



Tracewell Systems



**563-2002-F24-00**

**&**

**563-2003-F23-00**

**E-Tool 2x2 Stackable / Rugged Deployed**



## Table of Contents

Chassis Description .....	Page 3
Basic Operation .....	Page 5
Front View .....	Page 8
Rear View .....	Page 9
Chassis Power and LAN Connections .....	Page 10
Drawer Connections .....	Page 12
Unit Assembly .....	Page 13
Maintenance.....	Page 19
Ethernet Switch Specifications.....	Page 20
Inverter Specifications .....	Page 22
Parts List .....	Page 23
Warranty .....	Page 24

## Chassis Description

### General Specification

The 563-2002-F24-00 (Primary Cabinet) and 563-2003-F23-00 (Expansion Cabinet) offer a configurable mobile storage solution, capable of charging multiple laptops while connected to the users network, allowing files to be transferred as needed for the next mission. In its base form, (1) 563-2003-F23-00 will be securely affixed on top of (1) 563-2002-F24-00. (There are provisions in the design to allow for a total of (3) 563-2003-F23-00 to be stacked atop of the 563-2002-F24-00 chassis). Once the chassis are combined, the units are cabled together using the supplied COTS cables as shown in Drawing 1. Cabling of a full system is shown in Drawing 2.

- Each drawer can accommodate 1 notebook computer.
  - Each drawer has a 120VAC outlet and a RJ-45 CAT5e Ethernet connection
  - Drawers provide full extension for ease of installing computers and their chargers
  - Drawers are vented to allow warm air to escape
- Power surge protection is provided to protect all the laptops from voltage spikes
- The unit has a durable finish
- The unit is equipped with a \*Cisco 2960-8TC-L Switch, allowing a single connection to your server
- 2 external Ethernet ports. One port connected directly to the Ethernet switch (LAN), the second port (CONSOLE) is used as a console port for the managed switch
- A single power cord provides power to the system and plugs directly into standard 120VAC, 50-60Hz wall outlet
- High performance fans are provided to ensure sufficient cooling while charging

### Construction

- Light weight aluminum
- Color – Flat Gray, FED-STD-595, color 36173

\* Alternate switches available upon request or cabinet without switch installed



## **Chassis Description cont.**

### **Cabinet Maximum Dimensions (with transit covers attached)**

563-2002-F24-00 (Primary Cabinet)

- Depth – 23.9”, Width – 21.6”, Height – 15.0” (with casters)

563-2003-F23-00 (Expansion Cabinet)

- Depth – 23.9”, Width – 21.6”, Height – 8.5”

### **Drawer Dimensions (max allowable space)**

- Depth – 14.1”, Width – 15.0”, Height – 3.1”

### **Weight**

563-2002-F24-00 (Primary Cabinet)

- 46 lbs, Empty with no casters
- 50 lbs, With extra materials in drawers, no casters
- 51 lbs, Empty with casters
- 55 lbs, With extra materials in drawers and casters (without computers)

563-2003-F23-00 (Expansion Cabinet)

- 29 lbs (without computer)

