



TS 1 Plus Replacement Package Installation Guide

4934152 Rev: B

August 2007

TS 1 Plus Replacement Guide

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Printed: August 2007 in Anaheim California USA

Special thanks to:

All of our loyal Vantage customers, the people who contributed to this document; especially the Iteris Vantage Product Support Team.

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1 Introduction

Iteris is pleased to offer our Vantage NEMA TS 1 Plus users a path to the latest Edge2 technology. The Vantage Plus has served its users well and has been a real workhorse for our NEMA customers. The Vantage Plus was introduced over nine years ago and revolutionized the way people think of video detection. However, technology moves forward and so does the Vantage line of video detection products. The Plus replacement package utilizes the latest Vantage video detection technology, but continues with the legacy ease of use and dependability that Plus users have come to love and expect.

The Plus replacement package consists of a Vantage VRack4 and integrated Power Supply Module, combined with an Edge2-4 Processor and an IOM32 Module. This is a direct replacement package for a NEMA TS 1 four video input Vantage Plus. The IOM32 Module even utilizes the existing Vantage Plus DB-37 detector output wiring harness, so installation is truly plug and play. The Plus replacement package provides the Vantage user with the latest video detection technology and enhanced detection performance, while providing extra expansion slots for future functionality and growth. The Vantage Plus user gets all this, plus world class product support, and the best hardware warranty in the industry. There has never been a better time to make the move into the future by replacing your Vantage Plus.

NOTES: This manual assumes the user has an existing Vantage Plus and will be replacing it with the TS 1 VRack4. This manual will not go into detail on the operation and setup of the individual modules contained in the VRack4. Each module will have its own Installation and User guide where detailed product specific information will be provided. Consult the individual product manual for detailed information on the specific product. This manual will provide a brief overview of the individual components involved in the Plus Replacement Package and will serve as a "quick start" guide on replacing your Vantage Plus. This manual is designed to be used in conjunction with the individual product manuals.

2 NEMA TS 1 Plus Replacement Package



The Package Consists of the Following Components:

- TS 1 VRack4 and Integrated PS1211 Power Supply Module
- Edge2-4, Four Channel Processor
- IOM32 Module, 32 Outputs and 8 Inputs

Legacy Features:

- Modular design
- Reliable and easy to use
- Central point of communication
- DB-37 detector output harness

Additional Replacement Advantages:

- The latest detection algorithms
- New hardware platform with a faster processor and more memory
- Ability to utilize controller green inputs
- Compatibility with the latest Edge2 expansion modules
- 120 - 250 VAC, 50/60 HZ
- Edge2 modules can be used in a VRack or standard detector rack
- Test switches
- Compact and light weight
- Future expansion capability

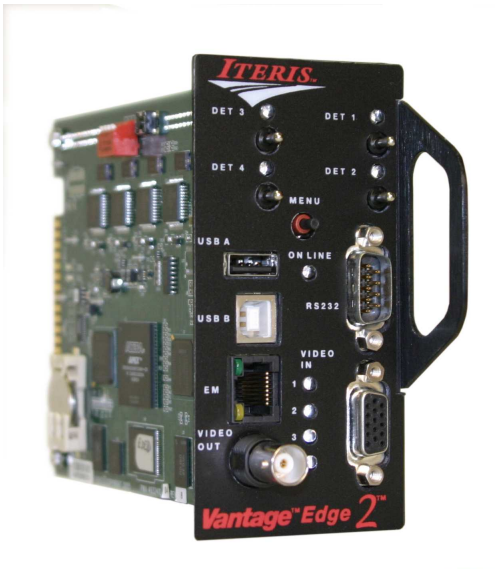
2.1 VRack4 and Integrated Power Supply



Complete NEMA TS1 Plus Replacement

This is the complete four camera NEMA TS 1 Plus replacement configuration. It consists of an Edge2-4 Processor module capable of four video inputs, an IOM32 module that provides 32 programmable external outputs and 8 external logic level inputs, plus an integrated power supply module. There are also two additional slots for future expansion capability which come with blank covers installed. For VRack4 connector information, see the section in this manual entitled VRack4 Back Plane Connectors.

