TRC4011

4U RACKMOUNT

COMPUTER

&

TVC4403

4U Rackmount

Video Display Wall Controller

No. TRC4011-xxx / TVC4403-xxx Revision C

INSTALLATION GUIDE

Publication No. 8404011-09142

WARRANTY

The following is an abbreviated version of Trenton Systems' warranty policy for rackmount computer products. For a complete warranty statement, contact Trenton or visit our website at http://www.trentonsystems.com/.

All boards used in systems delivered by Trenton are covered under a pass-through warranty. For example, if Trenton PICMG 1.3 boards are used in the system then these boards will carry a five-year warranty. All other system sub-components including but not limited to power supplies, DVDs, CD-ROMS, etc. are covered under their original manufacturer's warranty. All systems built by Trenton are warranted against defects in material, workmanship and design for a period of one year from date of delivery. Repair or replacement products will be warranted for a period of three months from the date of shipment or for the remainder of the original warranty period for that particular product, whichever is longer. Any software or firmware that is delivered by Trenton will be warranted for a period of one year to perform in accordance with published specifications prepared, approved and issued by Trenton and/or the appropriate 3rd party vendor. Contact Trenton for the complete system warranty policy.

Buyer agrees that if a Trenton product proves defective, Trenton is only obligated to repair, replace or refund the purchase price of this product at Trenton's discretion. The warranty is void if the product has been subjected to alteration, neglect, misuse, or abuse; if any repairs have been attempted by anyone other than Trenton; or if failure is caused by accident, acts of God, or other causes beyond the control of Trenton. Trenton reserves the right to make changes or improvements in any product without incurring any obligation to similarly alter products previously purchased.

In no event shall Trenton Systems, Inc. be liable for any defect in hardware or software or loss or inadequacy of data of any kind, or for any direct, indirect, incidental or consequential damages arising out of or in connection with the performance or use of the product or information provided. Trenton Systems, Inc.'s liability shall in no event exceed the purchase price of the product purchased hereunder. The foregoing limitation of liability shall be equally applicable to any service provided by Trenton Systems, Inc.

RETURN POLICY

Products returned for repair must be accompanied by a Return Material Authorization (RMA) number, obtained from Trenton Systems prior to return. Freight on all returned items must be prepaid by the customer, and the customer is responsible for any loss or damage caused by common carrier in transit. Items will be returned from Trenton Systems via Ground, unless prior arrangements are made by the customer for an alternative shipping method

To obtain an RMA number, call us at (800) 875-6031 or (770) 287-3100. We will need the following information:

Return company address and contact
Model name
Serial number from chassis label
Description of the failure

An RMA number will be issued. Mark the RMA number clearly on the outside of each box, include a failure report for each item and return the product(s) to our Gainesville, GA facility:

TRENTON Systems, Inc.
2350 Centennial Drive
Gainesville, GA 30504
Attn: Repair Department

Contact Trenton for our complete service and repair policy.

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LIABILITY DISCLAIMERS

In no event will Trenton Systems be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many system variables and application requirements associated with any particular installation, Trenton Systems cannot assume responsibility or liability for actual system use based on the examples and diagrams. No patent liability is assumed by Trenton Systems with respect to the use of the information, components, equipment or software described in this manual. This manual is as complete and factual as possible at the time of publication; however, the information in this manual may have been updated since that time. Trenton Systems, Inc. reserves the right to change the functions, features or specifications of their products at any time, without notice.

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Handling Precautions

WARNING: This system has internal components which may be damaged by electrostatic discharge.

To protect internal components from electrostatic damage, be sure to observe the following precautions when handling or storing the system:

- The TRC4011 and TVC4403 both have a net chassis weight of approximately 30lbs. (13.62kg). This base chassis weight includes the chassis, a system host board, a 14-slot backplane and a rear-mounted, fixed or redundant power supply. Use proper lifting techniques when moving and installing the system.
- When removing or installing boards and sub-components, keep these components in their static-shielded bag and/or packaging until you are ready to for component installation.
- Handle the sub-components by their edges.
- Do not touch any sub-component I/O connector pins. Do not apply pressure or attach labels to the board-level sub-components.
- Use a grounded wrist strap at your system or ground yourself frequently by touching the metal chassis of the system before handling any sub-components.
- Ensure the systems external power source has a solid connection to an earth ground.
- Use antistatic padding on all work surfaces when installing or removing sub-components.
- Avoid static-inducing carpeted areas.

Before You Begin

INTRODUCTION

It is important to be aware of the information listed below before installing your Trenton rackmount computer. System performance may be affected by incorrect usage of these features.

EXTERNAL POWER SOURCE - FIXED

Incoming AC power must be supplied to the rear-mounted, fixed power supply receptacle located in the rear of the chassis. This AC power connection ensures that the system power supply is connected to a power source with a solid earth ground and is capable of delivering 110-240VAC at 50 to 60Hz.

EXTERNAL POWER SOURCE – REDUNDANT

Incoming AC power must be supplied to both of the receptacles located on the rear of the chassis. This dual AC power connection ensures that the main system power supply as well as the fail-over supply are each connected to a power source with a solid earth ground and is capable of delivering 110-240VAC at 50 to 60Hz. The typical maximum current draw of the rackmount computer is 4.07A per incoming power receptacle.

INTERNAL 5V CURRENT LIMIT

The maximum current limits for the +5V, +3.3V and +12V outputs from the system power supply are 32A, 32A and 65A respectively. The system's power monitoring circuits will shut the system down if these maximum current limits are drawn from the power supply.

CHASSIS AIRFLOW

When installing the chassis, ensure that a minimum free air space is available around the system. The installation should have a minimum of 4-6 inches (101-152mm) behind the chassis and 1-3 inches (25-75mm) in front of the chassis. Any front cabinet doors or access aisles must accommodate a TRC4011 / TVC4403 front chassis clearance of at least 4.0" (102mm) in order to provide proper cable clearances for any front panel I/O port connections and to gain access to the system air filter for maintenance. Ideally, a chassis clearance of 0.5-1.5 inches (13-38mm) above the system is desirable, but not required.

CHASSIS RACK MOUNTING

The TRC4011 / TVC4403 system can be installed in a rackmount cabinet that conforms to EIA standards for computer equipment with 19-inch wide panels. The cabinet must be tall enough to accommodate the computer's height and deep enough to accomendate the system's depth, while providing the proper clearences for air flow and cabling. A cabinet with a standard depth of 31.5 inches (800mm) should be sufficient; however, a rack with a non-standard depth dimension of at least 22 inches (559mm) will provide the suggested minimum front and rear chassis clearances needed for an installation.

Chapter 1 - System Overview

DESCRIPTION

The Trenton TRC4011-xxx / TVC4403-xxx is a CE-compliant and UL recognized*, 4U rackmount computer chassis / video display wall controller that offers choices in HDD and media drive bay configurations with system support for the BPG7087, 14-slot form factor backplane, a choice of a BXT7059, JXT6966 or TSB7053 PICMG 1.3 system host board or SHB and either a fixed or redundant system power supply. This rackmount system can be configured with a single or dual-processor SHB to deliver multi-core performance in advanced rackmount computing applications using the BPG7087 backplane.

The TRC4011 / TVC4403 rackmount chassis supports four 3.5" HDD bays, a Slim-Line optical media bay, an 860W rear-mounted, fixed-mount power supply or an 800W redundant power supply and a front access air filter. These components maximize power delivery and cooling to ensure long-life system reliability with minimal Mean-Time-To-Repair (MTTR) times.

**Refer to the agency approval section in chapter five and the TRC4011 / TVC4403 / TVC4403 Certificate Of Compliance document in chapter six for a complete listing of the Council Directive: 2004/108/EC-EMC Directive standards to which conformity is declared.*

BACKPLANE, SHB & SYSTEM POWER SUPPLY MODELS

NOTE: The chart below illustrates backplanes, SHBs and system power supplies supported in the Trenton TRC4011 / TVC4403-xxx system. The three characters to the right on the hyphen indicate the specific backplane, SHB and power supply combination.