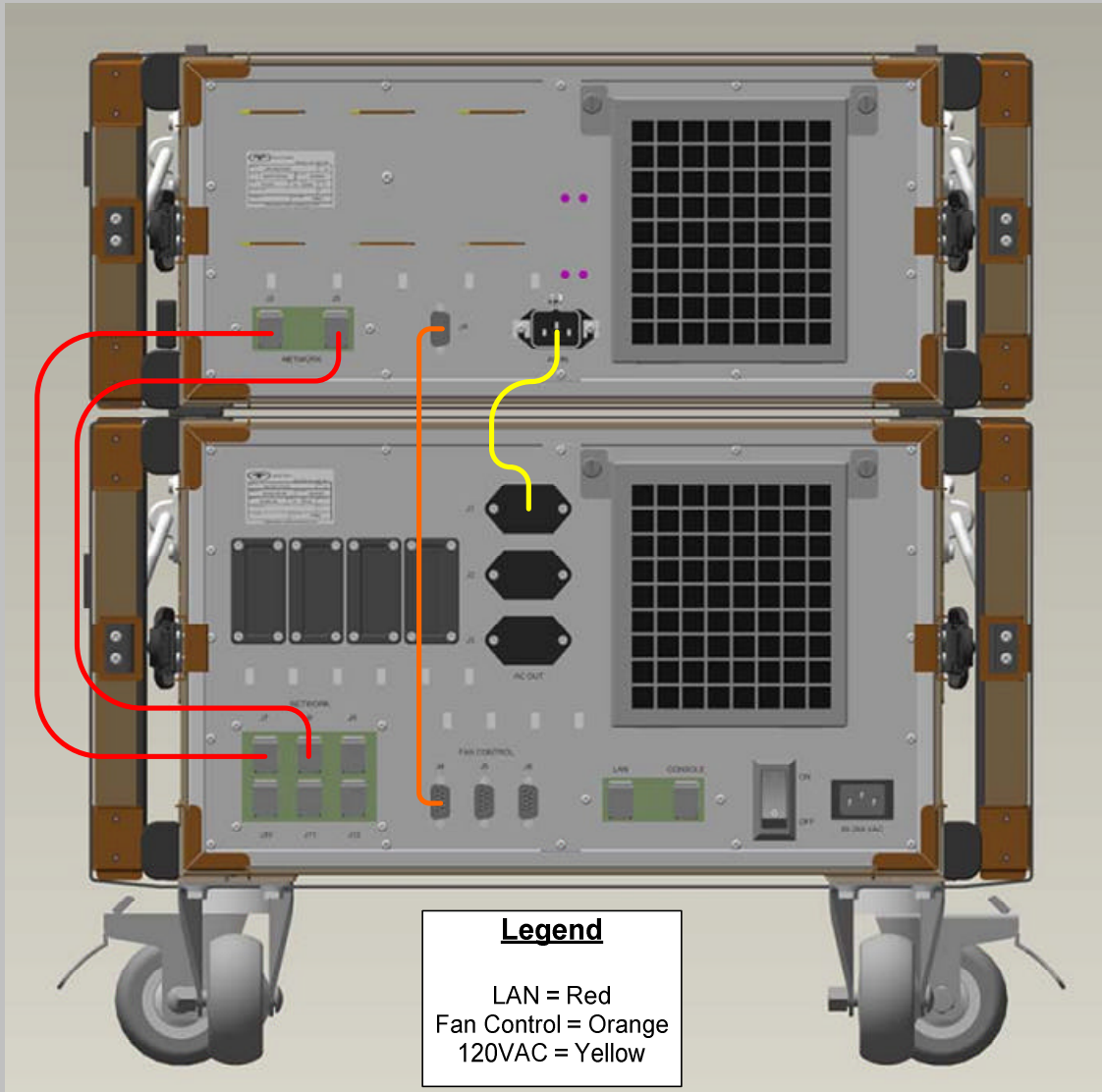
## Basic Operation

- Connect the base system as shown in Drawing 1 (for more than one Expansion Cabinet, see Drawing 2)
  - LAN cables connect the Ethernet port in the drawers to the Ethernet switch in Primary Cabinet
  - Fan Control cables supply provide fan power, tach and temp sensor feedback to the fan control circuitry
  - 120VAC cables supply an AC (modified sine wave) voltage to the Expansion Cabinet drawers \*
- Connect one end of the supplied AC cable to the AC input port (85-264VAC, 50-60Hz, Single Phase) and the other end to an appropriate AC outlet
- Connect the LAN port to the users network (cable not supplied)
- Switch the circuit breaker to the ON position
- All fans should turn on and momentarily run at full speed (Air should be drawn into the fan and exit through the drawer face)
- After a few seconds the fan speed will adjust to the ambient temp of the room
- System is now operational
- The user may now populate the drawers as needed

\* Expansion Cabinet(s) is/are to be powered by Primary Cabinet only.

