



Connect. Accelerate. Outperform.™

648-Port EDR InfiniBand Switch-IB™ Switch Dismantling Guide

PN: MCS7500

Rev 1.0

NOTE:

THIS HARDWARE, SOFTWARE OR TEST SUITE PRODUCT ("PRODUCT(S)") AND ITS RELATED DOCUMENTATION ARE PROVIDED BY MELLANOX TECHNOLOGIES "AS-IS" WITH ALL FAULTS OF ANY KIND AND SOLELY FOR THE PURPOSE OF AIDING THE CUSTOMER IN TESTING APPLICATIONS THAT USE THE PRODUCTS IN DESIGNATED SOLUTIONS. THE CUSTOMER'S MANUFACTURING TEST ENVIRONMENT HAS NOT MET THE STANDARDS SET BY MELLANOX TECHNOLOGIES TO FULLY QUALIFY THE PRODUCT(S) AND/OR THE SYSTEM USING IT. THEREFORE, MELLANOX TECHNOLOGIES CANNOT AND DOES NOT GUARANTEE OR WARRANT THAT THE PRODUCTS WILL OPERATE WITH THE HIGHEST QUALITY. ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT ARE DISCLAIMED. IN NO EVENT SHALL MELLANOX BE LIABLE TO CUSTOMER OR ANY THIRD PARTIES FOR ANY DIRECT, INDIRECT, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES OF ANY KIND (INCLUDING, BUT NOT LIMITED TO, PAYMENT FOR PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY FROM THE USE OF THE PRODUCT(S) AND RELATED DOCUMENTATION EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.



Mellanox Technologies
 350 Oakmead Parkway Suite 100
 Sunnyvale, CA 94085
 U.S.A.
www.mellanox.com
 Tel: (408) 970-3400
 Fax: (408) 970-3403

Mellanox Technologies, Ltd.
 Hakidma 26
 Ofer Industrial Park
 Yokneam 2069200
 Israel
www.mellanox.com
 Tel: +972 (0)74 723 7200
 Fax: +972 (0)4 959 3245

© Copyright 2015. Mellanox Technologies. All Rights Reserved.

Mellanox®, Mellanox logo, BridgeX®, ConnectX®, Connect-IB®, CoolB ox®, CORE-Direct®, GPUDirect®, InfiniBridge®, InfiniHost®, InfiniScale®, Kotura®, Kotura logo, Mellanox Connect. Accelerate. Outperform logo, Mellanox Federal Systems®, Mellanox Open Ethernet®, Mellanox Virtual Modular Switch®, MetroX®, MetroDX®, MLNX-OS®, Open Ethernet logo, PhyX®, ScalableHPC®, SwitchX®, TestX®, The Generation of Open Ethernet logo, UFM®, Virtual Protocol Interconnect®, Voltaire® and Voltaire logo are registered trademarks of Mellanox Technologies, Ltd.

CyPU™, ExtendX™, FabricIT™, FPGA Direct™, HPC-X™, Mellanox Care™, Mellanox CloudX™, Mellanox NEO™, Mellanox Open Ethernet™, Mellanox PeerDirect™, NVMeDirect™, StPU™, Switch-IB™, Unbreakable-Link™ are trademarks of Mellanox Technologies, Ltd.

All other trademarks are property of their respective owners.

Table of Contents

Revision History	5
About this Manual	6
Policy Statement	7
Chapter 1 Dismantling	8
1.1 General Information	8
Chapter 2 Module Extraction	10
2.1 Extracting Power Supply Units	10
2.2 Extracting Chassis Fan Units	11
2.3 Extracting Leaf Modules	11
2.4 Extracting Spine Modules	14
2.5 Extracting Management Modules	16
Chapter 3 Board Extraction from the Chassis Body	21

