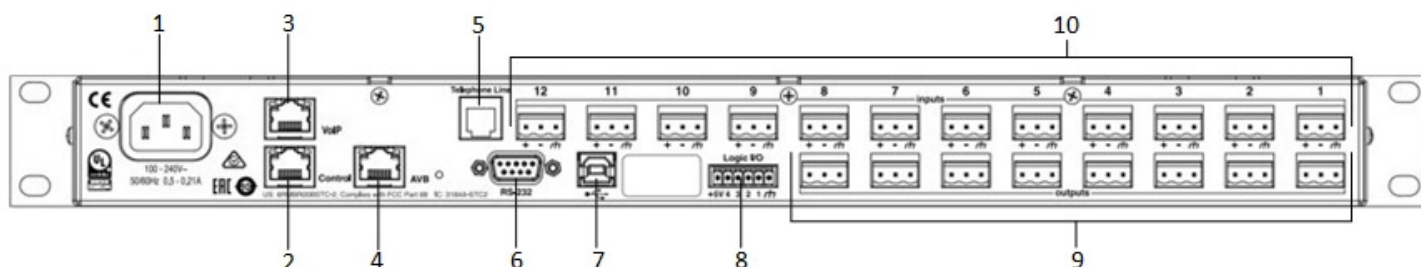
After the display timeout is reached the display will go blank. The device will still have power in this state even though the display appears blank.

Localization

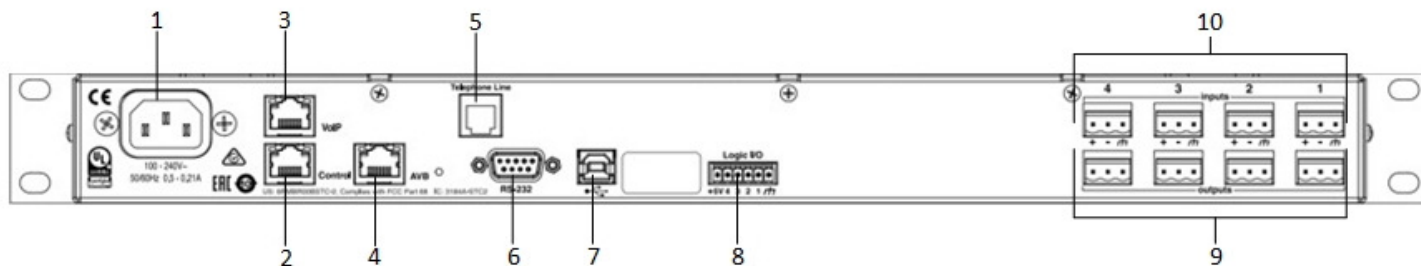
All menus and error messages are displayed in English by default. Descriptive icons are used to avoid the need for messages in specific languages. Text entered (e.g. Device Description) will be displayed in the language as entered in the software.

The following alphabets are supported:

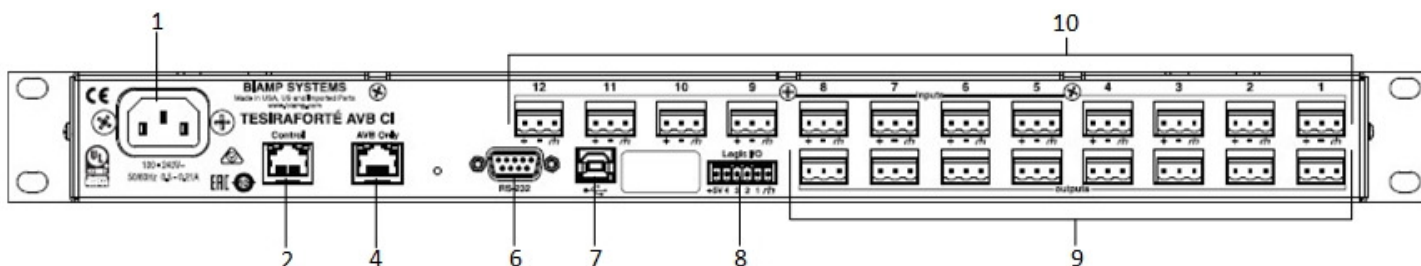
- Latin-1 (ISO/IEC 8859-1) and Latin-2 (ISO/IEC 8859-2)
- Cyrillic (Russian alphabet only)
- Simplified Chinese
- Japanese – Hiragana, Katakana, Kanji
- Thai