System Model Number	Backplane Model	SHB Model Number	Description of Backplane, SHB and System Power Supply Combination
TRC4011-000	BPG7087	BXT7059	Backplane: 1 SHB Slot, 4 x16 PCIe, 5 x4 PCIe, 1 x4/x1 PCIe and 1 IOB33/PCIe Expansion card slots Note: all PCIe card slots use x16 PCIe mechanical connectors SHB: Dual processor BXT7059 board (part no. 392705901400000) with two Intel® Xeon® E5-2430 processors and six 2GB DDR3-1600 MiniDIMMs installed System Power Supply: 860W, fixed-mount See the BXT7059 web page for more SHB details See the BPG7087 web page for more backplane details
TRC4011-010	BPG7087	JXT6966	Backplane: 1 SHB Slot, 4 x16 PCIe, 5 x4 PCIe, 1 x4/x1 PCIe and 1 IOB33/PCIe Expansion card slots Note: all PCIe card slots use x16 PCIe mechanical connectors SHB: Dual processor JXT6966 board (part no. 392696612500000) with two Intel® Xeon® EC5549 processors and six 4GB DDR3-1333 MiniDIMMs installed System Power Supply: 860W, fixed-mount See the JXT6966 web page for more SHB details See the BPG7087 web page for more backplane details

System Model Number	Backplane Model	SHB Model Number	Description of Backplane SHB and System Power Supply Combination
TRC4011-020	BPG7087	TSB7053	Backplane: 1 SHB Slot, 4 x16 PCIe, 5 x4 PCIe, 1 x4/x1 PCIe and 1 IOB33/PCIe Expansion card slots Note: all PCIe card slots use x16 PCIe mechanical connectors SHB: Single processor TSB7053 board (part no. 392705303400000) with one Intel® Xeon® E3-1275 processor and four standard 4GB DR3-1333 DIMMs installed System Power Supply: 860W, fixed-mount See the TSB7053 web page for more SHB details See the BPG7087 web page for more backplane details
TRC4011-001	BPG7087	BXT7059	Backplane: 1 SHB Slot, 4 x16 PCIe, 5 x4 PCIe, 1 x4/x1 PCIe and 1 IOB33/PCIe Expansion card slots Note: all PCIe card slots use x16 PCIe mechanical connectors SHB: Dual processor BXT7059 board (part no. 392705901400000) with two Intel® Xeon® E5-2430 processors and six 2GB DDR3-1600 MiniDIMMs installed System Power Supply: 800W, redundant See the BXT7059 web page for more SHB details See the BPG7087 web page for more backplane details
TRC4011-011 -OR- TVC4403-011	BPG7087	JXT6966	Backplane: 1 SHB Slot, 4 x16 PCIe, 5 x4 PCIe, 1 x4/x1 PCIe and 1 IOB33/PCIe Expansion card slots Note: all PCIe card slots use x16 PCIe mechanical connectors SHB: Dual processor JXT6966 board (part no. 392696612500000) with two Intel® Xeon® EC5549 processors and six 4GB DDR3-1333 MiniDIMMs installed System Power Supply: 800W, redundant See the JXT6966 web page for more SHB details See the BPG7087 web page for more backplane details
TRC4011-021	BPG7087	TSB7053	Backplane: 1 SHB Slot, 4 x16 PCIe, 5 x4 PCIe, 1 x4/x1 PCIe and 1 IOB33/PCIe Expansion card slots Note: all PCIe card slots use x16 PCIe mechanical connectors SHB: Single processor TSB7053 board (part no. 392705303400000) with one Intel® Xeon® E3-1275 processor and four standard 4GB DR3-1333 DIMMs installed System Power Supply: 800W, redundant See the TSB7053 web page for more SHB details See the BPG7087 web page for more backplane details

ADDITIONAL SYSTEM ELEMENTS

Each TRC4011-xxx / TVC4403-xxx configuration contains the following active components:

- 1 – SATAIII, 3.5" HDD, 500GB, fixed mount
- 1 – Slim-Line R/W DVD
- 1 – 860W fixed or 800 W redundant, rear-mounted PS2 power supply
- 1 – Fan control kit
- 3 – 102CFM system fans

Consult with Trenton for available storage drives and optical media drives compatible with the TRC4011 / TVC4403 / TVC4403.

SHB BATTERY

CAUTION: Risk of explosion if the system host board battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

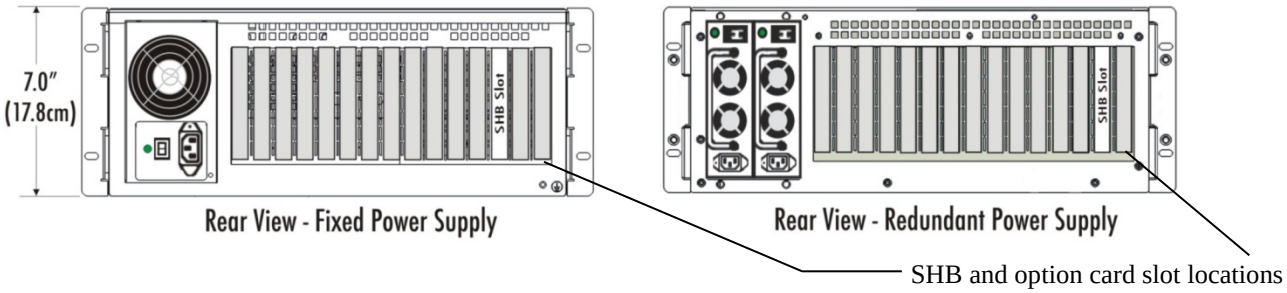
PACKING LIST

Trenton TRC4011 / TVC4403 is shipped with the following

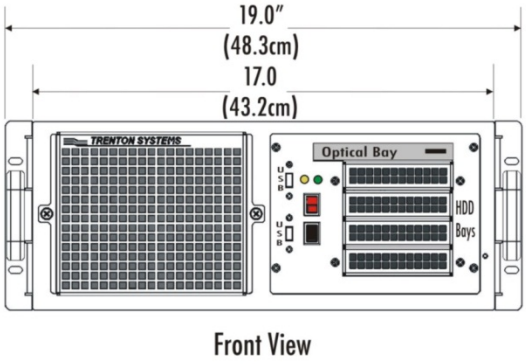
- TRC4011 4U rackmount computer / TRC4403 4U video display wall controller
- One or two, 10ft. (3.1m) AC power cord(s)

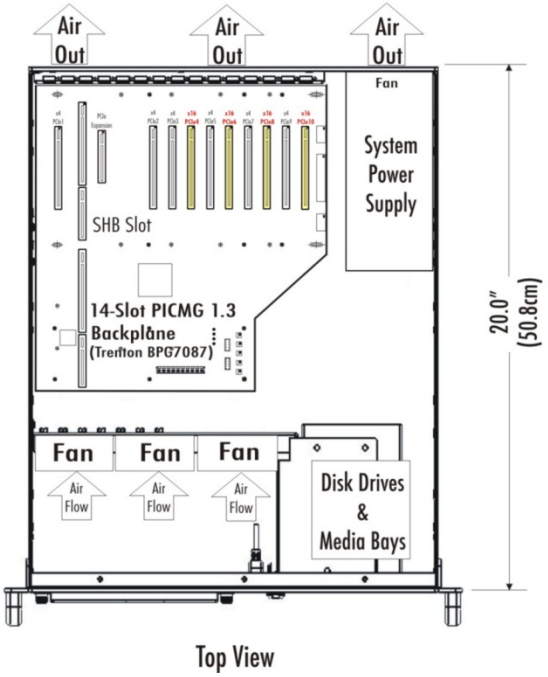
Chapter 2 - Physical Dimensions & Layout Drawings

LAYOUT DIMENSION DRAWING



Note: Ensure that there is at least 4-6 inches (101-152mm) front and rear chassis clearance for cable connections and airflow.





Chapter 3 - Installation Instructions

ENVIRONMENTAL CONSIDERATIONS

When installing the chassis, ensure that a minimum free air space is available around the system. The installation should have a minimum of 4-6 inches (101-152mm) in front of and behind the chassis and 1-3 inches (25-75mm) in front of the chassis. Ideally, a chassis clearance of 0.5-1.5 inches (13-38mm) above the system is desirable, but not required. The computer is equipped with fans to help ensure proper cooling.

RACK MOUNTING

The TRC4011 / TVC4403 system can be installed in a rackmount cabinet that conforms to EIA standards for computer equipment with 19-inch wide panels. The cabinet must be tall enough to accommodate the computer's height and deep enough to accomendate the system's depth, while providing the proper clearences for air flow and cabling. A cabinet with a standard depth of 31.5 inches (800mm) should be sufficient; however, a rack with a non-standard depth dimension of at least 26 inches (660mm) will provide the suggested minimum front and rear chassis clearances needed for an installation.