List of Figures

Figure 1:	Front and Rear View of the CS7500	9
Figure 2:	AC Inlets	10
Figure 3:	Power Supply Location	10
Figure 4:	Power Supply Unit	11
Figure 5:	Leaf Fan Module	11
Figure 6:	Releasing Leaf Ejector Handles	11
Figure 7:	Open Leaf Module	12
Figure 8:	Open Leaf Module	12
Figure 9:	Open Leaf Module	13
Figure 10:	Pulling Out the PCB Boards From the Leaf Module	13
Figure 11:	Releasing Spine Ejector Handles	14
Figure 12:	Removing Spine Fan Modules	14
Figure 13:	Opening Spine Module	15
Figure 14:	Removing Spine Module PCB Board	15
Figure 15:	Releasing Management Ejector Handles	16
Figure 16:	Opening Management Module Cover	16
Figure 17:	Removing Air Wing Divider	17
Figure 18:	Removing Management Module's Inner Cables	17
Figure 19:	Removing Management Module Faceplate	18
Figure 20:	Removing Management Module Bottom Cover	18
Figure 21:	Removing Management Module Support Beam	19
Figure 22:	Removing Management Module PCB Board	19
Figure 23:	Removing Management Module PCB Board	20

Revision History

Table 1 - User Manual Revision History

Rev	Date	Description
1.0	05 August 2015	First release

About this Manual

This manual is intended as a reference for dismantling the Switch-IB™ based InfiniBand CS7500 director switch in preparation of meeting the requirements of WEEE recycling.

Intended Audience

This manual is intended for technicians who dismantle the switch systems as a reference for WEEE recyclers.

Mellanox Technologies emphasizes the importance of carefully following all procedures described in this guide to prevent personal injury.

Policy Statement

Mellanox Technologies recognizes the importance of developing connectivity solutions that not only enable our customers to optimize their data centers performance, but also protect the environment and ensure that future generations enjoy its bounties. Mellanox Technologies is committed, therefore, to meeting the requirements of the European Union's WEEE (waste electrical and electronic equipment) directive. The directive mandates how the materials used in electrical and electronic equipment must be disposed of.

Mellanox Technologies has worked closely with its suppliers to eliminate hazardous materials from its products. There are instances, however, where it has not proven possible to completely eliminate all hazardous materials. Consequently, all applicable products are labeled with a crossed out "wheelie" bin symbol, indicating that special care must be applied to their disposal and / or recycling.

Director Switch Systems – RoHS

The chassis switch systems comply with the RoHS directive under the exemption known as RoHS-6.

All switch systems comply with the RoHS directive under the exemptions known as RoHS-6. The RoHS exemptions are an integral part of the OPN.

1 Dismantling

This document provides detailed instructions for dismantling the InfiniBand chassis switch systems. Follow the instructions in the order they are presented.

1.1 General Information

The switch system is assembled using screws, and modules with handles, snaps and latches.