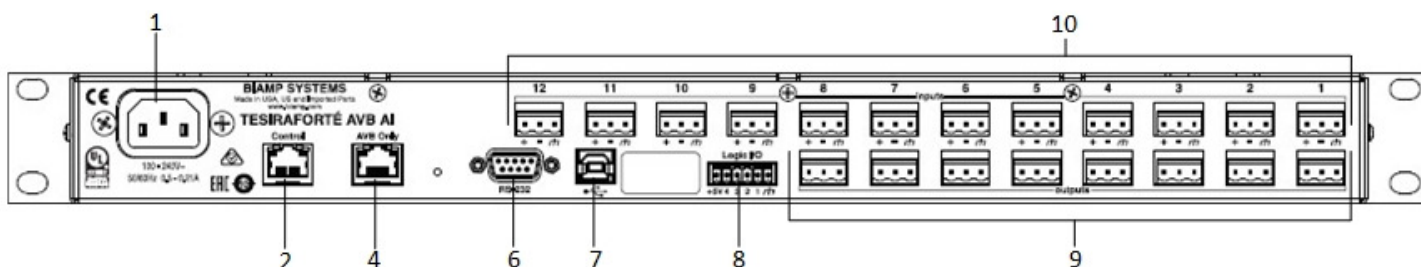
TesiraFORTÉ VT AVB model (Rear Panel View)



TesiraFORTÉ VT4 AVB model (Rear Panel View)



TesiraFORTÉ CI AVB model (Rear Panel View)



TesiraFORTÉ AI AVB model (Rear Panel View)

1. AC power inlet (100 – 240V)	6. RS-232 serial port
2. Gigabit Ethernet control port (RJ-45)	7. USB-B port
3. Voice over IP (VoIP) Telephony port	8. GPIO connections
4. Digital Audio Port AVB port (RJ-45) – AVB models only -or- Dante port (RJ-45) – Dante models only -or- Not present – Standalone TesiraFORTÉ	9. Mic/line level balanced output analog connections. AVB VT, DAN VT and VT – 8x Mic/Line AVB VT4 and DAN VT4 – 4x Mic/Line AVB CI, DAN CI and CI – 8x Mic/Line AVB AI, DAN AI and AI – 8x Mic/Line
5. POTS Analog Telephony port (RJ-11)	10. Mic/line level input balanced analog connections. AVB VT, DAN VT and VT – 12x Mic/Line with AEC AVB VT4 and DAN VT4 – 4x Mic/Line with AEC AVB CI, DAN CI and CI – 12x Mic/Line with AEC AVB AI, DAN AI and AI – 8x Mic/Line

AC Power Inlet

IEC connector which will accept AC mains voltage of 100-240VAC @50/60Hz.

Control Ethernet Port

Gigabit port used to configure the TesiraFORTÉ unit with Tesira and Biamp Canvas™ software. Can also be used to attach additional GPIO, receive third-party commands over IP as well as provide physical control interfaces to a system.

AVB Port (AVB models only) -or- Dante Port (Dante models only)

AVB enabled devices can send and receive up to 128x128 audio channels to other AVB Tesira or 3rd party AVB audio devices. Dante devices can send and receive up to 32x32 audio channels to other Dante Tesira or 3rd party Dante audio devices. It is not possible to order a device with both AVB and Dante functionality. If the device does not feature either of these ports it is a standalone model and does not support the use of a digital audio transport protocol. It is not possible to add, convert or retrofit hardware to make a TesiraFORTÉ a different model or variant.

Telephony Ports

All variants of TesiraFORTÉ VT and TesiraFORTÉ VT4 feature a Voice over IP (VoIP) telephony port and a POTS analog telephony port

RS-232 port

Can be used to receive third party controls or output command strings.

USB Type-B port

Can be used to connect to a PC or a computer that is USB Audio Class 1 compliant. Two connection methods are supported:

1. Connection to a software based codec. It is possible to use either the codec's AEC, or Tesira's AEC functions.
2. Line In/Out mode – where the channels of Line In and Line Out are installed in Microsoft Windows® but do not show up by default.

Getting started

1. Install Tesira software on a Windows PC.
 - The software must be Tesira version 3.2 or later.
 - The most up-to-date version can be downloaded from the Biamp website, <https://www.biamp.com>
2. Minimum PC requirements:
 - Windows® 7 Professional SP1 32-bit or 64-bit, Windows 10 Professional 32-bit or 64-bit
 - 1280 x 1024 screen resolution (recommended)
 - 1 GB RAM
 - Intel® Pentium 4 Processor 2.4 GHz or faster
3. Cables required:
 - Connection to the device should be made using either a direct connection or connection via an Ethernet switch.
 - Direct Connection - 1x Cat5e cable to connect from the PC to the TesiraFORTÉ Control Port
 - Via a Switch - 2x Cat5e cables and 1 Ethernet switch