2.2 Edge2-4 Processor



Edge2-4 Processor

The Edge2-4 Processor module is capable of 4 video inputs, has 4 detector outputs and can utilize up to 4 green inputs. For Edge2-4 Processor configuration information, see the section in this manual entitled Edge2-4 Processor Configuration. For detailed information on the Edge2-4 Processor, please refer to the product user and installation guide.

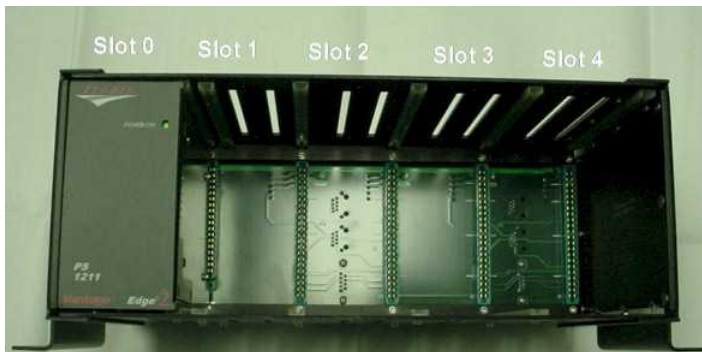
2.3 IOM32 Module



IOM32 Module

The IOM32 Module provides 32 external outputs and up to 8 external green inputs. The IOM32 Module uses the same detector output harness as the Vantage Plus. For IOM32 Module configuration information, see the section in this manual entitled IOM32 Module Configuration. For detailed information on the IOM32 Module, please refer to the product User and Installation guide.

3 VRack4 Rack Slots



VRack4 Rack Slots

Slot "0" (zero) is exclusively reserved for the VRack4 Power Supply module. Its edge connector is specially keyed so that other Edge2 modules will not fit in this slot.

For communication purposes, think of slot 1 and 2 as being tied together and slot 3 and 4 as being tied together. This means that modules in 1 and 2 can communicate with each other through the TS 1 VRack4 back plane, as can modules located in slot 3 and slot 4 respectively. Slots 1 and 2 are isolated from slots 3 and 4.

For example:

An Edge2-4 Processor module in slot 1 can communicate through the back plane with an IOM32 module in slot 2. An Edge2-4 Processor module in slot 3 can communicate through the back plane with a IOM32 module in slot 4.

An Edge2 Processor module in slot 1 can not communicate with an Extension module in slot 4. (Unless extension cables are used - see the section on VRack4 Back Plane Connectors)
An Edge2 Processor module in slot 2 can not communicate with an Extension module in slot 3. (Unless extension cables are used - see the section on VRack4 Back Plane Connectors)

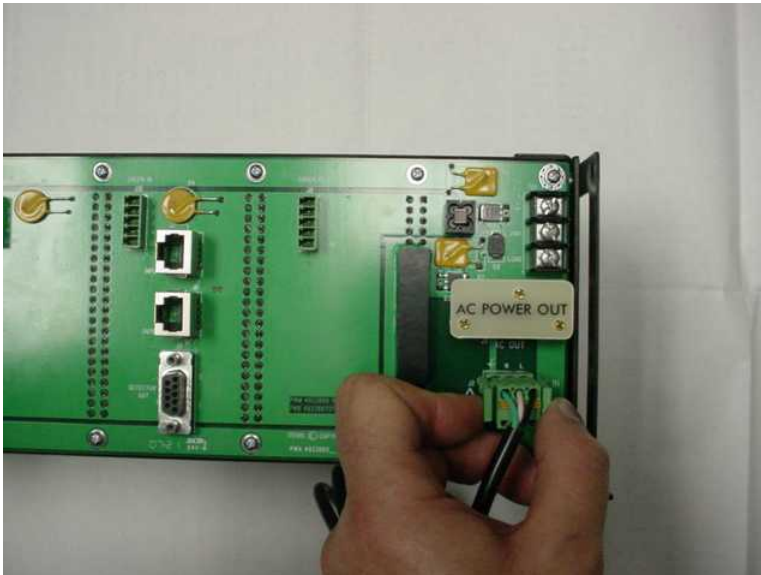
For our Plus Replacement application we will have blank plates installed in slots 3 and 4. The Power Supply module will be in slot 0, the Edge2-4 Processor module will be placed in slot 1, and the IOM32 module will be placed in slot 2.