The TRC4011 / TVC4403 is designed to be supported in the cabinet with rack slides or placed on a cabinet shelf. The front flanges of the computer are designed to secure the TRC4011 / TVC4403 to the rack cabinet's front mounting rails

RACKMOUNT INSTRUCTIONS

A) Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

B) Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

C) Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

D) Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on over current protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

E) Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

F) Chassis Access – Use in a RESTRICTED ACCESS LOCATION only.

NOTE: Only trained personnel shall install or operate this equipment

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SLIDE RAIL INSTALLATION

Trenton offers a slide rail kit to help with the installation of a 4U Trenton Systems' computer chassis. Here are the installation instructions Trenton 18" Slide Rail kit.

1. Remove slide rails from the box along with the rail frames, optional rack frame mounting brackets and the mounting hardware. The Trenton 18" Slide Rail kit includes the following items.
   - 2, 18" slide rails
   - 4, rail frames
   - 4, rack frame mounting brackets (optional)
   - 1, mounting hardware bag number S-047-0 includes:
   - 10 mounting rail to computer chassis screws
   - 1, mounting hardware bag number S-017-1 includes
   - 36 rail frame to 19" rack mounting screws
   - 10 nuts
   - 10 flat washer
2. Take one of the slide rails and slide the inside portion of the rail completely out until you hear an audible click.
3. On the inside of the rail, you will see a rail stop hook, push the hook up to release and detach the inside portion of the slide completely from the outside portion of the rack slide.
4. Set aside this inside portion of the rack slide. You will be mounting this part of the rack slide to a side of the computer chassis later in this procedure.
5. Repeat steps 3 and 4 for the other rack slide. (Refer to figure 1 as necessary)

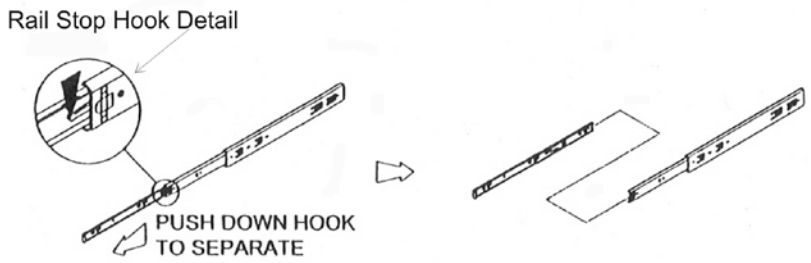


Figure 1 – Rail Stop Hook Detail

6. Using four mounting screws from hardware bag S-047-0, attach an inside rail to the left side of the computer chassis as shown in figure 2. Note – the rubber bumper on the inside rail slide needs to be facing toward the front of the computer and the cut-out portion of the rail release latch should be pointing downward indicating that the slide rail has been properly mounted to the correct side of the computer chassis.

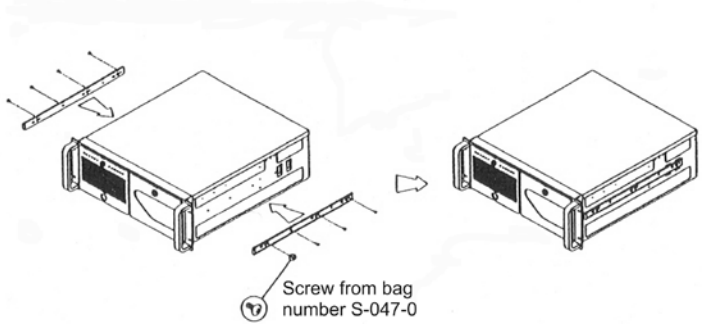


Figure 2 – Inside Rail Mounting Detail

7. Repeat step 6 for the right side on the computer and refer to figure 2 as necessary.
8. Standard 19" instrument racks have a wide variety of mounting hole types. Some mounting holes are threaded, but most of not, some mounting holes are located on side flanges rather than the front and back of the rack supports and finally some holes are round while others are rectangular.

The following steps assume that your 19" instrument rack has round, non-threaded mounting holes for the slide rail frames. The optional rack frame mounting brackets accommodate the side flange rackmount hole placements. If your rack has other mounting hole types or placements, then you may need to consult with your rack supplier to obtain the correct slide rail mounting hardware.

9. The rubber bumper on the outside portion of slide rails are to be located toward the rear of the 19"rack.
10. Refer to figure 3 and attach two rail frames each to the outside portion of both rack slides using the hardware in bag number S-107-1.

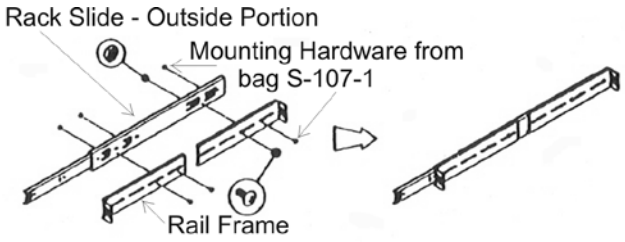


Figure 3 – Outside Rail and Frame Assembly

11. If the mounting holes are on the inside portions of your rackmount supports, then mount each assembly directly to the rack supports as shown in figure 4-A.

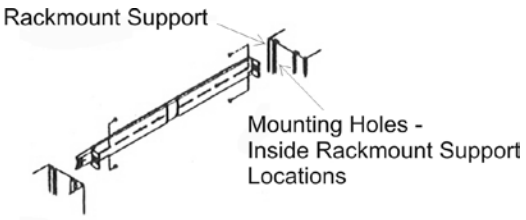


Figure 4A – Rail/Frame Mounting – Inside Rackmount Hole Locations

12. If the mounting holes are located on side flanges then you will need to use the optional rack frame mounting brackets.
13. Attach the optional brackets to the rack slides as shown in figure 4-B and attach the completed assembly to the rack supports.

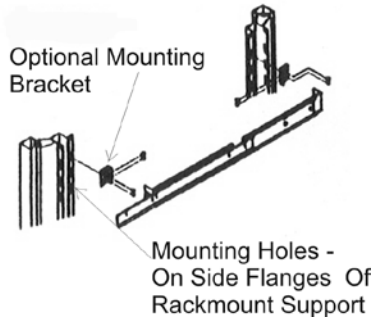


Figure 4B – Rail/Frame Mounting – Side Flange Rackmount Hole Locations

14. You will need to supply the hardware necessary to mount your completed rail and frame assemblies to the rackmount enclosure supports.
15. CAUTION – Ensure that when mounting the completed rail and frame assemblies to the 19" rack that the left and right assemblies are the same distance from the top or bottom of the rack. Failure to align the slide rails properly will result in the computer not being level inside the rack. If the slides are grossly misaligned then you may not be able to slide the chassis into the slide rails.
16. Refer to figure 5 and slide the chassis into the rails attached to the frame of the rackmount enclosure. (You should have another person help you lift and slide the chassis into the enclosure.)

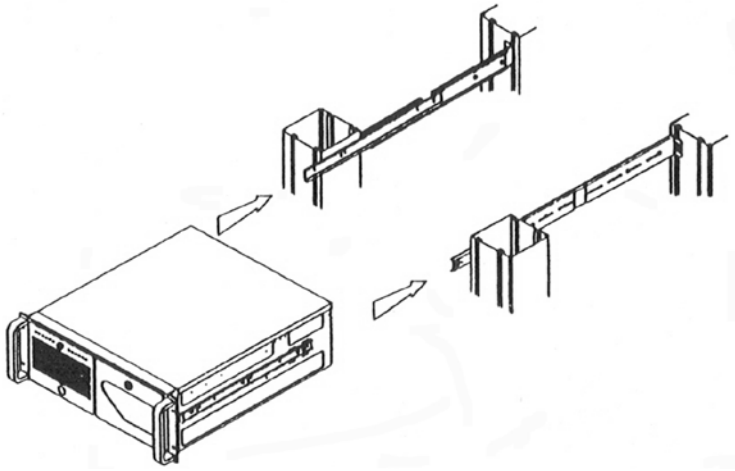


Figure 5 – Chassis Installation

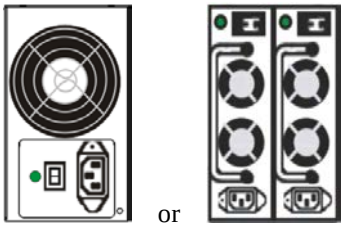
17. You should hear and audible "click" when the rail stop hooks on the slide engage with the chassis stops inside the rails mounted to the enclosure supports.
18. Push up on the rail stop hooks and push the chassis completely into the enclosure.
19. Each Trenton System chassis has two through holes on each chassis-mounting flange. Use these holes to secure your chassis to the enclosure. (Note: The hardware used in this step is highly dependent on your enclosure type; therefore, Trenton does not provide the hardware for this step.)
20. Contact Trenton Systems if you require additional assistance.