Connecting to the TesiraFORTÉ system

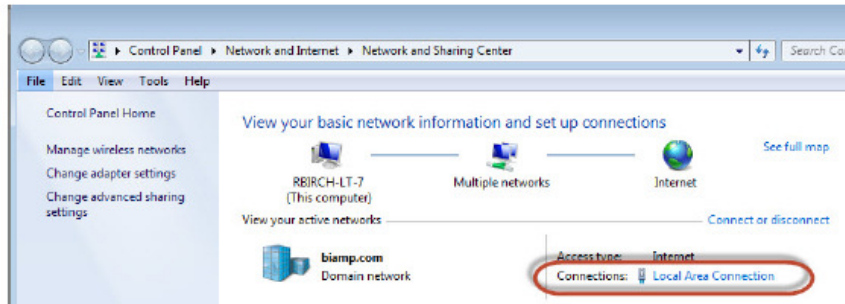
1. Connect the PC and TesiraFORTÉ to the network.
 - Connect a Cat5e cable between your PC and the TesiraFORTÉ device.
 - Direct connection: Attach an Ethernet cable from the PC's network card to the TesiraFORTÉ Ethernet port. The TesiraFORTÉ Ethernet port is autosensing so a straight or crossover cable can be used.
 - Connecting via Ethernet switch: Attach an Ethernet cable from the network card to a 100/1000 Base-T Ethernet switch.
 - The TesiraFORTÉ Ethernet port is autosensing so a straight or crossover cable can be used.
2. Power up TesiraFORTÉ devices:
 - Connect the supplied power cord to a grounded AC mains voltage of 100-240VAC @50/60Hz. Connect the other end of the power cord to the power entrance located on the rear of the TesiraFORTÉ unit. Power, Activity, and Status LEDs on the front panel should illuminate.
3. Assign an IP address to the PC.
 - The PC must have a unique IP address in the same subnet as the TesiraFORTÉ device. A TesiraFORTÉ device is configured from the factory with DHCP or Zero Conf (Link Local) address. If you wish to verify your PC network interface is set correctly, please review the **Setting an IP address section**.
4. Configure the software to use the correct Network Interface.
 - Tesira software should automatically discover the available network interfaces and enable them. If you wish to verify the network interfaces you are using, open the Tesira software and select **Tools > Options > Application settings > Network > Device Discovery**.
 - Selecting Interfaces will list the available connections. These can be enabled or disabled individually. Confirm the expected Network interface is selected and IP addressing is in the correct range.
5. Connect to the network with Tesira software.
 - Open the Tesira software. Connect to the network by going to **System > Network > Connect to System**. The System Connect dialog will appear. Select the required device listed in the System List and press Connect to System ("Connect to System" will not be available for devices that do not have a configuration file loaded to them). The software will connect and allow real time user control. When the required changes have been made, disconnect the PC from the Tesira system by going to **System > Network > Disconnect from system**.

Setting an IP address

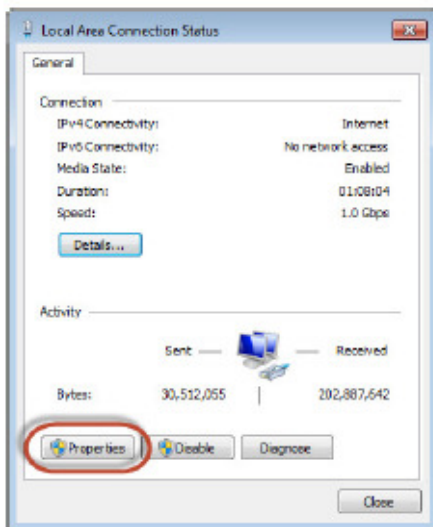
It may be a requirement to configure your PC or TesiraFORTÉ IP address. Please review the following section.

Assigning your computer's IP address

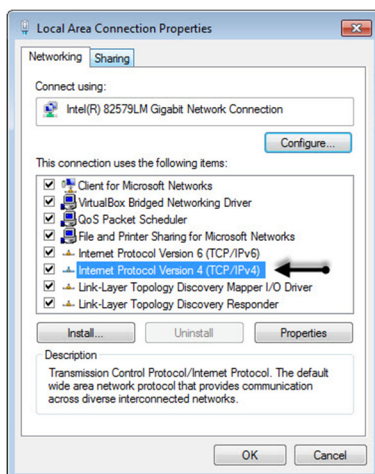
Go to **Control Panel > Network and Sharing Center**. Click on Local Area Connection.



