

TRITON routing switcher

Power Supply Frame

Product model no. TTN-PS-FR

→ INSTALLATION MANUAL

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the most watched worldwide

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Electromagnetic Radiation Notice

The following information is given to note compliance with the United States Government Federal Communications Commission (FCC) Rules (47 CFR Part 15) designed to limit interference to radio and TV reception. The ruling establishes measurement procedures and frequency criteria for Class A computing devices (commercial and industrial applications) with the following conduction and radiation limits:

CLASS A COMPUTING DEVICE: CONDUCTION LIMIT (Part 15.812)

<i>Frequency (MHz)</i>	<i>Maximum RF Line Voltage (uV)</i>
0.45 - 1.6	1000
1.6 - 30	3000

CLASS A COMPUTING DEVICE: RADIATION LIMIT (Section 15.810)

<i>Frequency (MHz)</i>	<i>Distance (meters)</i>	<i>Field Strength (uV/m)</i>
30 - 88	30	30
88 - 216	30	50
216 - 1000	30	70

The policy of Thomson is one of continual development and improvement. For that reason Thomson uses components and manufacturing techniques that provide the current state-of-the-art suppression of electromagnetic radiation. This equipment, in production before October 1, 1981, has not been tested to the above listed measurements. However, equipment such as this delivered after October 1, 1983 will have the measurements on record at the factory. Therefore, in compliance with the stated FCC Regulation, the following information is provided for the user:

NOTE

Interference to Radio Communications

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. As temporarily permitted by regulation it has not been tested for compliance with the limits for Class A computing devices pursuant to Subpart J of of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference. **Operation of this equipment in a residential area is likely to cause interference** in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Hardware Warranty and Software License

Please contact your local Thomson representative for hardware warranty and software license information.

Parts and Service

Thomson maintains a full stock of replacement parts available for immediate shipment.

NORTH AMERICA PARTS AND SERVICE

Please call toll-free **1-800-547-8949**.

You will be switched automatically to the parts and service representative nearest you.

For email correspondence: broadcast-support@thmulti.com

Internet: <http://www.thomsongrassvalley.com>

INTERNATIONAL PARTS AND SERVICE

Contact your Thomson representative.

Revision history

Current revision of this document is the uppermost in the table below.

Revision	Replaces	Date	Change Description
1	0	17/03/03	Updated with new Thomson/GVG design.
0	-	29/08/02	Initial Revision

1 General

The PS-FR is a compact, 2RU sub-rack frame, providing space for up to 4 power supply modules. The sub-rack frame features maximum modular flexibility as every power supply comes with a suitable back-plane module, which takes up 21TE spacing. Each back plane may contain, either 1 single power supply module, or 2 single power supply modules, providing redundancy. Each power supply module can provide the Triton modules with both $\pm 5V$, and $\pm 15V$, depending on the specifications of the Triton modules.

The product is available in 8 different versions:

PS-FR-1S	1 power supply module, single power supply
PS-FR-1R	1 power supply module, redundant power supply
PS-FR-2S	2 power supply modules, single power supply per module
PS-FR-2R	2 power supply modules, redundant power supply per module
PS-FR-3S	3 power supply modules, single power supply per module
PS-FR-3R	3 power supply modules, redundant power supply per module
PS-FR-4S	4 power supply modules, single power supply per module
PS-FR-4R	4 power supply modules, redundant power supply per module

All the above configurations except PS-FR-4R can be upgraded by adding more power supplies and/or power supply modules in order to handle more Triton devices.

Spare parts:

PWR-AC-15/15/5/5V	Power supply with 2 x 15V and 2 x 5V, 60W, input 110-260VAC auto-sensing, for spare or redundant supply
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1.1 Specifications

AC Input:

Voltage	: 90 – 260 VAC
Frequency	: 47 – 63 Hz
Fuse	: Yes
Efficiency	: >83 %
Connector	: IEC320

DC Output:

Maximum Power	: 60 W
Voltage	: +5.2 VDC / 6A -5 VDC / 1A +15 VDC / 1A -15 VDC / 1A
Minimum Load Requirement	: 5 %
Voltage Tolerance	: 5 %
Isolation Input – Output	: 3000 Vrms
Connectors	: DB9 female

Environmental:

Operating Temperature	: 0 °C - +55 °C
Storage Temperature	: -40 °C - +85 °C
Relative Humidity	: <90 %

Mechanical:

Dimensions	: 483 x 88 x 178 mm (19", 2RU)
Power supply slots	: 4 (Single, or Dual)

1.2 Connection drawing

Figure 1 shows the back plane of PS-FR.