CONNECTING AC POWER

The TRC4011 / TVC4403 requires a single-phase power source providing 110-240VAC at 50 to 60Hz to the AC input power outlet located at the rear of the chassis. Power must be available at the three-pin AC input receptacle located on the supply at the rear of the system. An over-current protection device shall protect the power cord.

To connect AC power to the computer:

1. Establish a chassis to earth ground connection to the TRC4011 / TVC4403 chassis.



or

2. Connect the AC power cord(s) to the AC receptacle(s).
3. Connect the plug end of the power cord(s) into the main outlet.

NOTE: The maximum current limits for the +5V, +3.3V and +12V outputs from the system power supply are 32A, 32A and 65A respectively. The system's power monitoring circuits will shut the system down if these maximum current limits are drawn from the power supply.

Chapter 4 - Replacing System Components

OPENING THE TRC4011 / TVC4403

A trained electronics technician may need to remove the top cover of the TRC4011 / TVC4403 to install or remove the option cards.

NOTE: When installing option cards into the TRC4011 / TVC4403 rackmount computer you must ensure that the card installation does not result in non-comformance to the safety or EMC requirements for this product.

To open the computer:

1. Disconnect the AC power cord
2. Remove the nine (9) screws attaching the cover to the chassis. There are three screws on the right and left-side of the chassis, two screws on the back of the chassis and one screw on the top securing the cover to the chassis
3. Slide the cover back slightly and lift it off the chassis
4. Ensure you are properly grounded before installing or removing option cards
5. Remove the option card hold down bar to install or remove cards

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NOTE: <u>NEVER install or remove any option card from a backplane if any +5V AUX / Standby LED is ON.</u>

REPLACING COMPONENTS

The system fans and storage drives for the TRC4011 / TVC4403 are designed for easy access. Make sure you have a top chassis clearance of at least 6" (152mm) to remove or install system cards.

COOLING FANS

The three cooling fans of the TRC4011 / TVC4403 are mounted along the top of the chassis. Each fan is secured to a fan carrier and can be removed by loosing the two thumbscrews and lifting out the assembly. A connector on the fan carrier connects each fan to the chassis' +12V supply line.

STORAGE DRIVES

The fixed-mount storage drives of the TRC4011 / TVC4403 are mounted to the drive bay to allow easy insertion and removal from the chassis. You will need to remove the chassis' top cover in order to replace a fixed-mounted HDD or optical drive. The number of HDDs used is dependent on your specific system requirements. The HDD and optical media drive bays are located to the right of the system's power and reset switches.

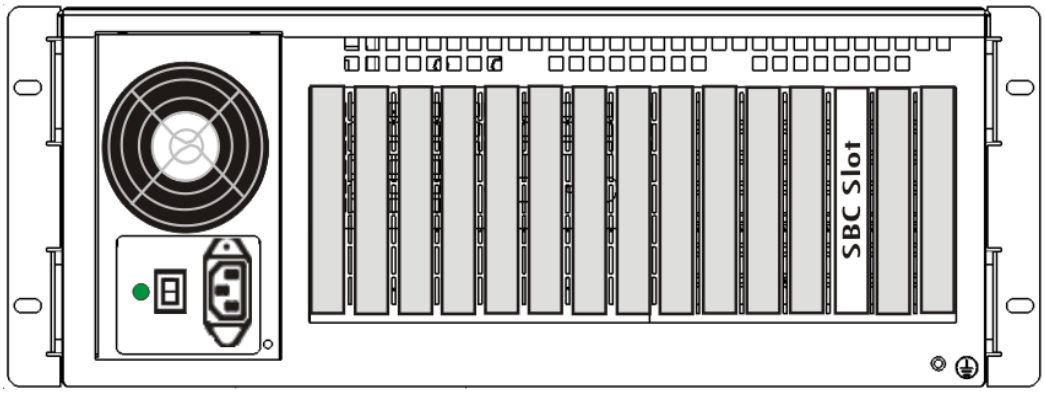
Some HDDs are may utilize a drive carrier. Drive carrier mounted HDDs are secured to the chassis with either a black slide catch or a thumbscrew. Either slide the black HDD catch to the left or loosen the HDD carrier's thumbscrew to grasp the drive carrier handle and then pull out the carrier to remove. Once the carrier is removed, you may mount or remove the drive or drives as necessary.

AIR FILTER

As the system ages and depending on the installation you may need to periodcally clean or replace the system's air filter. The filter cleaning/replacement frequency is highly dependent on the installation environment, but should be done at least once a year. Loosen the thumbscrews on either side of the filter guard and remove the filter located inside for cleaning or replacement.

POWER SUPPLY - FIXED

The 860W rear-mounted, fixed power supply option used in the TRC4011 / TVC4403 rackmount computer is shown in the figure below.

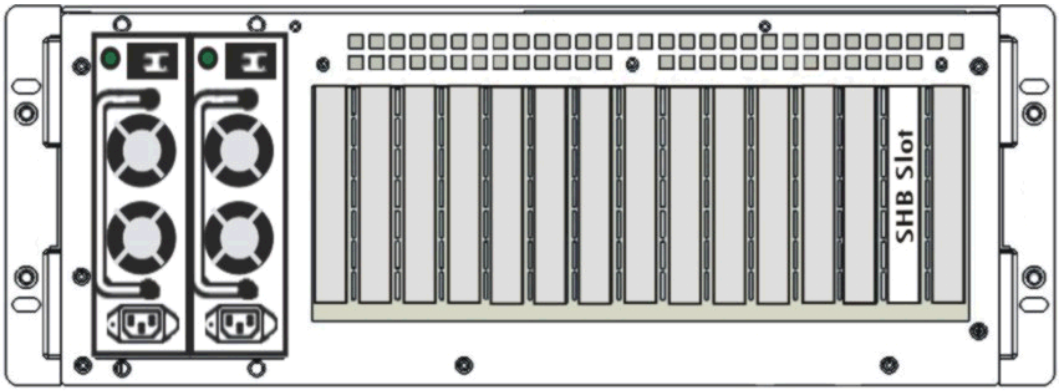


Rear View

The system's fixed-mount, rear-mounted, fixed power supply should only be removed and replaced by a trained electronics technician.

POWER SUPPLY - REDUNDANT

The 800W rear-mounted, redundant power supply option used in the TRC4011 / TVC4403 rackmount computer is shown in the figure below.



The system's redundant, rear-mounted, power supplies should only be removed and replaced by a trained electronics technician.

NOTE: The maximum current limits for the +5V, +3.3V and +12V outputs from the system power supply are 32A, 32A and 65A respectively. The system's power monitoring circuits will shut the system down if these maximum current limits are drawn from the power supply.

CAUTION: Risk of explosion if the system host board battery is replaced by and incorrect type. Dispose of used batteries according to the instructions.

PREPARATION FOR SHIPMENT

The TRC4011 / TVC4403 should always be removed from the rack cabinet if the unit must be shipped to another site. If possible, use the original shipping carton to ship the TRC4011 / TVC4403.

NOTE: Never ship the TRC4011 / TVC4403 when it is mounted inside a rack; damage to the computer and rack cabinet will likely result.

Reverse the installation steps in chapter three to remove the TRC4011 / TVC4403 from the rack cabinet. Do not forget to remove the chassis' earth ground wire before attempting computer removal.

Chapter 5 - Chassis Specifications

ENVIRONMENTAL

Temperature	
Operating	5°C to 35°C typical
Storage	-20°C to 70°C
Cold Excursion Temp	-40°C for up to sixteen hours
Relative Humidity	5% to 90%, non-condensing

Specific operating temperature ranges for the TRC4011 / TVC4403 are dependent on the number of option cards and other system components installed. Extended operating temperature CPUs resulting in a system's achievable operating temperature range higher than what is stated here may be available for use on the system host inside the TRC4011 / TVC4403. The reverse can also be true in that a system subcomponent could have a lower operating temperature range that could lower the system's overall operating temperature range. Contact Trenton for more details.