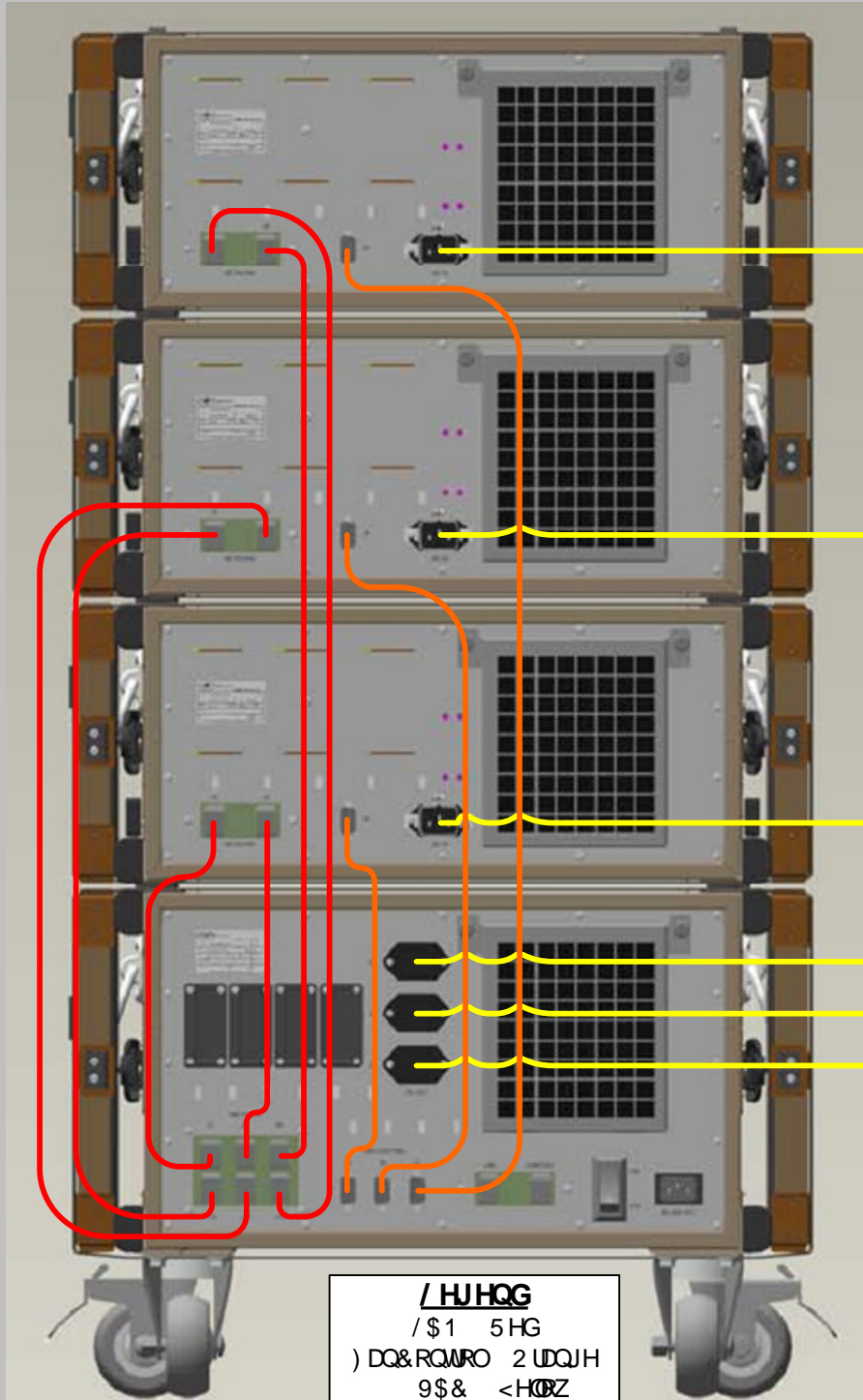
**Drawing 1**

Cable Interconnect Diagram

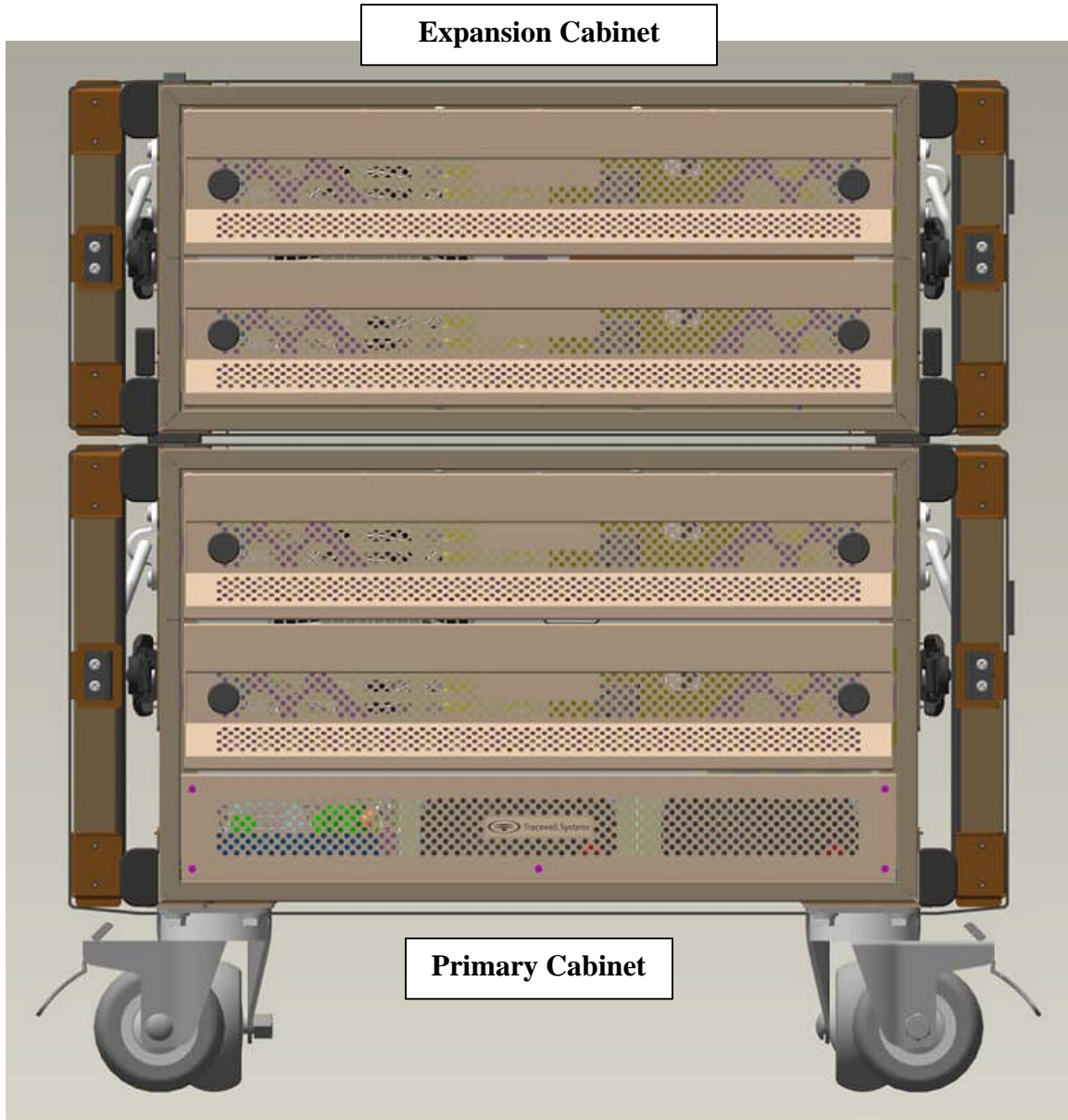


Drawing 2

&LEQI QMFRQQFWLDJ UDP

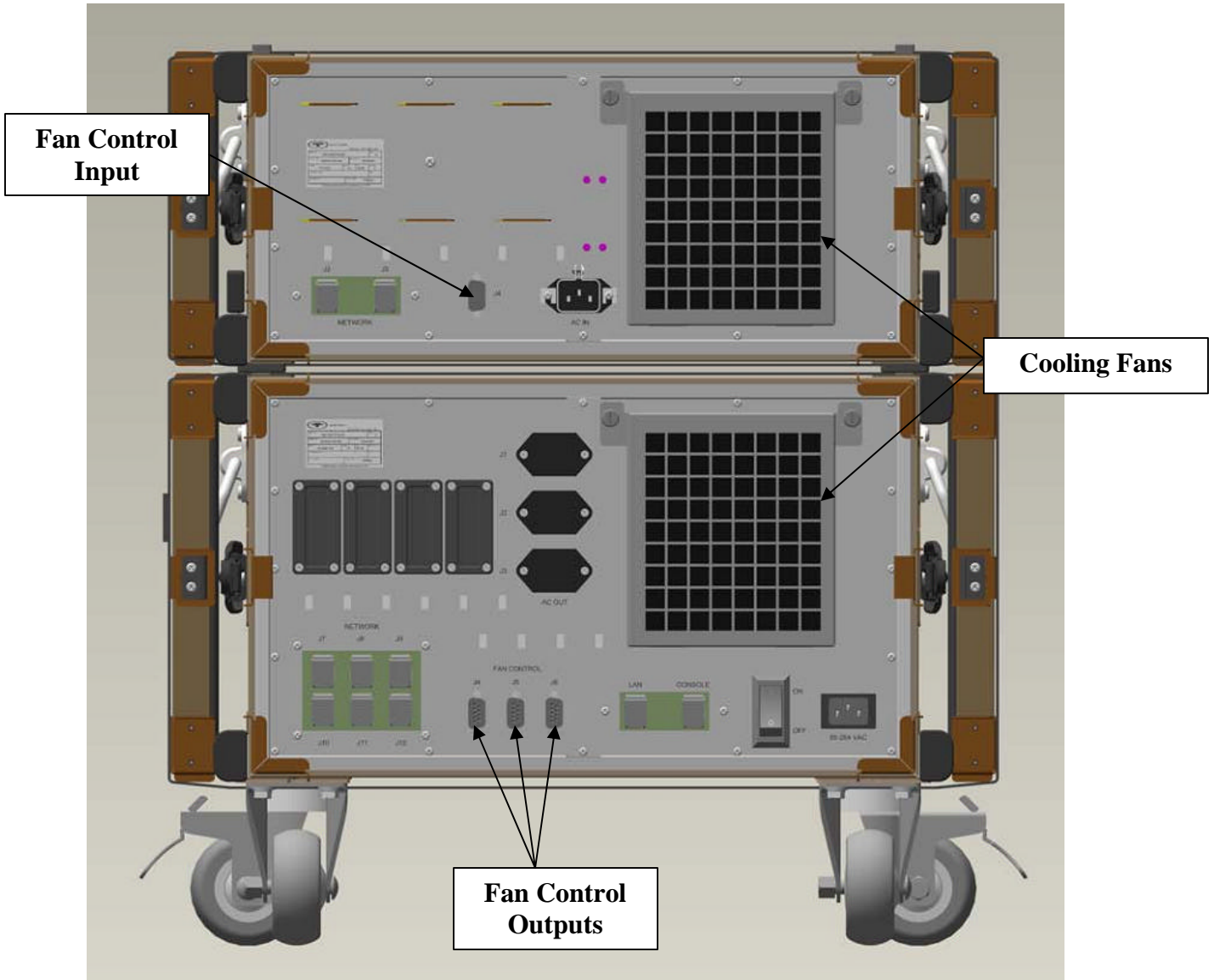


## Front View

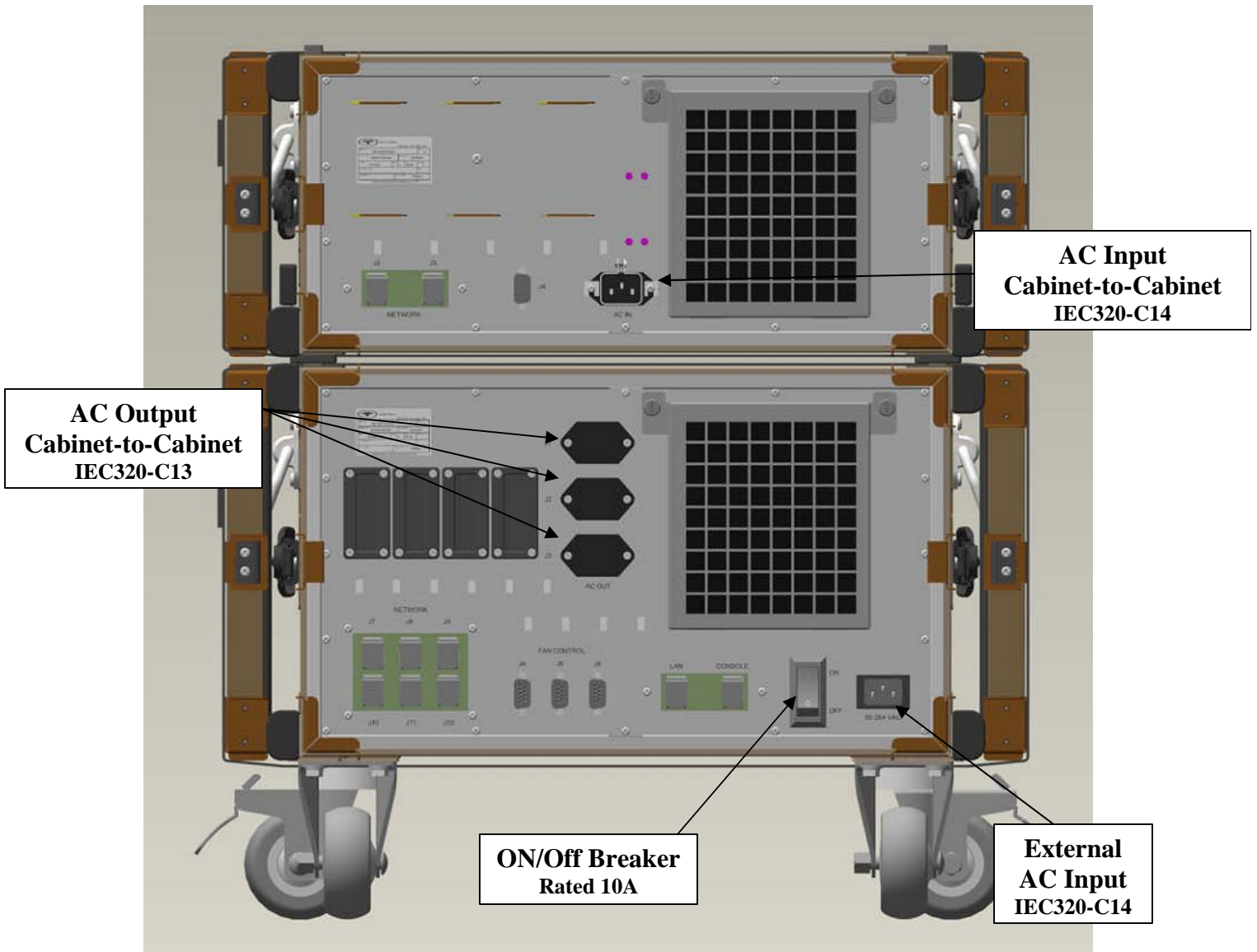




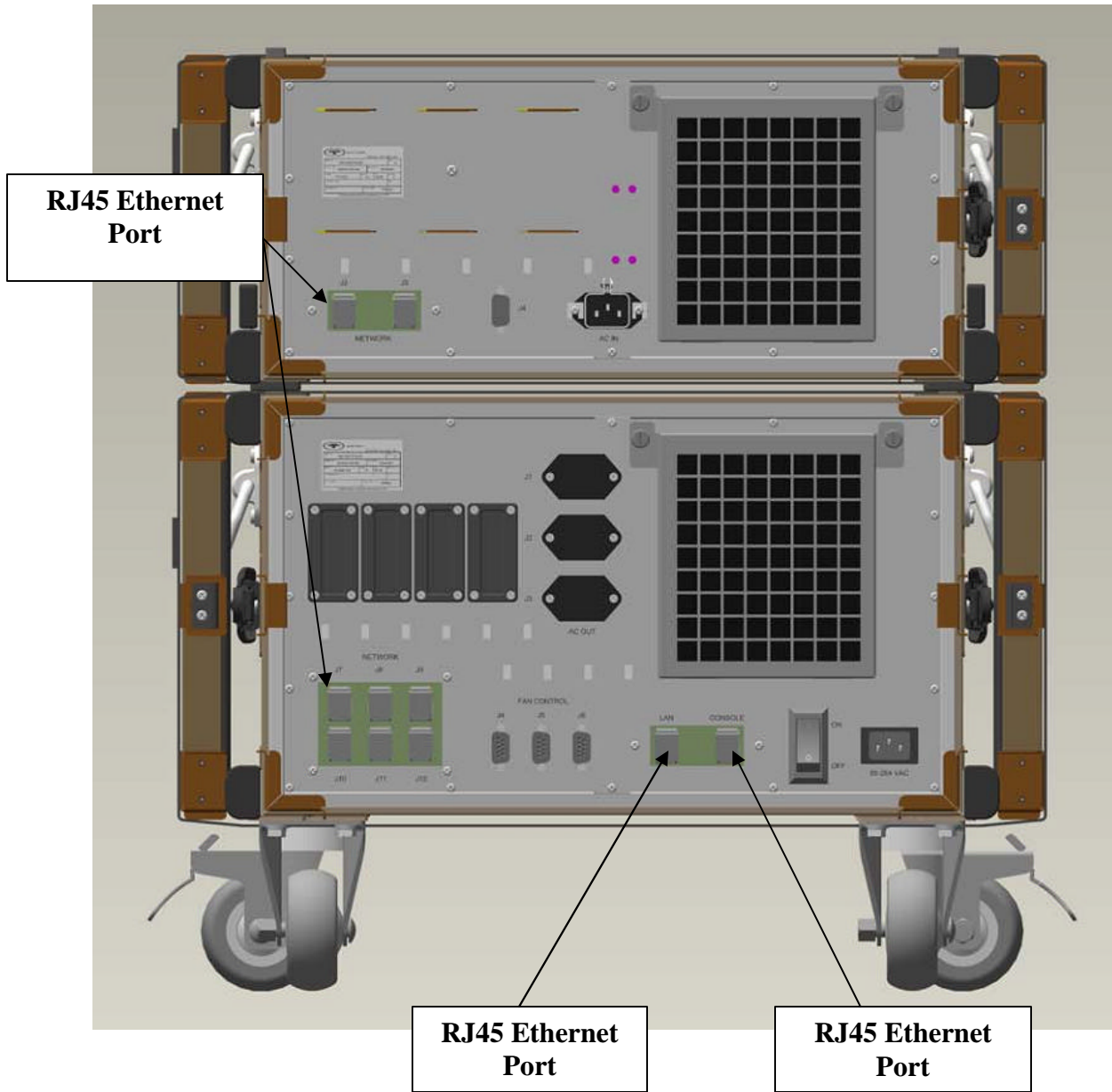
## Rear View – Fan Control Connections



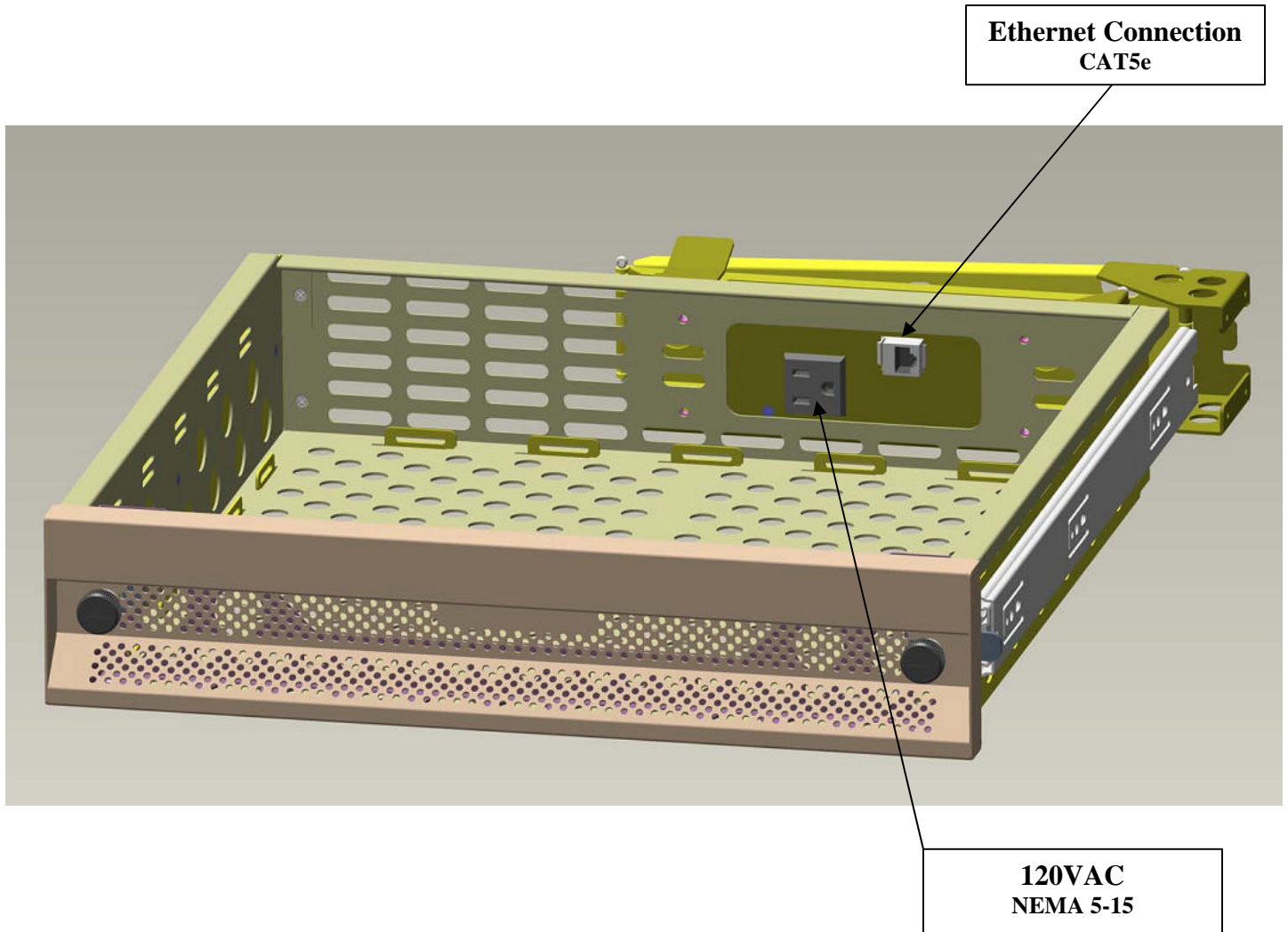