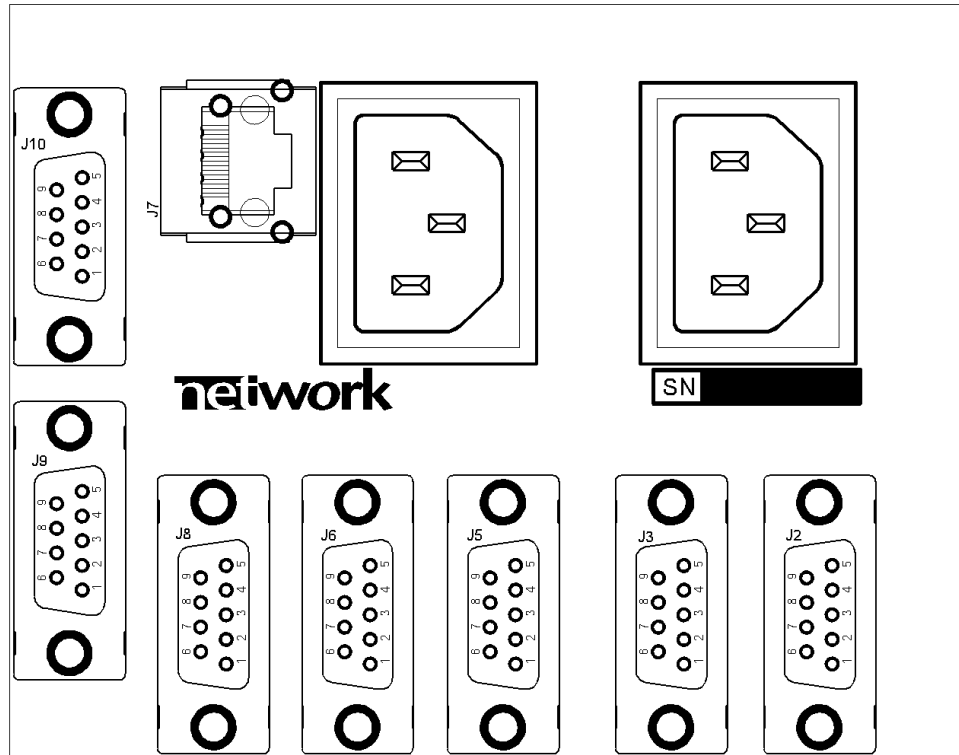


Figure 1. Connection drawing of a back-plane module of PS-FR.

Connector number	Connector type	Function
J2, J3	DB9 male	DC input
J5, J6, J8,J9,J10	DB9 female	DC output
J7	RJ-45	GPI module status output

1.3 Power Module LED's

Each power supply module is equipped with an LED, indicating the status of the module.

- Green light means that the power supply is OK.
- No light indicates that the power supply is not working ¹⁾.

¹⁾ No light on the LED is also the case when the power supply is switched off.

2 Power connection

Connect AC mains to the back-plane of each power module with a mains cord with an IEC 320 connector. There are two AC inlets, one for each power supply module. If the power module is equipped with a single power supply only, the AC inlet for that position is used (the left inlet if the power supply is installed in the left position as seen from the rear, and the right inlet if the power supply is installed in the right position). If the power module is equipped with redundant power supplies, both inlets are used. There is an on/off switch located in the front of the power supply.

If a DC power supply is used (*not yet available*), connect the DC input to the DB9 male connectors J2 and/or J3 in figure 1. If the power module is equipped with a single power supply only, the DC inlet for that position is used (J3, DC input 1, if the power supply is installed in the left position as seen from the rear, and the right inlet (J2, DC input 2) if the power supply is installed in the right position). If the power module is equipped with redundant power supplies, both inlets are used.

2.1 Pin-out DB9 male (DC input):

The pin layout of the DB9 male connectors for the DC inputs is as follows:

Pin #1	: Positive part of 48 VDC Input
Pin #2	: Not Connected
Pin #3	: Not Connected
Pin #4	: Not Connected
Pin #5	: Not Connected
Pin #6	: Negative part of 48 VDC Input
Pin #7	: Not Connected
Pin #8	: Not Connected
Pin #9	: Not Connected

2.2 Pin-out DB9 female (DC output):

Connect each VikinX device to either one of the 5 DC output connectors (DB9 Female), using a power cable with pin layout as specified by the VikinX device, *or* as specified below.