ELECTRICAL

Line Voltage	110-240VAC
Line Frequency	50-60Hz
Power Consumption	450W typical, 800W or 860W max.

PHYSICAL

Approximate Dimensions (W x H x D)	19" x 7.0" x 20.0" 48.3cm x 17.8cm x 50.8cm
Net Weight	24 lbs. (10.9 kg) (doesn't include option cards)

SHOCK & VIBRATION

Shock - Class 3M4 operational and non-operational under EN60721-3-3	10G operating; 100m/s^2 ; Type I
Vibration - Class 3M4 operational and non-operational under EN60721-3-3	Sinusoidal Vibration: 1G; 3mm; 10 m/s2; 2-9 9-200Hz

AGENCY APPROVAL

UL	UL recognized product listed in file #E208896-A3-UL dated 2013-02-28
Environmental	IEC 60721-3-3:2002 including Class 3K3, 3Z3, 3Z4, 3M4 and 3S2 IEC 60721-3-2:1997 including Class IE23 and 2M3
CE – ECM Directive 2004/108/EC including EMI/EMC	IEC61000-6-4:2006 & IEC61000-6-2:2005 including: CISPR22:1997 + A1:2000 + A2:2002ClassA, IEC61000-3-2:2005, IEC61000-3-3:2008, IEC61000-4-2:2008, IEC61000-4-3:2008 + A1:2010, IEC61000-4-4:2004 + Al:2010, IEC61000-4-5:2005, IEC61000-4-6:2008, IEC61000-4-8:2009 & IEC61000-4-11:2004

Chapter 6 - CE & FCC Part 15 Subpart B Certificates of Compliance

TRC4011-000 CE Certificate of Compliance – BXT7059, BPG7087 and Fixed PS Configuration

Certificate Of Compliance

(Application of Council Directive: 2004/108/EC - EMC Directive)
Standards to which Conformity is Declared:
EN 61000-6-4: 2007 including: EN 55022: 2010 + A1 Class A,
EN 61000-3-2: 2006, EN 61000-3-3: 2008
EN 61000-6-2: 2005 including: EN 61000-4-2: 2009, EN 61000-4-3: 2006,
EN 61000-4-4: 2004, EN 61000-4-5: 2006, EN 61000-4-6: 2009, EN 61000-4-8: 2010
and EN 61000-4-11: 2004

Applicant: Address:	Trenton Systems 2350 Centennial Drive Gainesille, GA 30504 Tel: 770.287.3100 Fax: 770.287.3150
Product Tested: Subsystems:	4U Rackmount Server TRC4011-000 SHB: BXT7059 Backplane: BPG7087 Power Supply: PSt
Tested By:	ITC Engineering Services, Inc. 9959 Calaveras Road, PO Box 543 Sunol, California 94586-0543 Tel: (925) 862-2944 Fax: (925) 862-9013 Email: itcemc@itcemc.com http://www.itcemc.com
Date of Issue: Report Number:	November 21, 2012 20121004-01A CE

I, the undersigned hereby declare that the model(s) listed above
was tested and conforms to the Directives and Standards listed above.

Certified By: Date November 21, 2012

Mr. Michael Gbadebo, PE
(California License # 11303)
Chief Engineer/Principal Consultant

TRC4011-010 CE Certificate of Compliance – JXT6966, BPG7087 and Fixed PS Configuration

Certificate Of Compliance

Rev. 2

(Application of Council Directive: 2004/108/EC - EMC Directive)

Standards to which Conformity is Declared:

EN 61000-6-4: 2007 including: EN 55022: 2010 +A1 Class A,
EN 61000-3-2: 2006, EN 61000-3-3: 2008
EN 61000-6-2: 2005 including: EN 61000-4-2: 2009, EN 61000-4-3: 2006,
EN 61000-4-4: 2004, EN 61000-4-5: 2006, EN 61000-4-6: 2009,
EN 61000-4-8: 2010 and EN 61000-4-11: 2004

Applicant:	Trenton Systems
Address:	2350 Centennial Drive Gainesille, GA 30504 Tel: 770.287.3100 Fax: 770.287.3150
Product Tested:	4U Rackmount Server TRC4011-010
Subsystems:	SHB: JXT6966 Backplane: BPG7087 Power Supply: PS1
Tested By:	ITC Engineering Services, Inc. 9959 Calaveras Road, PO Box 543 Sunol, California 94586-0543 Tel: (925) 862-2944 Fax: (925) 862-9013 Email: itcemc@itcemc.com http://www.itcemc.com
Date of Issue:	November 21, 2012
Report Number:	20121004-01B CE

I, the undersigned hereby declare that the model(s) listed above
was tested and conforms to the Directives and Standards listed above.

Certified By: Date November 21, 2012

Mr. Michael Gbadebo, PE
(California License # 11303)
Chief Engineer/Principal Consultant

TRC4011-020 CE Certificate of Compliance – TSB7053, BPG7087 and Fixed PS Configuration

Certificate Of Compliance

Rev. 2

(Application of Council Directive: 2004/108/EC - EMC Directive)

Standards to which Conformity is Declared:
EN 61000-6-4: 2007 including: EN 55022: 2010 +A1 Class A,
EN 61000-3-2: 2006, EN 61000-3-3: 2008
EN 61000-6-2: 2005 including: EN 61000-4-2: 2009, EN 61000-4-3: 2006,
EN 61000-4-4: 2004, EN 61000-4-5: 2006, EN 61000-4-6: 2009,
EN 61000-4-8: 2010 and EN 61000-4-11: 2004

Applicant:	Trenton Systems
Address:	2350 Centennial Drive Gainesille, GA 30504 Tel: 770.287.3100 Fax: 770.287.3150
Product Tested:	4U Rackmount Server TRC4011-020
Subsystems:	SHB: TSB7053 Backplane: BPG7087 Power Supply: PSI
Tested By:	ITC Engineering Services, Inc. 9959 Calaveras Road, PO Box 543 Sunol, California 94586-0543 Tel: (925) 862-2944 Fax: (925) 862-9013 Email: itcemc@itcemc.com http://www.itcemc.com
Date of Issue:	November 21, 2012
Report Number:	20121004-01C CE

I, the undersigned hereby declare that the model(s) listed above
was tested and conforms to the Directives and Standards listed above.

Certified By: Date November 21, 2012

Mr. Michael Gbadebo, PE
(California License # 11303)
Chief Engineer/Principal Consultant

TRC4011-001 CE Certificate of Compliance – BXT7059, BPG7087 and Redundant PS Configuration

Certificate Of Compliance

Rev. 1

(Application of Council Directive: 2004/108/EC - EMC Directive)

Standards to which Conformity is Declared:
EN 61000-6-4: 2007 including: EN 55022: 2010 +A1 Class A,
EN 61000-3-2: 2006 +A2:2009, EN 61000-3-3: 2008
EN 61000-6-2: 2005 including: EN 61000-4-2: 2009, EN 61000-4-3: 2006,
EN 61000-4-4: 2004, EN 61000-4-5: 2006, EN 61000-4-6: 2009,
EN 61000-4-8: 2010 and EN 61000-4-11:2004