4 VRack4 Back Plane Connectors

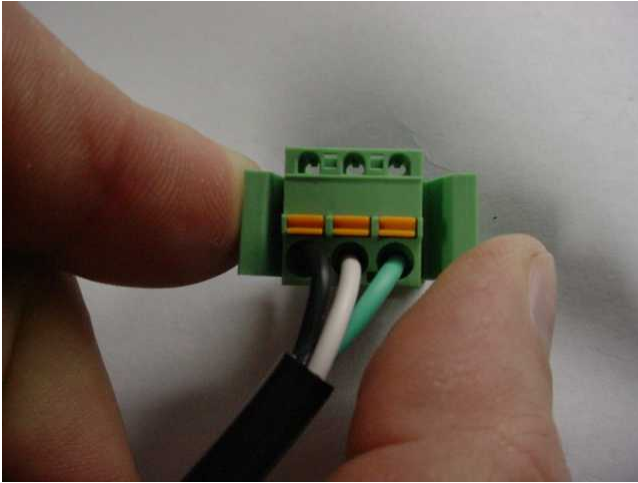
AC VRack4 Back Plane Power Connections



AC Power Cord



The AC power cord plugs into the jack on the VRack4 back plane as is shown in the photo. The other back plane connectors will not be used in this Plus Replacement example application.



AC Power Cord Connector

Verify the AC Power Cord connector is wired correctly as shown in the picture.



AC Protective Cover Removed

Notice the "AC Out" jack which serves as a pass through for AC power. We will not be using this jack for this TS 1 Plus Replacement application.

NOTE: Most of the following features will not be used in our Plus Replacement application. The information is provided for informational purposes only. These features are covered in greater detail in the VRack4 Installation and User Guide.

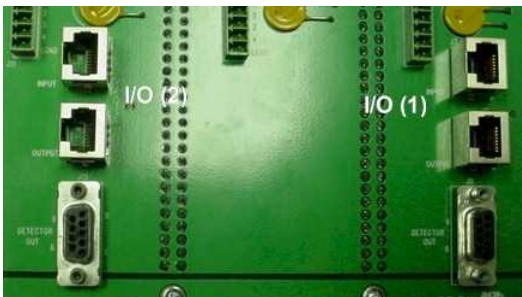
DC VRack4 Back Plane Power Connections



External DC Input Terminal Block

This terminal block allows the VRack4 to be powered by an external 12 / 24 VDC source. The external DC source must be capable of 1.6 amps or greater at 24 VDC or 3.2 amps at 12 VDC. We will not be using this terminal block for this TS-1 Plus Replacement example.

VRack4 Back Plane Communication I/O RJ-45 Connectors



Two I/O RJ-45 Back Plane Connector Jacks

I/O (1) RJ-45 Plugs cover modules in slots 1 or 2.
I/O (2) RJ-45 Plugs cover modules in slots 3 or 4.

CAT5 cable jumpers would be installed when back plane communication is desired. Communication from a module in slot 1 or 2 could be jumpered to a module in slot 3 or 4. Modules must be configured for back plane communication.

For example:

A Edge2-4 Processor module in rack slot 1 could be jumpered to an Extension Module in rack slot 4 by placing a CAT5 jumper from I/O (1) Output to I/O (2) Input.

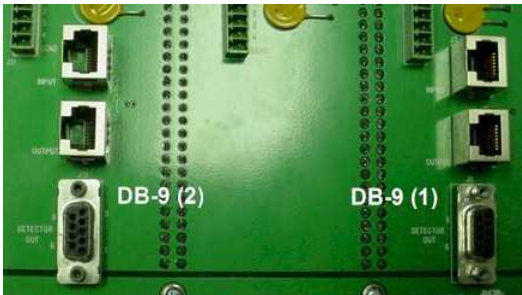
Realize that, in the example, you could have plugged the CAT5 jumper cable into the Edge2-4 Processor directly on the front, and run the CAT5 jumper cable to the Extension Module (on the front) and it would have worked just as well. Use of back plane communication cleans

things up on the front side by running cabling in the back. In our Plus Replacement application we will not be using these features.