## Rear View - Power Connections



## Rear View - LAN Connections

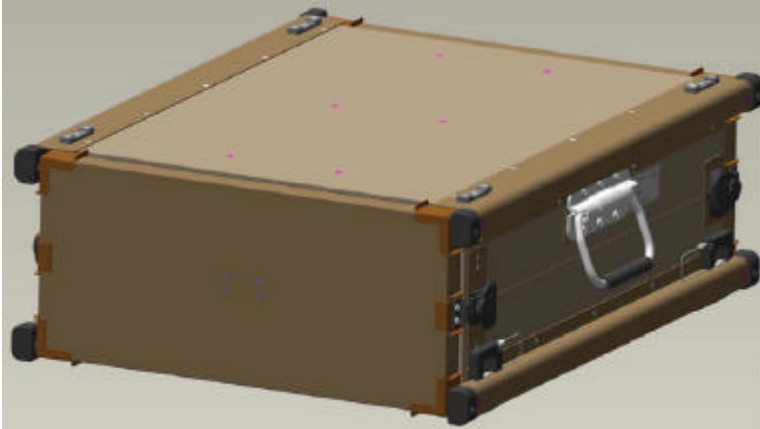


## Drawer Connections



## Unit Assembly (Door Stowage)

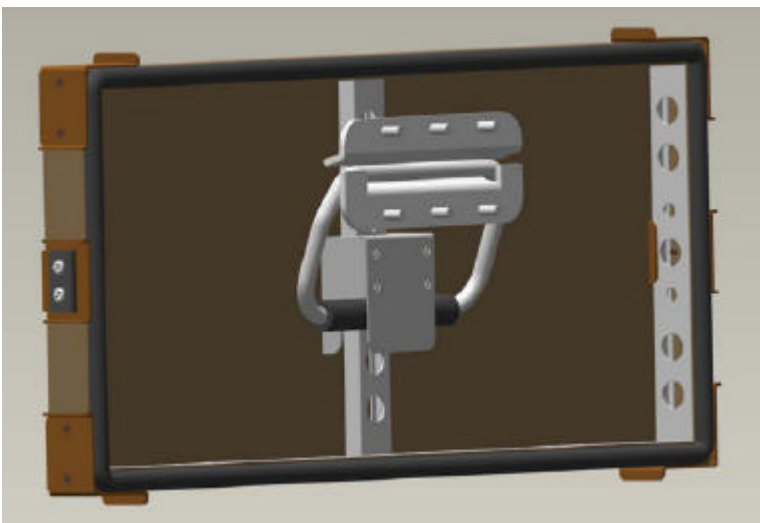
Unit as shipped



Front and Rear Doors removed

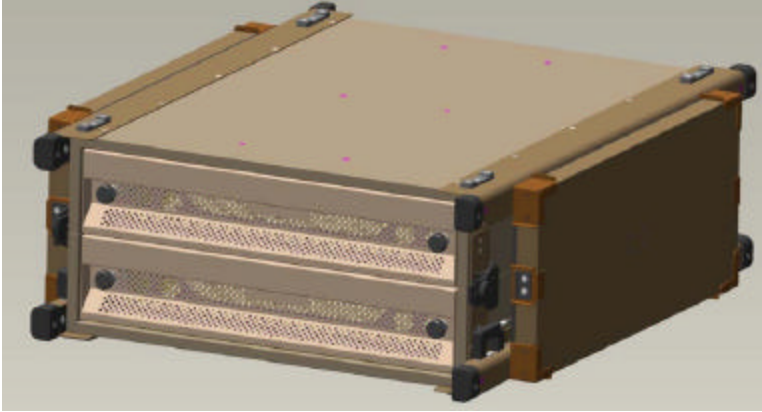


Door is attached to the side handles