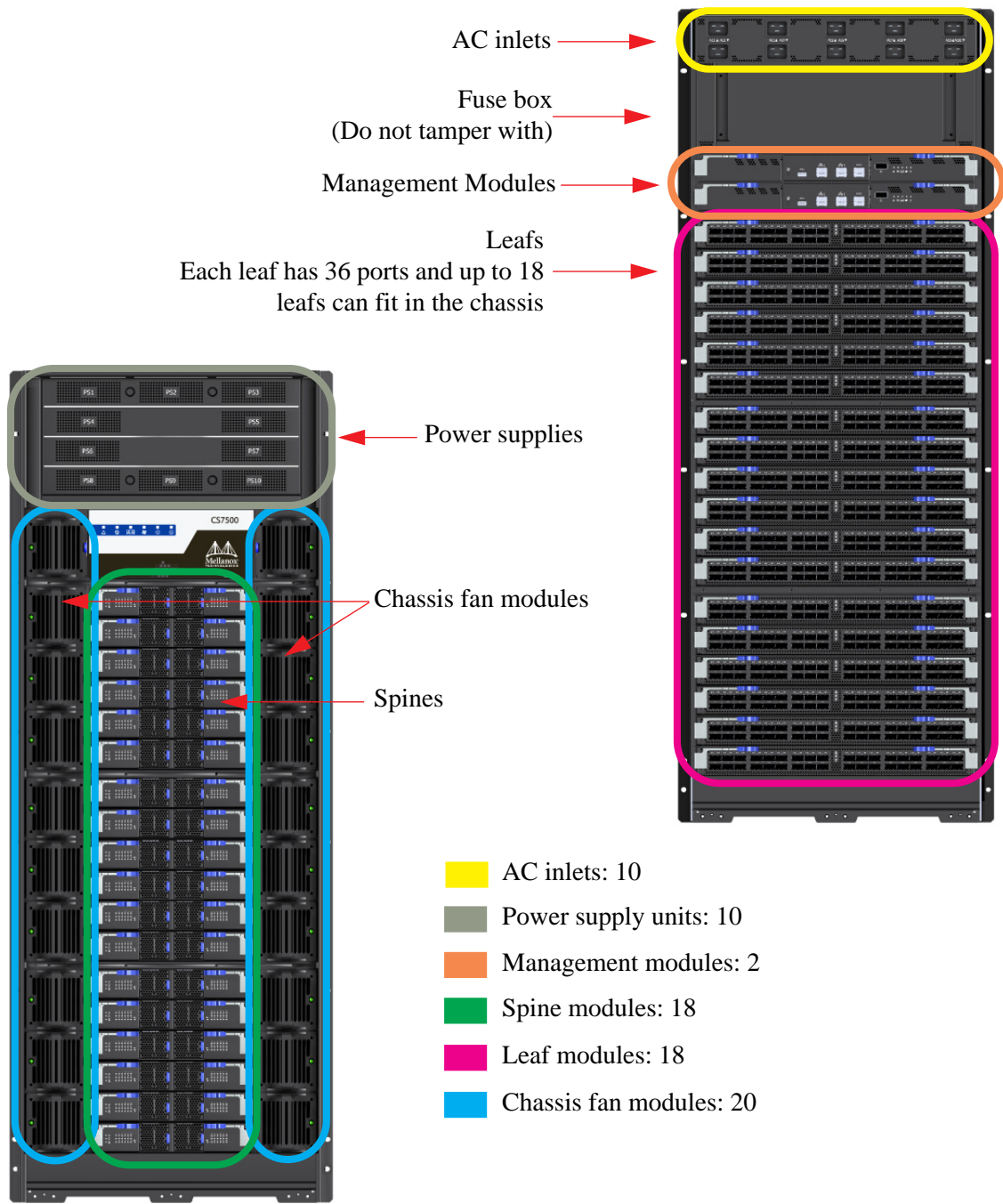
To disassemble the switch system parts you will need a small Phillips screwdriver and a medium slotted screwdriver. A screw gun is highly recommended as the larger chassis can have more than 300 screws.

The pictures displayed in the following pages provide visual guidance explaining how to remove the modules from the mechanical base.

Chassis switch systems are comprised of:

- Leaf modules
- Spine modules
- Management modules
- Fan modules
- Power supply modules
- Chassis body

Figure 1: Front and Rear View of the CS7500

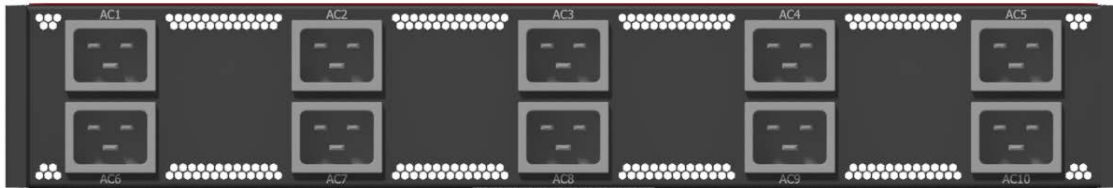


2 Module Extraction

2.1 Extracting Power Supply Units

Step 1. Remove all of the power cords from the back side of chassis.

Figure 2: AC Inlets



Step 2. Remove the power supply covers from the spine side. There are four Phillips head screws for the cover plates.