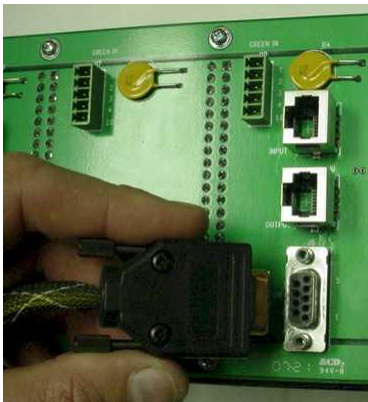
VRack4 Back Plane Output DB-9 Connectors



DB-9 Output Harness



Two DB-9 Back Plane Output Connector Jacks



Plugging in Output Harness

DB-9 Connector Detector Outputs

DB-9 (1) Pin Number	Function
1	Slot 1 Output Chnl. 1
2	Slot 1 Output Chnl. 2
3	Slot 1 Output Chnl. 3
4	Slot 1 Output Chnl. 4
5	Slot 2 Output Chnl. 1
6	Slot 2 Output Chnl. 2
7	Slot 2 Output Chnl. 3
8	Slot 2 Output Chnl. 4
9	Logic Ground

DB-9 (2) Pin Number	Function
1	Slot 3 Output Chnl. 1
2	Slot 3 Output Chnl. 2
3	Slot 3 Output Chnl. 3
4	Slot 3 Output Chnl. 4
5	Slot 4 Output Chnl. 1
6	Slot 4 Output Chnl. 2
7	Slot 4 Output Chnl. 3
8	Slot 4 Output Chnl. 4
9	Logic Ground

Controller Green Inputs



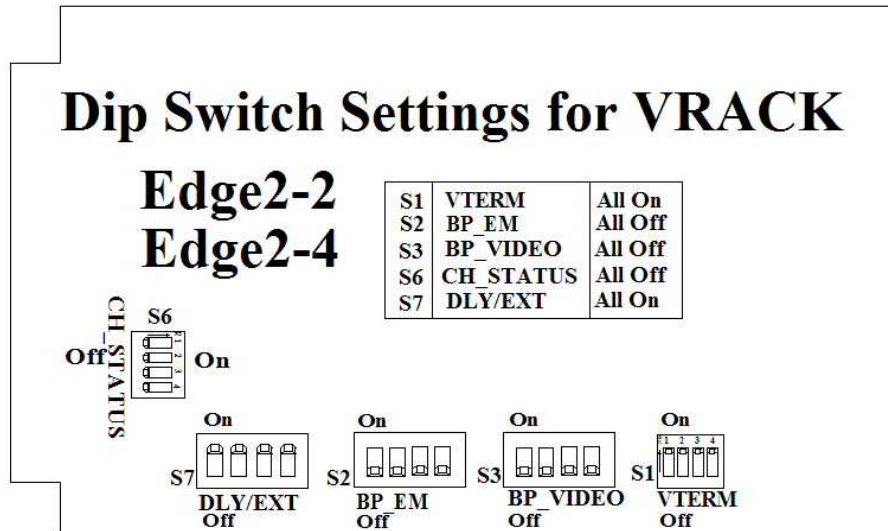
Back Plane Green Input Jack Green Input Plug

Each VRack4 slot has the capability to receive four DC logic level outputs from the traffic controller. The input jacks are identified as J9(Slot 1), J10(Slot 2), J17(Slot 3), J11(Slot 4). The pins are identified as pins 1 through 4 and GND (logic ground).