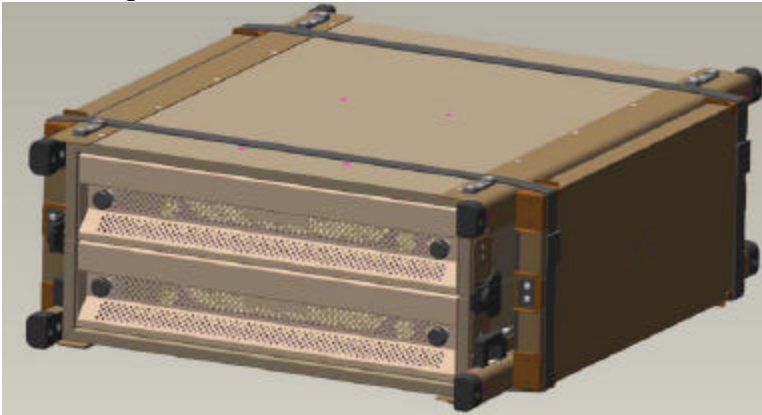


## Unit Assembly (Door Stowage)

Doors installed over handles



Door Straps installed for shock and vibration conditions

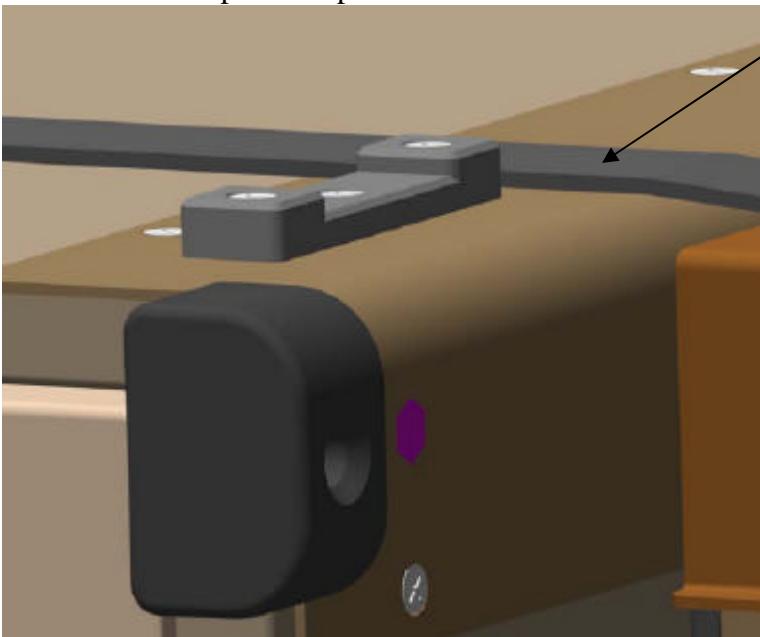


## Unit Assembly (Locking Cabinets Together)

Primary Cabinet with doors stowed



Cabinet Guide top close-up