Figure 3: Power Supply Location

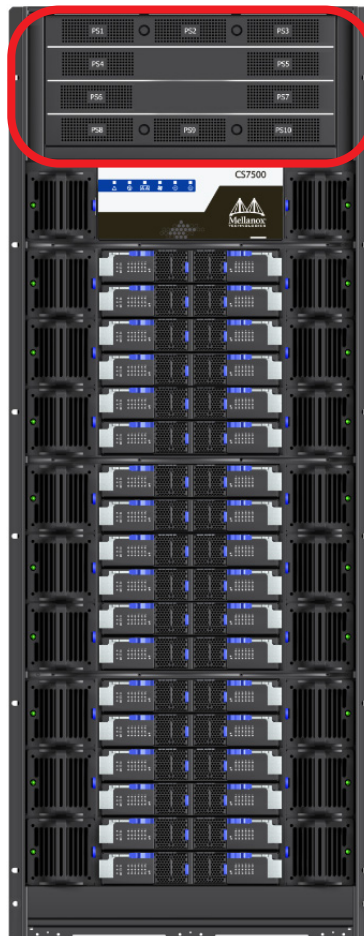
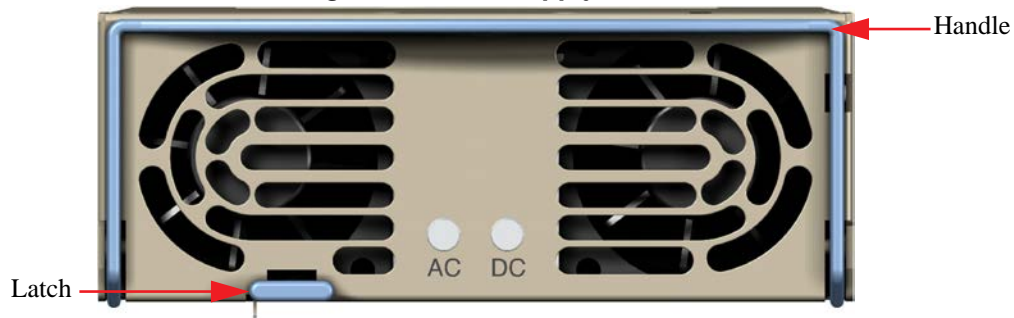
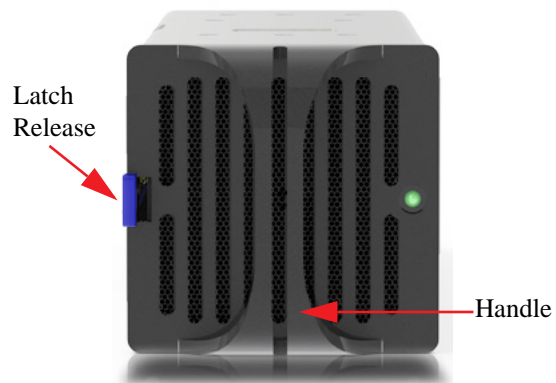


Figure 4: Power Supply Unit

- Step 3.** Grasping the handle with one hand, push the black latch release while pulling the handle outward.
- Step 4.** Remove all of the PSUs.

2.2 Extracting Chassis Fan Units

- Step 1.** Push and hold the blue latch release. See [Figure 5](#).
- Step 2.** Slowly pull out the fan module using the handle.

Figure 5: Leaf Fan Module

2.3 Extracting Leaf Modules

Each leaf module has ejectors that lock the module in place and serve as a lever for seating or extracting.

- Step 1.** Disconnect all cables connected to the leaf.
- Step 2.** Push the ejector handles in the direction of the red arrows in [Figure 6](#) and pull them outwards to unlock the ejectors from the chassis.

Figure 6: Releasing Leaf Ejector Handles

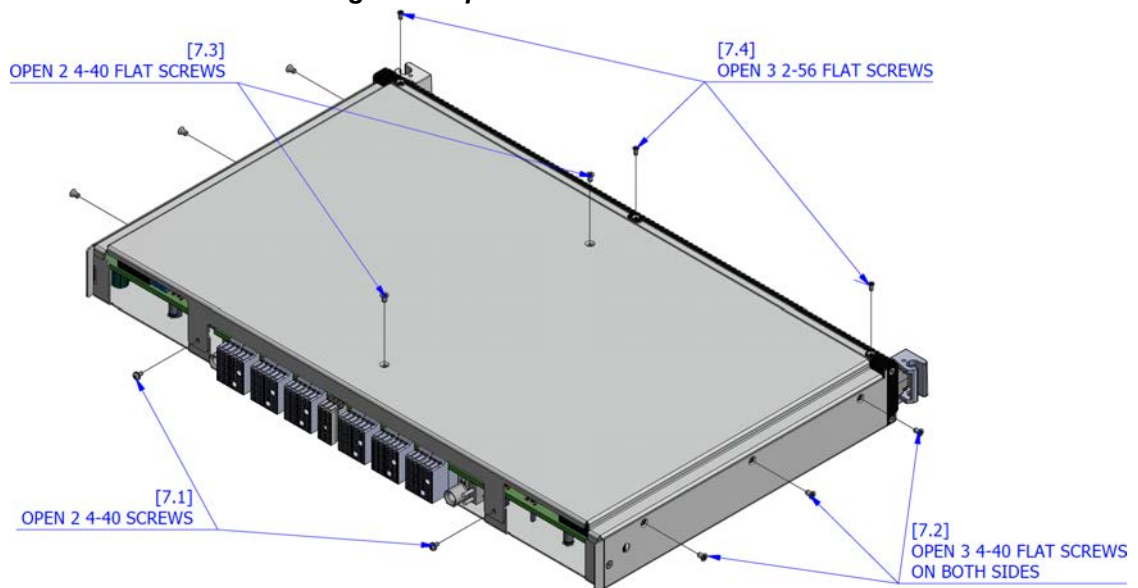
- Step 3.** Open the ejectors until it is 45 degrees from the leaf.
- Step 4.** Pull out the module half-way through the guiding rails using the ejector handles.
- Step 5.** Re-lock the ejector handles.
- Step 6.** Hold the body of the leaf on both sides and remove it from the chassis.