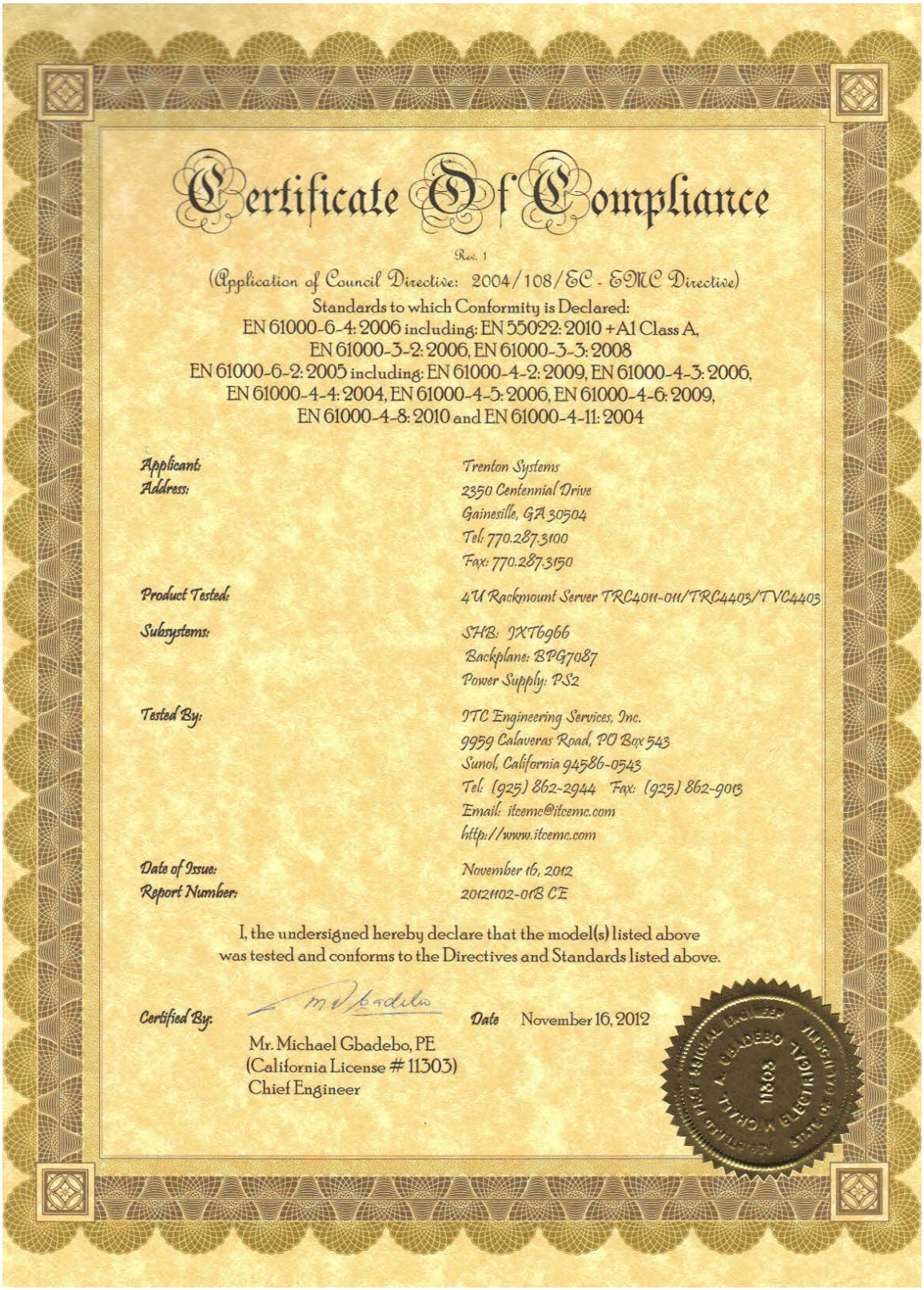
Applicant:	Trenton Systems
Address:	2350 Centennial Drive Gainesille, GA 30504 Tel: 770.287.3100 Fax: 770.287.3150
Product Tested:	4U Rackmount Server TRC4011-001
Subsystems:	SHB: BXT7059 Backplane: BPG7087 Power Supply: PS2
Tested By:	ITC Engineering Services, Inc. 9959 Calaveras Road, PO Box 543 Sunol, California 94586-0543 Tel: (925) 862-2944 Fax: (925) 862-9013 Email: itcemc@itcemc.com http://www.itcemc.com
Date of Issue:	November 16, 2012
Report Number:	20121102-01A CE

I, the undersigned hereby declare that the model(s) listed above was tested and conforms to the Directives and Standards listed above.

Certified By: Date November 16, 2012

Mr. Michael Gbadebo, PE
(California License # 11303)
Chief Engineer

TRC4011-011 CE Certificate of Compliance – JXT6966, BPG7087 and Redundant PS Configuration



Certificate Of Compliance

Rev. 1

(Application of Council Directive: 2004/108/EC - EMC Directive)

Standards to which Conformity is Declared:
EN 61000-6-4: 2006 including: EN 55022: 2010 +A1 Class A,
EN 61000-3-2: 2006, EN 61000-3-3: 2008
EN 61000-6-2: 2005 including: EN 61000-4-2: 2009, EN 61000-4-3: 2006,
EN 61000-4-4: 2004, EN 61000-4-5: 2006, EN 61000-4-6: 2009,
EN 61000-4-8: 2010 and EN 61000-4-11: 2004

Applicant: Address:	Trenton Systems 2350 Centennial Drive Gainesville, GA 30504 Tel: 770.287.3100 Fax: 770.287.3150
Product Tested:	4U Rackmount Server TRC4011-011/TRC4403/TVC4403
Subsystems:	SHB: JXT6966 Backplane: BPG7087 Power Supply: PS2
Tested By:	ITC Engineering Services, Inc. 9959 Calaveras Road, PO Box 543 Sunol, California 94586-0543 Tel: (925) 862-2944 Fax: (925) 862-9013 Email: itcemc@itcemc.com http://www.itcemc.com
Date of Issue: Report Number:	November 16, 2012 20121102-01B CE

I, the undersigned hereby declare that the model(s) listed above was tested and conforms to the Directives and Standards listed above.

Certified By: Date November 16, 2012

Mr. Michael Gbadebo, PE
(California License # 11303)
Chief Engineer

TRC4011-021 CE Certificate of Compliance – TSB7053, BPG7087 and Redundant PS Configuration

Certificate Of Compliance

Rev. 1

(Application of Council Directive: 2004/108/EC - EMC Directive)

Standards to which Conformity is Declared:
EN 61000-6-4: 2007 including: EN 55022: 2010 +A1 Class A,
EN 61000-3-2: 2006, EN 61000-3-3: 2008
EN 61000-6-2: 2005 including: EN 61000-4-2: 2009, EN 61000-4-3: 2006,
EN 61000-4-4: 2004, EN 61000-4-5: 2006, EN 61000-4-6: 2009,
EN 61000-4-8: 2010 and EN 61000-4-11: 2004

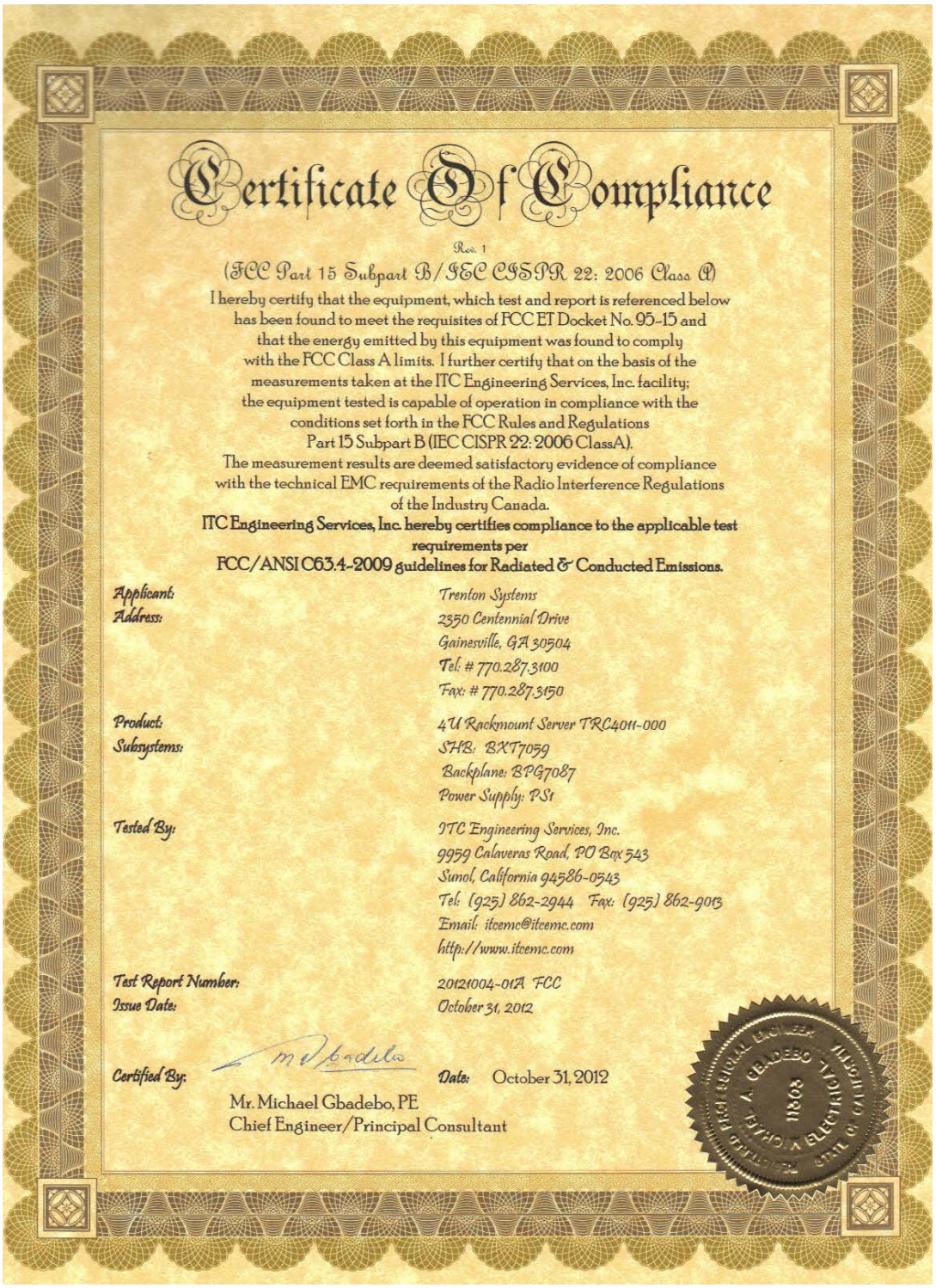
Applicant: Address:	Trenton Systems 2350 Centennial Drive Gainesville, GA 30504 Tel: 770.287.3100 Fax: 770.287.3150
Product Tested: Subsystems:	4U Rackmount Server TRC4011-021 SHB: TSB7053 Backplane: BPG7087 Power Supply: PS2
Tested By:	ITC Engineering Services, Inc. 9959 Calaveras Road, PO Box 543 Sunol, California 94586-0543 Tel: (925) 862-2944 Fax: (925) 862-9013 Email: itcemc@itcemc.com http://www.itcemc.com
Date of Issue: Report Number:	November 16, 2012 20121102-01C CE