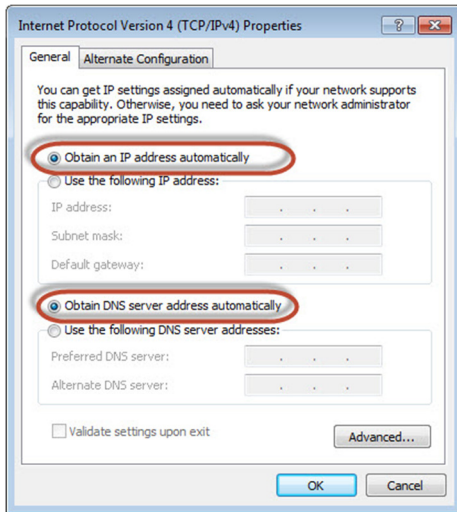
The Local Area Connection Status Dialog will open. Select Properties.



The Local Area Connection Properties Dialog will open. Double-Click Internet Protocol Version 4 (TCP/IPv4).



The Internet Protocol Version 4 (TCP/IPv4) Properties will open.
Update the IP address and Subnet mask to 'Obtain an IP address automatically'



Click OK when complete. Click OK on the Local Area Connection properties dialog to confirm the changes. The PC may take up to one minute to resolve an IP address. If a DHCP server is available the PC will resolve to an address served to it. If no DHCP server is available the PC will resolve to a link local address in the 169.254.xxx.xxx range with a subnet mask of 255.255.0.0.

Auto assignment of IP Address using DHCP

All TesiraFORTÉ units ship from the factory configured for DHCP or Zero Conf (Link Local) address. If a DHCP server is available, the TesiraFORTÉ will resolve to an address served to it. If no DHCP server is available, the TesiraFORTÉ will resolve to a link local address in the 169.254.xxx.xxx range with a subnet of 255.255.0.0.

When using more than one device in a system, each device must have a unique IP address. Tesira device IP addresses must be different from any IP address that will be used on the same network segment. Please note that adjusting a TesiraFORTÉ IP address will stop the system audio.

Manually assigning an IP address

To make changes to the TesiraFORTÉ IP address you must first be disconnected from the system.

- In the Tesira software, go to **System > Network > Perform Device Maintenance**.
- Select the device in the **Device List**. Select **Network Settings**.
- Update the IP Address, Subnet mask and Gateway values to the new settings.
- Click OK when complete.
- Close Device Maintenance when complete.
- Adjust the PC's IP address to reside on the same subnet as the Tesira Device.
- Re-start the system audio as needed.

FCC Part 15 –

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Part 68 –

The following applies to products with a telephone interface:

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the rear of this equipment is information that contains a product identifier in the format US:6RMEQ##TXXXX. If requested, this number must be provided to the telephone company.

This equipment is designed for modular connection with Jack Universal Service Order Codes RJ-14C, RJ-14W.

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. CAUTION: To reduce the risk of fire, use only No. 26 AWG or larger (e.g., 24 AWG) UL Listed or CSA Certified Telecommunication Line Cord.

The Ringer Equivalence Number (REN) is used to determine the number of devices that may be connected to a telephone line. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company. For products approved after July 23, 2001, the REN for this product is part of the product identifier that has the format US:6RMEQ##TXXXX. The digits represented by ## are the REN without a decimal point (e.g., 03 is a REN of 0.3). For earlier products, the REN is separately shown on the label.

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

This equipment is not user serviceable. If trouble is experienced with this equipment, for repair or warranty information, please contact Biamp Systems Corporation, phone number 503.641.7287. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.

If your facility has specially wired alarm equipment connected to the telephone line, ensure the installation of this equipment does not disable your alarm equipment. If you have questions about what will disable alarm equipment, consult your telephone company or a qualified installer.

TesiraFORTÉ VT, TesiraFORTÉ AVB VT, TesiraFORTÉ AVB VT4, TesiraFORTÉ DAN VT, TesiraFORTÉ DAN VT4.

This product meets the applicable Innovation, Science and Economic Development Canada technical specifications.

Le présent produit est conforme aux spécifications techniques applicables d'Innovation, Sciences et Développement économique Canada.

"The Ringer Equivalence Number (REN) indicates the maximum number of devices allowed to be connected to a telephone interface. The termination of an interface may consist of any combination of devices subject only to the requirement that the sum of the RENs of all the devices not exceed five. The REN for TesiraFORTÉ is 0.1.

L'indice d'équivalence de la sonnerie (IES) sert à indiquer le nombre maximal de dispositifs qui peuvent être raccordés à une interface téléphonique. La terminaison d'une interface peut consister en une combinaison quelconque de dispositifs, à la seule condition que la somme des IES de tous les dispositifs n'excède pas cinq. Pour TesiraFORTÉ la valeur de l'IES est 0.1.