The module is short, therefore do not let go of it while sliding it out.

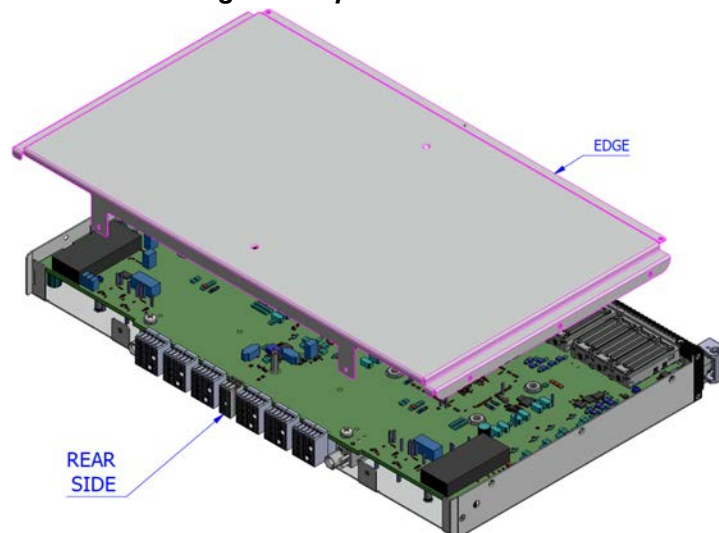
- Step 7.** Remove the screws from the top cover.

Figure 7: Open Leaf Module



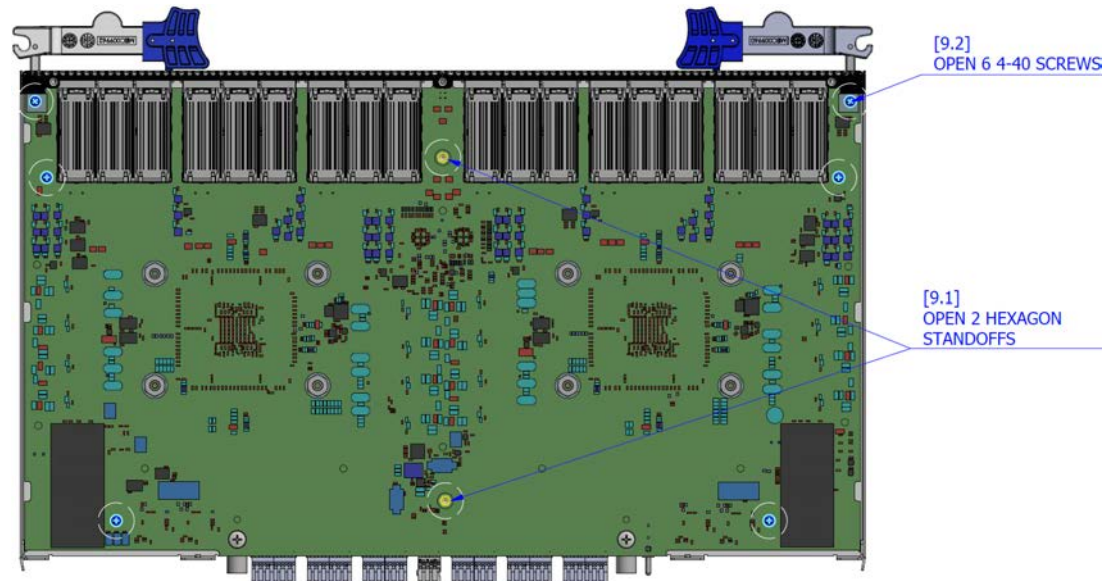
- Step 8.** Push top cover to the rear side until the edge pops out, then pick it up.