I, the undersigned hereby declare that the model(s) listed above was tested and conforms to the Directives and Standards listed above.

Certified By: Date November 16, 2012

Mr. Michael Gbadebo, PE
(California License # 11303)
Chief Engineer

TRC4011-000 FCC Part 15 Subpart B Certificate of Compliance – BXT7059, BPG7087 and Fixed PS Configuration



Certificate Of Compliance

Rev. 1

(FCC Part 15 Subpart B/IEC CISPR 22: 2006 Class A)

I hereby certify that the equipment, which test and report is referenced below has been found to meet the requisites of FCC ET Docket No. 95-15 and that the energy emitted by this equipment was found to comply with the FCC Class A limits. I further certify that on the basis of the measurements taken at the ITC Engineering Services, Inc. facility; the equipment tested is capable of operation in compliance with the conditions set forth in the FCC Rules and Regulations Part 15 Subpart B (IEC CISPR 22: 2006 ClassA). The measurement results are deemed satisfactory evidence of compliance with the technical EMC requirements of the Radio Interference Regulations of the Industry Canada.

ITC Engineering Services, Inc. hereby certifies compliance to the applicable test requirements per FCC/ANSI C63.4-2009 guidelines for Radiated & Conducted Emissions.

Applicant:	*Trenton Systems*
Address:	*2350 Centennial Drive* *Gainesville, GA 30504* *Tel: # 770.287.3100* *Fax: # 770.287.3150*
Product:	*4U Rackmount Server TRC4011-000*
Subsystems:	*SHB: BXT7059* *Backplane: BPG7087* *Power Supply: PS1*
Tested By:	*ITC Engineering Services, Inc.* *9959 Calaveras Road, PO Box 543* *Sunol, California 94586-0543* *Tel: (925) 862-2944 Fax: (925) 862-9013* *Email: itcemc@itcemc.com* *http://www.itcemc.com*
Test Report Number:	*20121004-01A FCC*
Issue Date:	*October 31, 2012*

Certified By: *Date:* October 31, 2012

Mr. Michael Gbadebo, PE
Chief Engineer/Principal Consultant

TRC4011-010 FCC Part 15 Subpart B Certificate of Compliance – JXT6966, BPG7087 and Fixed PS Configuration

Certificate Of Compliance

Rev. 1

(FCC Part 15 Subpart B/IEC CISPR 22: 2006 Class A)

I hereby certify that the equipment, which test and report is referenced below has been found to meet the requisites of FCC ET Docket No. 95-15 and that the energy emitted by this equipment was found to comply with the FCC Class A limits. I further certify that on the basis of the measurements taken at the ITC Engineering Services, Inc. facility; the equipment tested is capable of operation in compliance with the conditions set forth in the FCC Rules and Regulations Part 15 Subpart B (IEC CISPR 22: 2006 ClassA). The measurement results are deemed satisfactory evidence of compliance with the technical EMC requirements of the Radio Interference Regulations of the Industry Canada.

ITC Engineering Services, Inc. hereby certifies compliance to the applicable test requirements per

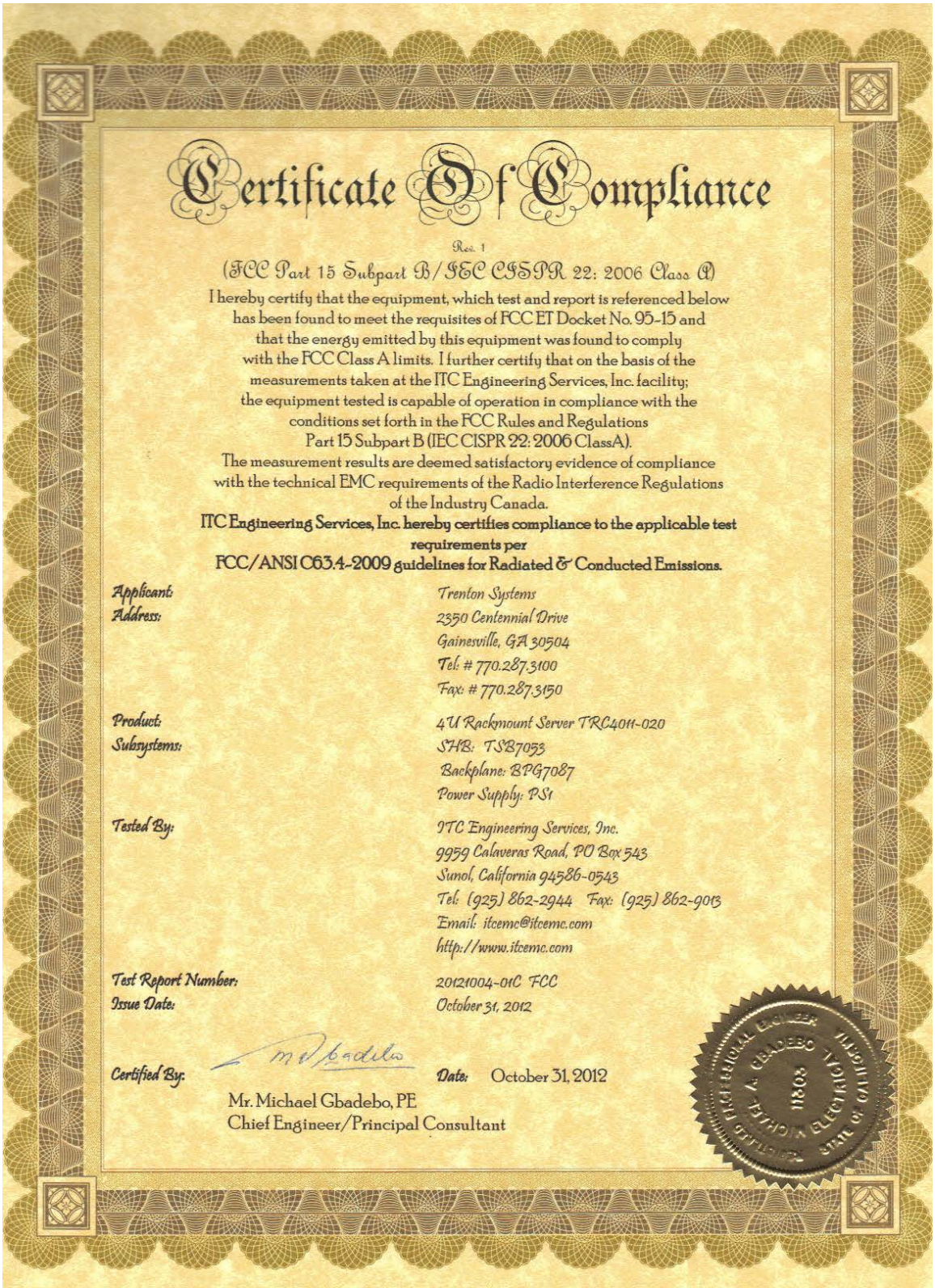
FCC/ANSI C63.4-2009 guidelines for Radiated & Conducted Emissions.