Green Input Pin Number	Processor Channel
1	1
2	2
3	3
4	4
Logic Ground	

5 Edge2-4 Processor Configuration

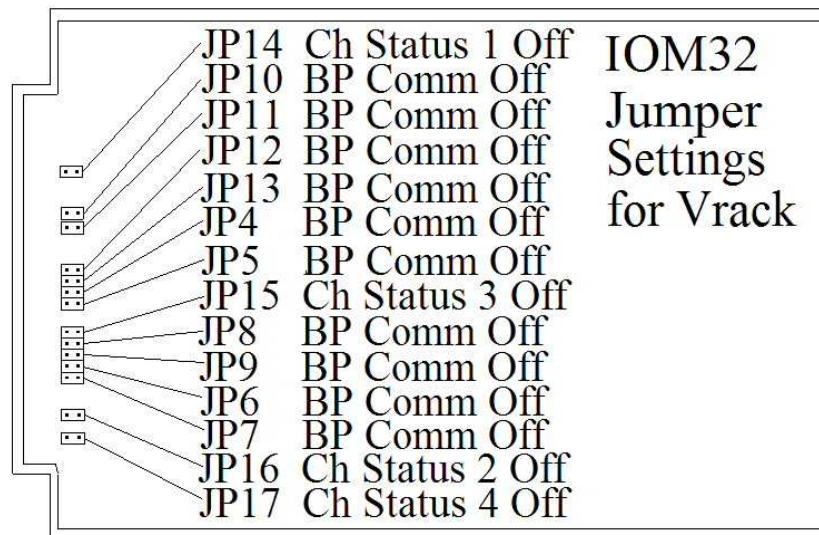
The Edge2-4 Processor must be configured correctly to work properly in the TS 1 VRack4.



The diagram shows the proper DIP switch configuration settings for the Edge2-4 Processor module to allow communication through the RJ-45 ports on the front, when used in slot 1 of the TS 1 VRack4.

6 IOM32 Module Configuration

The IOM32 Module must be configured correctly to work properly in the TS 1 VRack4.



The diagram shows the proper jumper configuration settings for the IOM32 Module to communicate through the RJ-45 ports on the front when it is used with the TS 1 VRack4. Basically, all the jumpers are OFF.

7 Replacement Procedure

Gather Existing Zone Phase Assignment Information

Use the included worksheets located in the back of this manual to capture the Vantage Plus setup, zone and phase assignment information.

Remove the Vantage Plus

The next concern is to make sure constant calls or recalls are placed to the controller during the change out process. When power is disconnected from the Plus unit, and the DB-37 output harness is still connected, constant calls will be placed. However, when the DB-37 output harness is removed, constant calls will no longer be placed to the controller. Either through detector test switches or by using a controller recall, constant calls should be placed on all used controller phases while removing the Plus unit and installing the TS 1 VRack4 rack. Once constant calls have been implemented, unplug the Vantage Plus power cord from the AC power source. Disconnect the DB-37 detector output harness from the front of the Vantage Plus and place it where it will not accidentally fall down and make contact with any other electrical connections. Disconnect the video input cables and remove the Vantage Plus unit.

Install the TS 1 VRack4

Place the TS 1 VRack4 on the shelf where the Vantage Plus was originally located. Make sure all the modules are securely plugged into the rack. The Edge2-4 Processor module should be in slot 1 and the IOM32 module should be in slot 2. The Power Supply module should be in its special slot, the farthest slot to the left (slot 0). Plug in the TS 1 VRack4 AC power cord to the AC source. Connect the video input cable harness to the front of the Edge2-4 Processor module. It converts the DB-9 connector on the front of the Edge2-4 Processor into four BNC connectors. Connect the four video inputs to the four BNC connectors, barrel connectors may be required depending on cable lengths and mounting locations. Draw detection zones for each camera view. Use the Plus phase and zone assignment information that you recorded on the worksheets to set up the new configuration on the Edge2-4 Processor. Connect the DB-37 output harness to the IOM32 module. You should have already configured the Edge2-4 Processor and IOM32 Module for use with the TS 1 VRack4 in the previous section. For specific information on the Edge2-4 Processor, consult the product Installation and User Guide.

8 Additional Configurations

The VRack4 can also be used with an Access or eAccess module.



Access Module Shown in Slot 3 of the VRack4

For modem communications, you can add an Access module. Simply plug it in to slot 3 of the VRack4 and then connect a CAT5 cable from the RJ-45 EM OUT jack on the IOM32 module to the RJ-45 EXT MOD input #1 jack on the Access module. Connect the video input harness to the DB-15 on the front of the Access module and hook up video input channel 1 (red) to the video output of the Edge2-4 Processor module VIDEO OUT. The monitor can be connected to the VIDEO OUT on the Access module. The phone line should be connected to the RJ-11 jack labeled MODEM on the Access module. Setup is complete, refer to the Installation and User guide for more information on each of the specific modules.