Figure 8: Open Leaf Module



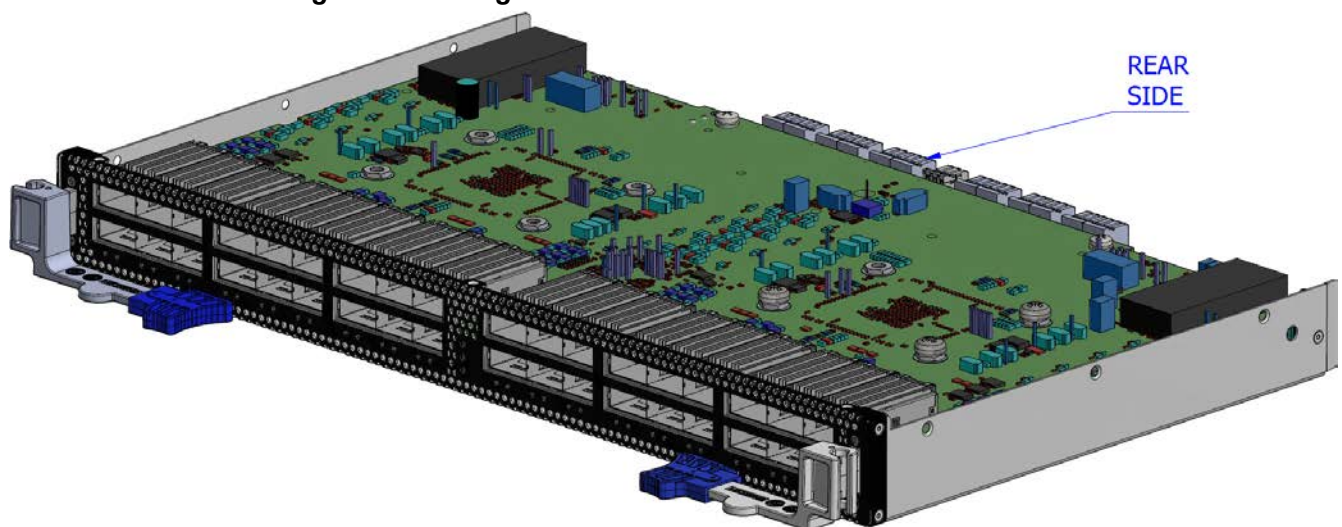
Step 9. Remove the screws from the PCB board of the leaf module.

Figure 9: Open Leaf Module



Step 10. Pull PCB board towards the rear side (for 3mm maximum) just so the port LEDs are out their assigned front-panel holes.

Figure 10: Pulling Out the PCB Boards From the Leaf Module

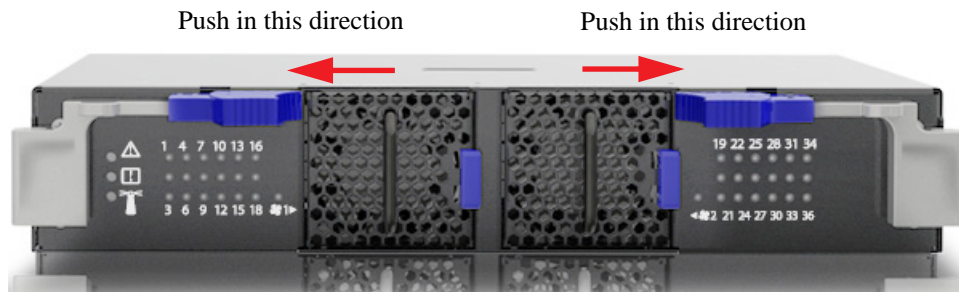


Step 11. Pick the PCB board from the rear side from the leaf's box.

2.4 Extracting Spine Modules

- Step 1.** Push the ejector handles in the direction of the red arrows in Figure 11 and pull them outwards to unlock the ejectors from the chassis.