**Door Straps not  
Over Cabinet  
Guide**

## Unit Assembly (Locking Cabinets Together)

Cabinets guide bottom close-up



Expansion Cabinet placed on top of Primary Cabinet



**Door Straps not  
Over Cabinet  
Foot**



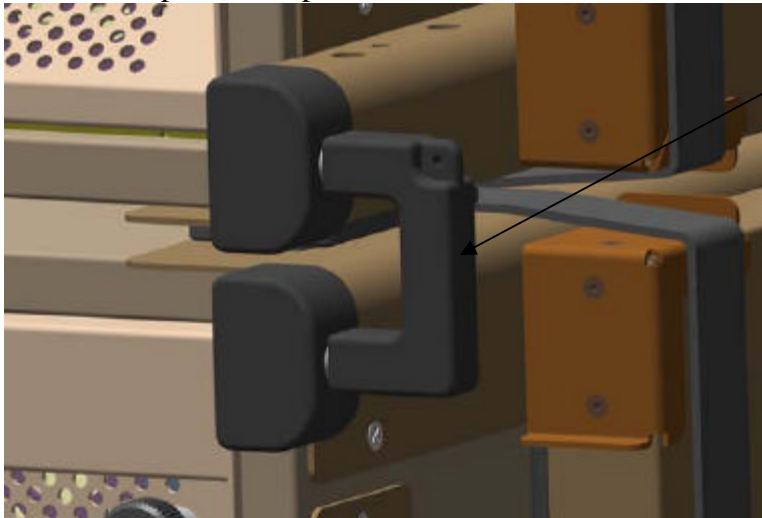
## Unit Assembly (Locking Cabinets Together)

Assembled unit with attachment pins installed



Attachment Pins  