Pin #1	: 0 V / GND
Pin #2	: +5 V
Pin #3	: Not Connected
Pin #4	: +15 V
Pin #5	: +5 V
Pin #6	: -5 V
Pin #7	: Not Connected
Pin #8	: -15 V
Pin #9	: 0 V / GND

3 GPI Module status outputs

The GPI module status outputs can be used for wiring up alarms for third party control systems. Each back plane is equipped with an RJ-45 connector for GPI status from both power supply modules, as shown in figure 2. The status is a copy of the signal shown on the LED in front of the power module. There are two module status output pins per power supply. Relay 1A and relay 1B are for power supply 1, whereas relay 2A and relay 2B are for power supply 2.

Pin 1	Relay 1A
Pin 2	Relay 1B
Pin 3	Relay 2A
Pin 4	Relay 2B
Pin 5	Not Connected
Pin 6	Not Connected
Pin 7	Not Connected
Pin 8	Not Connected

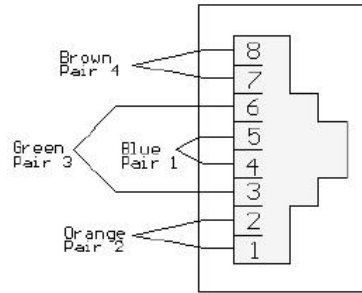


Fig. 2 GPI outlet (RJ-45)

In case of power failure, outputs A and B will be physically connected (low impedance), otherwise the connection between outputs A and B will be high impedance.

4 Power Module insertion

In order to reconfigure or expand the number of power modules within a rack, the front panel must be removed. Each power module has a corresponding connector module at the rear, and is hot swappable.

4.1 Opening the front panel

The front panel is hinged in the bottom. Release the three screws in the top in order to get access to the power modules inside. In order to detach the front panel completely, an opening angle of 135° is needed. Pull the panel gently to the left while holding the front panel in the 135° position. Revert the process in order to mount the front panel again. It is not necessary for normal maintenance to remove the front panel completely.

4.2 Power supply insertion

After the front panel is opened, full access to the power supplies inside the sub-rack is given as shown in figures 3a and 3b.

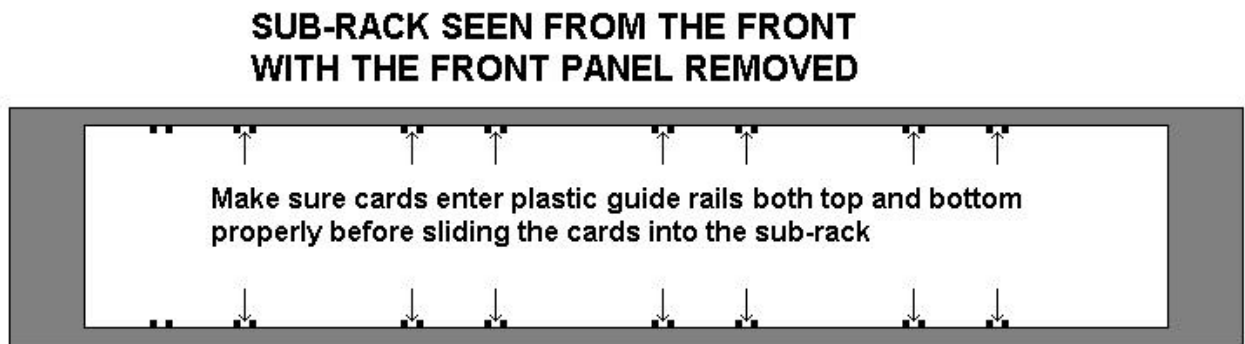


Figure 3a: The sub-racks are equipped with plastic guide rails to align the module cards into their respective position).



Figure 3b: Picture of the PS-FR with the front panel opened.