Figure 11: Releasing Spine Ejector Handles



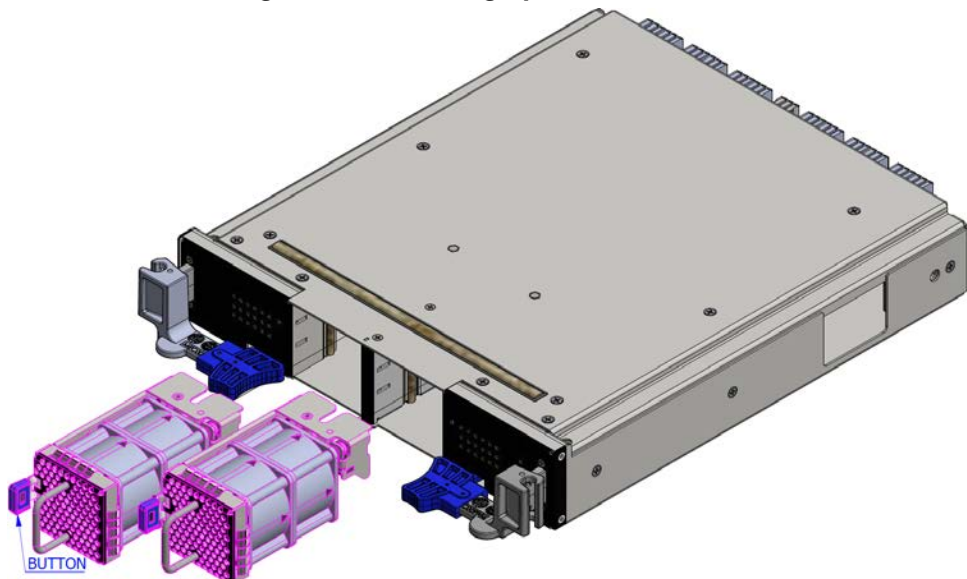
- Step 2.** Open the ejectors until they are at a 45 degree angle from the module.



Do not use the fan FRU handle to extract the spine module.

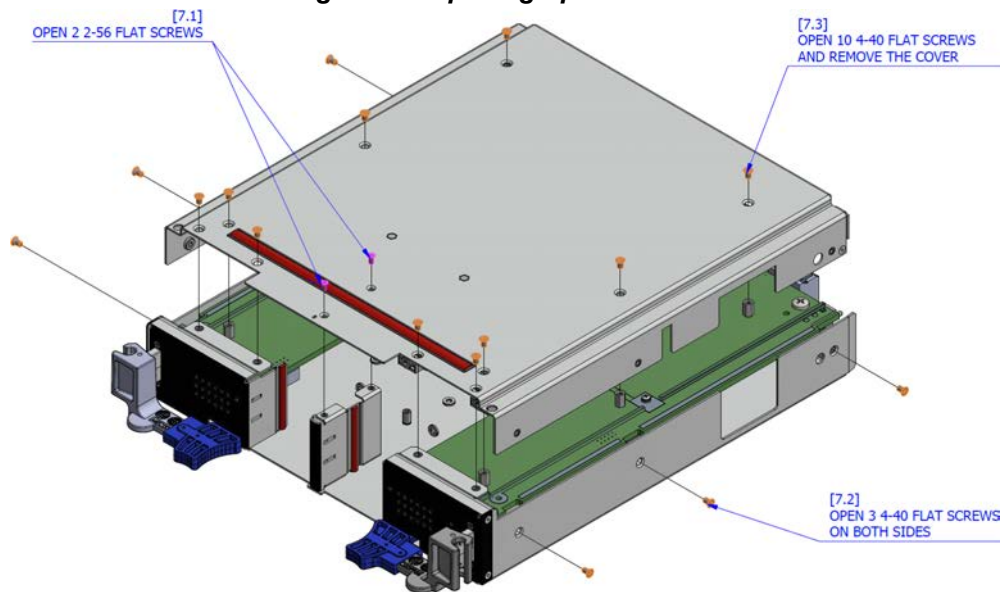
- Step 3.** Pull out the module half-way through the guiding rails using both ejectors.
- Step 4.** Re-lock the ejector handles.
- Step 5.** Hold the body of the module on both sides and remove it from the chassis.
- Step 6.** Extract the spine fan module by pushing the blue latch button while pulling the module handle out.