4 Places

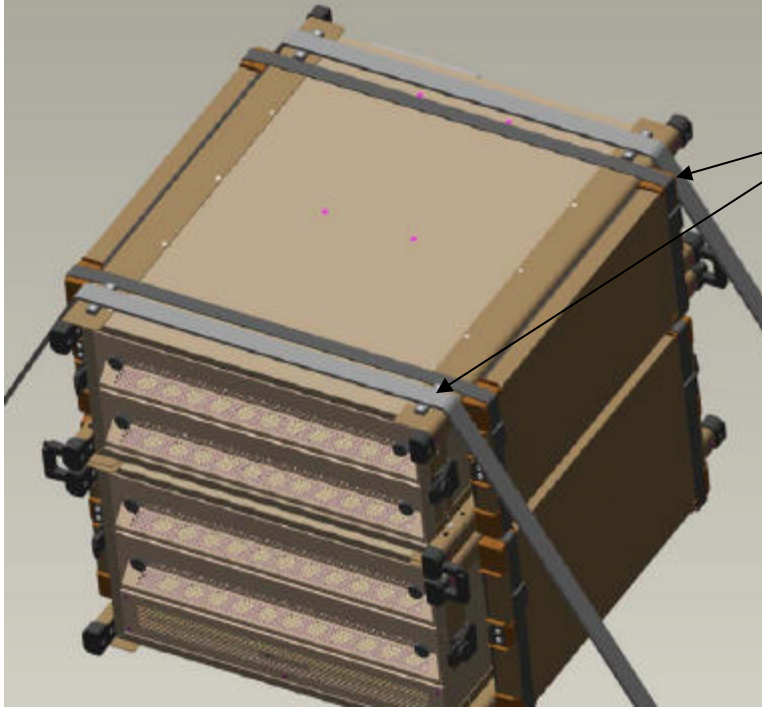
Attachment pin close-up



Attachment Pin  
Close-up

## Unit Assembly

Guides for Tie Down Straps for MIL-STD-901D conditions

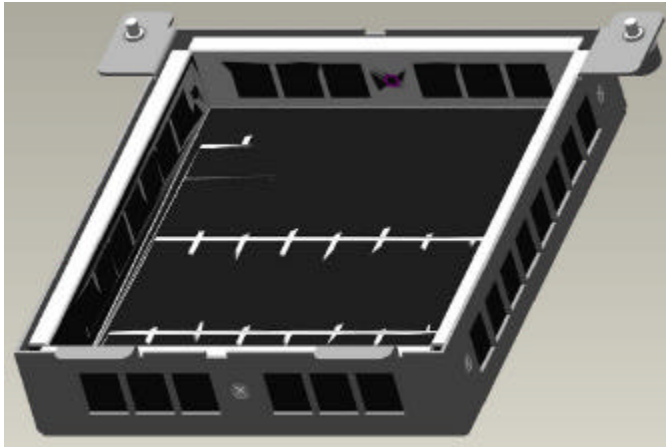


**Tie Down Straps  
Over Cabinet  
Guides**

## Maintenance

To be performed every 6 months (more often in dirty environments)