Applicant:	*Trenton Systems*
Address:	*2350 Centennial Drive* *Gainesville, GA 30504* *Tel: # 770.287.3100* *Fax: # 770.287.3150*
Product:	*4U Rackmount Server TRC4011-010*
Subsystems:	*SHB: JXT6966* *Backplane: BPG7087* *Power Supply: PS1*
Tested By:	*ITC Engineering Services, Inc.* *9959 Calaveras Road, PO Box 543* *Sunol, California 94586-0543* *Tel: (925) 862-2944 Fax: (925) 862-9013* *Email: itcemc@itcemc.com* *http://www.itcemc.com*
Test Report Number:	*20121004-01B FCC*
Issue Date:	*October 31, 2012*

Certified By: *Date:* October 31, 2012

Mr. Michael Gbadebo, PE
Chief Engineer/Principal Consultant

TRC4011-020 FCC Part 15 Subpart B Certificate of Compliance – TSB7053, BPG7087 and Fixed PS Configuration



Certificate Of Compliance

Rev. 1

(FCC Part 15 Subpart B/IEC CISPR 22: 2006 Class A)

I hereby certify that the equipment, which test and report is referenced below has been found to meet the requisites of FCC ET Docket No. 95-15 and that the energy emitted by this equipment was found to comply with the FCC Class A limits. I further certify that on the basis of the measurements taken at the ITC Engineering Services, Inc. facility; the equipment tested is capable of operation in compliance with the conditions set forth in the FCC Rules and Regulations Part 15 Subpart B (IEC CISPR 22: 2006 ClassA).

The measurement results are deemed satisfactory evidence of compliance with the technical EMC requirements of the Radio Interference Regulations of the Industry Canada.

ITC Engineering Services, Inc. hereby certifies compliance to the applicable test requirements per

FCC/ANSI C63.4-2009 guidelines for Radiated & Conducted Emissions.

Applicant:	*Trenton Systems*
Address:	*2350 Centennial Drive* *Gainesville, GA 30504* *Tel: # 770.287.3100* *Fax: # 770.287.3150*
Product:	*4U Rackmount Server TRC4011-020*
Subsystems:	*SHB: TSB7053* *Backplane: BPG7087* *Power Supply: PS1*
Tested By:	*ITC Engineering Services, Inc.* *9939 Calaveras Road, PO Box 543* *Sunol, California 94586-0543* *Tel: (925) 862-2944 Fax: (925) 862-9013* *Email: itcemc@itcemc.com* *http://www.itcemc.com*
Test Report Number:	*20121004-01C FCC*
Issue Date:	*October 31, 2012*

Certified By: *Date:* October 31, 2012

Mr. Michael Gbadebo, PE
Chief Engineer/Principal Consultant

TRC4011-001 FCC Part 15 Subpart B Certificate of Compliance – BXT7059, BPG7087 and Redundant PS Configuration

Certificate Of Compliance

Rev. 1

(FCC Part 15 Subpart B / IEC CISPR 22: 2006 Class A)

I hereby certify that the equipment, which test and report is referenced below has been found to meet the requisites of FCC ET Docket No. 95-15 and that the energy emitted by this equipment was found to comply with the FCC Class A limits. I further certify that on the basis of the measurements taken at the ITC Engineering Services, Inc. facility; the equipment tested is capable of operation in compliance with the conditions set forth in the FCC Rules and Regulations Part 15 Subpart B (IEC CISPR 22: 2006 ClassA).

The measurement results are deemed satisfactory evidence of compliance with the technical EMC requirements of the Radio Interference Regulations of the Industry Canada.

ITC Engineering Services, Inc. hereby certifies compliance to the applicable test requirements per FCC/ANSI C63.4-2009 guidelines for Radiated & Conducted Emissions.

Applicant: Trenton Systems
Address: 2350 Centennial Drive
Gainesville, GA 30504
Tel: # 770.287.3100
Fax: # 770.287.3150

Product: 4U Rackmount Server TRC4011-001
Subsystems: SHB: BXT7059
Backplane: BPG7087
Power Supply: PS2

Tested By: ITC Engineering Services, Inc.
9939 Calaveras Road, PO Box 543
Sunol, California 94586-0543
Tel: (925) 862-2944 Fax: (925) 862-9013
Email: itcemc@itcemc.com
http://www.itcemc.com

Test Report Number: 20121102-01A FCC
Issue Date: November 16, 2012

Certified By: Mr. Michael Gbadebo, PE
(California License #11303)
Chief Engineer

Date: November 16, 2012

TRC4011-011 FCC Part 15 Subpart B Certificate of Compliance – JXT6966, BPG7087 and Redundant PS Configuration

Certificate Of Compliance

(FCC Part 15 Subpart B / IEC CISPR 22: 2006 Class A)

I hereby certify that the equipment, which test and report is referenced below has been found to meet the requisites of FCC ET Docket No. 95-15 and that the energy emitted by this equipment was found to comply with the FCC Class A limits. I further certify that on the basis of the measurements taken at the ITC Engineering Services, Inc. facility; the equipment tested is capable of operation in compliance with the conditions set forth in the FCC Rules and Regulations Part 15 Subpart B (IEC CISPR 22: 2006 ClassA).

The measurement results are deemed satisfactory evidence of compliance with the technical EMC requirements of the Radio Interference Regulations of the Industry Canada.

ITC Engineering Services, Inc. hereby certifies compliance to the applicable test requirements per FCC/ANSI C63.4-2009 guidelines for Radiated & Conducted Emissions.

Applicant: *Address:*	*Trenton Systems* *2350 Centennial Drive* *Gainesville, GA 30504* *Tel: # 770.287.3100* *Fax: # 770.287.3150*
Product: *Subsystems:*	*4U Rackmount Server TRC4011-011/TRC4403/TVC4403* *SHB: JXT6966* *Backplane: BPG7087* *Power Supply: PS2*
Tested By:	*ITC Engineering Services, Inc.* *9959 Calaveras Road, PO Box 543* *Sunol, California 94586-0543* *Tel: (925) 862-2944 Fax: (925) 862-9013* *Email: itcemc@itcemc.com* *http://www.itcemc.com*
Test Report Number: *Issue Date:*	*20121102-01B FCC* *November 16, 2012*

Certified By: m Gbadebo

Mr. Michael Gbadebo, PE
(California License #11303)
Chief Engineer

Date: November 16, 2012

TRC4011-021 FCC Part 15 Subpart B Certificate of Compliance – TSB7053, BPG7087 and Redundant PS Configuration

Certificate Of Compliance

(FCC Part 15 Subpart B / IEC CISPR 22: 2006 Class A)

I hereby certify that the equipment, which test and report is referenced below has been found to meet the requisites of FCC ET Docket No. 95-15 and that the energy emitted by this equipment was found to comply with the FCC Class A limits. I further certify that on the basis of the measurements taken at the ITC Engineering Services, Inc. facility; the equipment tested is capable of operation in compliance with the conditions set forth in the FCC Rules and Regulations Part 15 Subpart B (IEC CISPR 22: 2006 ClassA). The measurement results are deemed satisfactory evidence of compliance with the technical EMC requirements of the Radio Interference Regulations of the Industry Canada.

ITC Engineering Services, Inc. hereby certifies compliance to the applicable test requirements per FCC/ANSI C63.4-2009 guidelines for Radiated & Conducted Emissions.

Applicant:	*Trenton Systems*
Address:	*2350 Centennial Drive* *Gainesville, GA 30504* *Tel: # 770.287.3100* *Fax: # 770.287.3150*
Product:	*4U Rackmount Server TRC4011-021*
Subsystems:	*SHB: TSB7053* *Backplane: BPG7087* *Power Supply: PS2*
Tested By:	*ITC Engineering Services, Inc.* *9939 Calaveras Road, PO Box 543* *Sunol, California 94586-0543* *Tel: (925) 862-2944 Fax: (925) 862-9013* *Email: itcemc@itcemc.com* *http://www.itcemc.com*
Test Report Number:	*20121102-01C FCC*
Issue Date:	*November 16, 2012*

Certified By: *Date:* November 16, 2012

Mr. Michael Gbadebo, PE
(California License #11303)
Chief Engineer