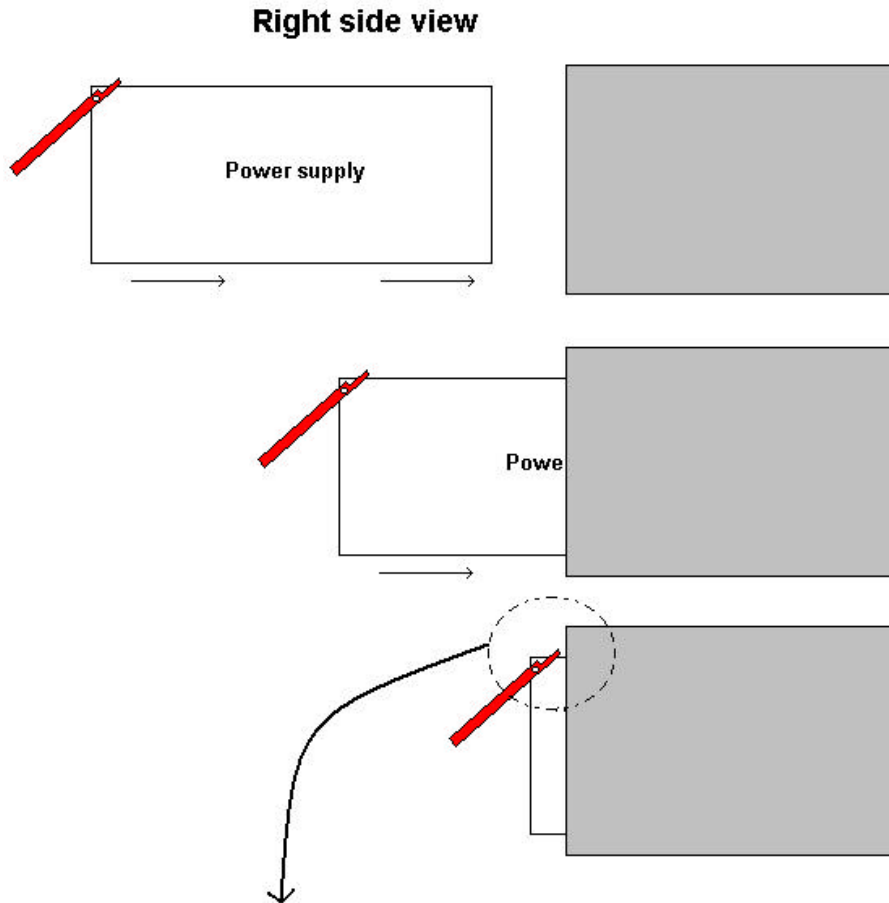


Figure 4: Inserting power supplies

Slide the card into the plastic guide rails inside the sub-rack until the red handle is close to the sub-rack front. A detailed description of the last part of the insertion process is shown in figure 5.

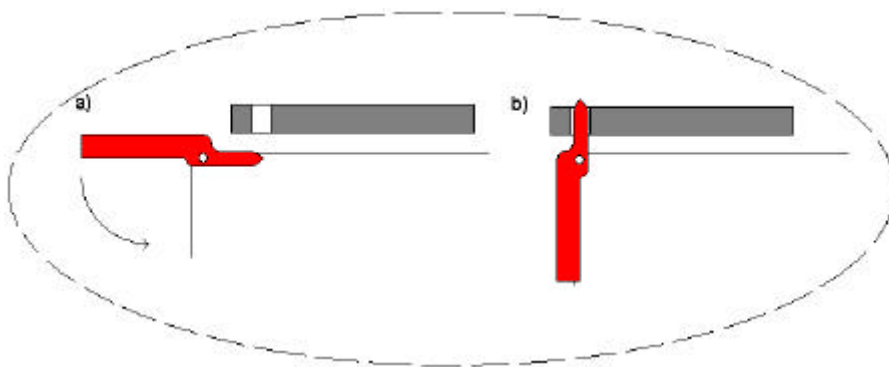


Figure 5: Inserting power supplies (continued)

On the top of the rack is a hole above each module slot. When the tip of the handle is just below this hole (fig. 5a)), start to bend the handle downwards as in figure 5. The tip of the handle enters the hole and the card is locked and proper contact ensured when the handle is in upright position (figure 5b)).

4.3 Adding new power supply modules

If the frame is not fully equipped with 4 power supply modules, a new module can be added. This is done by replacing the blank cover found on the rear with a power supply module as shown in figure 1. The module is mounted with 4 M2.5x8 screws with a pozidrive screwdriver (PZ1).