- Fan filters: should be removed (thumb screws) from the chassis and cleaned using compressed air



- Fan Filter replacement part number: 163-0157-000-0C
- Drawer fronts should be wiped down with a clean, dry towel
- There are no user serviceable parts inside



## Ethernet Switch Specifications

### Network Ports:

- \*8, 10 or 100 Mbps ports, 1 Fixed Ethernet 10/100/1000 uplink ports

### Performance:

Forwarding rate based on 64-byte packets:

- \*\*Catalyst C2960-8TC-L: 6.5 Mpps

### Weight:

- 3.6 kg (8 lb)

### Dimensions:

- W 445 mm (17.50")
- D 236 mm (9.30")
- H 44 mm (1.73")

### Standards Compliance:

- IEEE 802.1D Spanning Tree Protocol
- IEEE 802.1p CoS Prioritization
- IEEE 802.1Q VLAN
- IEEE 802.1s
- IEEE 802.1w
- IEEE 802.1x
- IEEE 802.1AB (LLDP)
- IEEE 802.3ab
- IEEE 802.3af
- IEEE 802.3ah (100BASE-X single/multimode fiber only)
- IEEE 802.3x full duplex on 10BASE-T, 100BASE-TX, and 1000BASE-T ports
- IEEE 802.3 10BASE-T Specification
- IEEE 802.3u 10BASE-TX Specification
- IEEE 802.3ab 1000BASE-T Specification
- IEEE 802.3z 1000BASE-X Specification
- 100BASE-BX (SFP)
- 100BASE-FX (SFP)

\* Link speeds dependant on switch installed

\*\* Alternate switches available upon request or cabinet without switch installed

### **Standards Compliance (cont.)**

- 100BASE-LX (SFP)
- 1000BASE-BX (SFP)
- 1000BASE-SX (SFP)
- 1000BASE-LX/LH (SFP)
- 1000BASE-ZX (SFP)
- 1000BASE-CWDM SFP 1470nm
- 1000BASE-CWDM SFP 1490nm
- 1000BASE-CWDM SFP 1510nm
- 1000BASE-CWDM SFP 1530nm
- 1000BASE-CWDM SFP 1550nm
- 1000BASE-CWDM SFP 1570nm
- 1000BASE-CWDM SFP 1590nm
- 1000BASE-CWDM SFP 1610nm
- RMON I and II Standards
- SNMPv1, SNMPv2c, and SNMPv3

### **Status LEDs:**

#### **Unit:**

• Multifunction LEDs per port for port status; half-duplex and full-duplex mode; and 10BASE-T, 100BASE-TX, and 1000BASE-T indication as well as switch-level status LEDs for system, and redundant power supply provide a comprehensive and convenient visual management system.

### **Electromagnetic Compatibility Certifications:**

- FCC Part 15 Class A
- EN 55022 Class A (CISPR22)
- EN 55024 (CISPR24)
- AS/NZS CISPR22 Class A
- CE
- CNS13438 Class A
- MIC
- GOST
- China EMC Certifications

### **Environmental Specifications:**

#### **Operating temperature:**

- 0° C to 45° C, up to 5,000ft. (1,500m)

#### **Operating humidity:**

- 20% to 85% max. relative humidity, non-condensing

## **Inverter Specifications**

### **Input Voltage Range:**

- 10-15 VDC

### **Over Voltage Shutdown**

- Over 15 VDC

### **Under Voltage Shutdown**

- Under 10 VDC

### **Overload Shutdown**

- Yes

### **Thermal Shutdown**

- Yes

### **Short circuit Shutdown**

- Yes

### **Weight**

- 2.6 lbs

### **Dimensions**

5.0" x 2.0" x 7.4"

## Field Replaceable Parts List

<b>Part Description</b>	<b>Part Number</b>
<b>Caster, 3", swivel, with lock</b>	<b>015-2066-000-0P</b>
<b>Caster, 3", rigid, w/o lock</b>	<b>015-2067-000-0P</b>
<b>Line Cord, AC, black, 15 Amp, 10ft</b>	<b>403-0209-000-WH</b>
<b>Line Cord, IEC C13 to C14, 5ft</b>	<b>403-0260-000-WH</b>
<b>Fan Control Cable, DB9F to DB9M, 5ft</b>	<b>403-0261-000-WH</b>
<b>CAT5e cable, 5ft</b>	<b>403-0174-000-WH</b>
<b>563-2002-F24-00 Door Front/Rear</b>	<b>163-0154-162-0C</b>
<b>563-2003-F23-00 Door Front/Rear</b>	<b>163-0155-162-0C</b>
<b>Door Strap</b>	<b>015-2499-000-0P</b>
<b>Tie Down Strap</b>	<b>015-2500-000-0P</b>
<b>Fan Filter</b>	<b>163-0157-000-0C</b>
<b>Drawer Assembly</b>	<b>163-0150-000-0C</b>



## Limited Warranty

The EMMC is warranted for a period of \*1 year from the ship date against defects in workmanship and component failure. If the equipment described in the manual is used in a manner not specified by Tracewell Systems, the internal protection provided may be impaired. For a list of Field Replaceable Parts (FRP's) consult this document.

**For replacement parts contact Tracewell Systems Repair Center.**

**Please have the serial number of the EMMC and the address of where you would like the replacement parts shipped before you call.**

Replacement parts will be shipped from our plant within two working days and failed parts should be returned to Tracewell Systems Repair Center, 567 Enterprise Dr., Westerville, OH 43081 using the carton and packing material the replacement parts are shipped in.

An RMA (Return Material Authorization) number will be given to you when you call as well as a specified shipping method. Please mark RMA number clearly on the outside of the return shipping container.

### **Service:**

For warranty and non-warranty service, contact Tracewell Systems Repair Center at:

**1-614-846-6175**

**Fax us at 1-614-846-4450**, or contact us via the web at

**[www.tracewellsystems.com](http://www.tracewellsystems.com)**

\* Extended warranties are available; please contact the factory for specifics