Access Module in VRack4 with Hookups



eAccess Module Shown in Slot 3 of the VRack4

For streaming video over Ethernet, you can add an eAccess module. Simply plug it in to slot 3 of the VRack4 and then connect a CAT5 cable from the RJ-45 EM OUT jack on the IOM32 module to the RJ-45 EXT MOD input #1 jack on the eAccess module. Connect the video input harness to the DB-15 on the front of the eAccess module and hook up video input channel 1 (red) to the video output of the Edge2-4 Processor module VIDEO OUT. The monitor can be connected to the VIDEO OUT on the eAccess module. Connect your eAccess to the ethernet network by plugging a CAT5 network cable into the RJ-45 jack labeled ETHERNET 10/100 BASE-T. Setup is complete, refer to the Installation and User guide for more information on each of the specific modules.



eAccess Module in VRack4 with Hookups

9 Phase / Zone Assignment Worksheet

Camera 1	Direction Any / Down	Phase (1-8)	Zone Type	Timing	Label	AND/W (1-24)	Ch / Out
Zone Detail #1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
Options: (0-255)		LC Out Channel: (0-32)			Bin Interval: (5,15,30,60 min.)		
Intersection:							
Glare Output Chnl. (0-32)				Vlock Chnl. (0-32)			
Notes:							

Camera 2	Direction Any / Down	Phase (1-8)	Zone Type	Timing	Label	AND/W (25-48)	Ch / Out
Zone Detail #							
25							
26							
27							
28							
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
Options: (0 - 255)			LC Out Channel: (0-32)			Bin Interval: (5,15,30,60 min.)	
Intersection:							
Glare Output Chnl. (0-32)				Vlock Chnl. (0-32)			
Notes:							

Camera 3	Direction Any / Down	Phase (1-8)	Zone Type	Timing	Label	AND/W (49-72)	Ch / Out
Zone Detail #49							
50							
51							
52							
53							
54							
55							
56							
57							
58							
59							
60							
61							
62							
63							
64							
65							
66							
67							
68							
69							
70							
71							
72							
Options: (0-255)		LC Out Channel: (0-32)			Bin Interval: (5,15,30,60 min.)		
Intersection:							
Glare Output Chnl. (0-32)				Vlock Chnl. (0-32)			
Notes:							

Camera 4	Direction Any / Down	Phase (1-8)	Zone Type	Timing	Label	AND/W (73-96)	Ch / Out
Zone Detail #73							
74							
75							
76							
77							
78							
79							
80							
81							
82							
83							
84							
85							
86							
87							
88							
89							
90							
91							
92							
93							
94							
95							
96							
Options: (0-255)			LC Out Channel: (0-32)			Bin Interval: (5,15,30,60 min.)	
Intersection:							
Glare Output Chnl. (0-32)				Vlock Chnl. (0-32)			
Notes:							

10 Specifications

PS1211 Power Supply Module Specifications:

- Input 100 - 250 VAC, 50/60 Hz
- Output +24VDC @ 1.6 Amps (38 Watts)
- DC output holdup time 50 milliseconds
- Output ripple less than 200 mV p-p
- Operating temperature -34C (-30F) to +74C (+165F)
- Relative humidity must not exceed 95% non-condensing over the temperature range of +4.4C (+40F) to +43.3C (+110F)
- Sturdy aluminum chassis
- Space saving shelf mount design
- Designed to seamlessly integrate with the VRack4 Rack

11 Product Support / Contact Information

Vantage Product Support Team Contact information:

(888) 254-5487

techsupport@iteris.com

Iteris prides itself in its world class Product Support Team and their exceptional dedication to our valuable customers and our growing family of Vantage products. Technical assistance is available by phone throughout the entire United States. A knowledgeable Vantage Product Support Team member will answer your questions and assist you with any challenges that you may have.

If there is anything that we can do to better serve you, or if there is something more that we can do to make your experience with our Vantage products an even better one; then please do not hesitate to contact us

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