Figure 12: Removing Spine Fan Modules



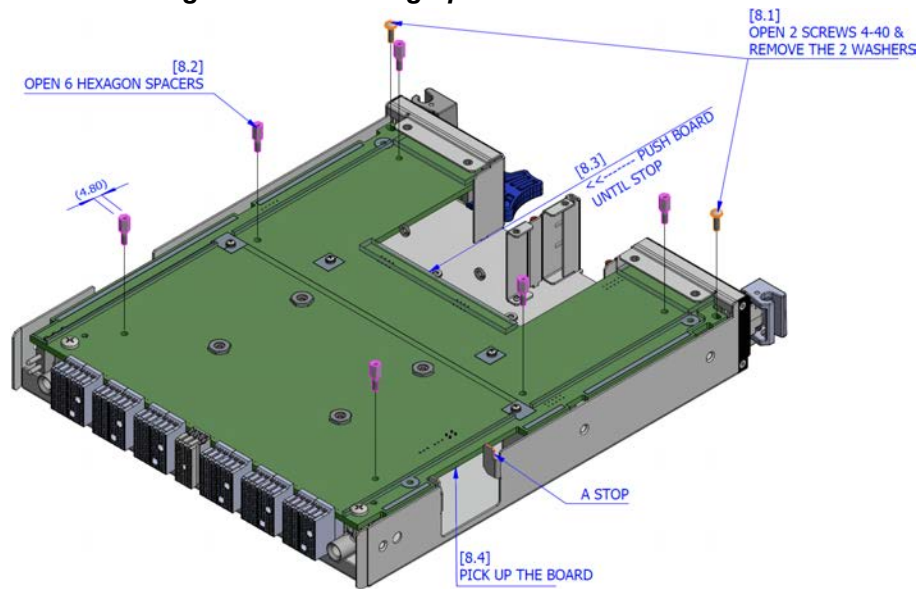
Step 7. Remove the upper cover.

Figure 13: Opening Spine Module



Step 8. Remove the PCB board from the spine module box.

Figure 14: Removing Spine Module PCB Board



2.5 Extracting Management Modules

- Step 1.** Disconnect all cables connected to the management module.
- Step 2.** Push the ejector handles in the direction of the red arrows in [Figure 15](#) and pull them outwards to unlock the ejectors from the chassis.



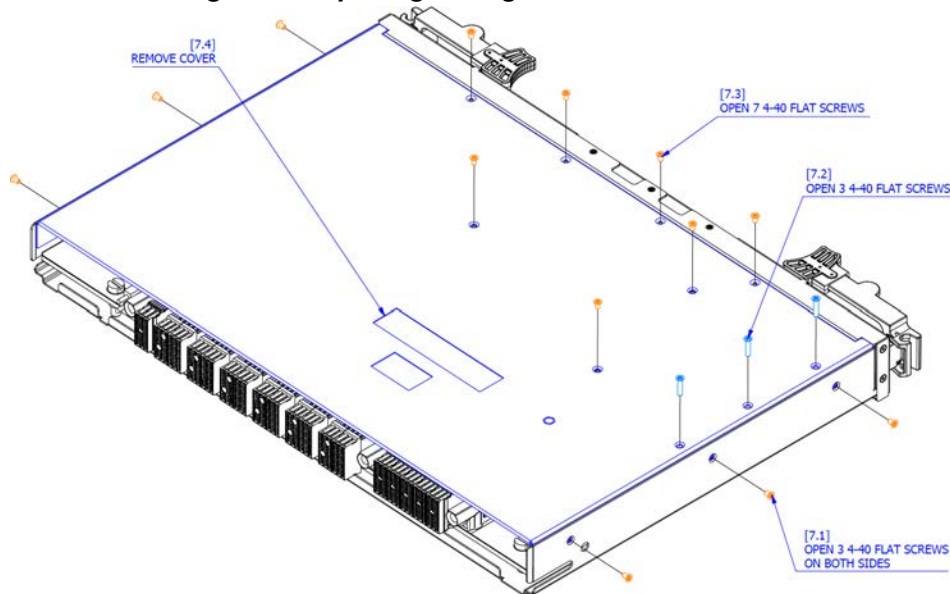
- Step 3.** Open the ejectors until they are 45 degrees from the module.
- Step 4.** Pull out the module half-way through the guiding rails using the ejector handle.
- Step 5.** Re-lock the ejector handle.
- Step 6.** Hold the body of the module on both sides and remove it from the chassis.



The module is short, therefore do not let go of it while sliding it out.

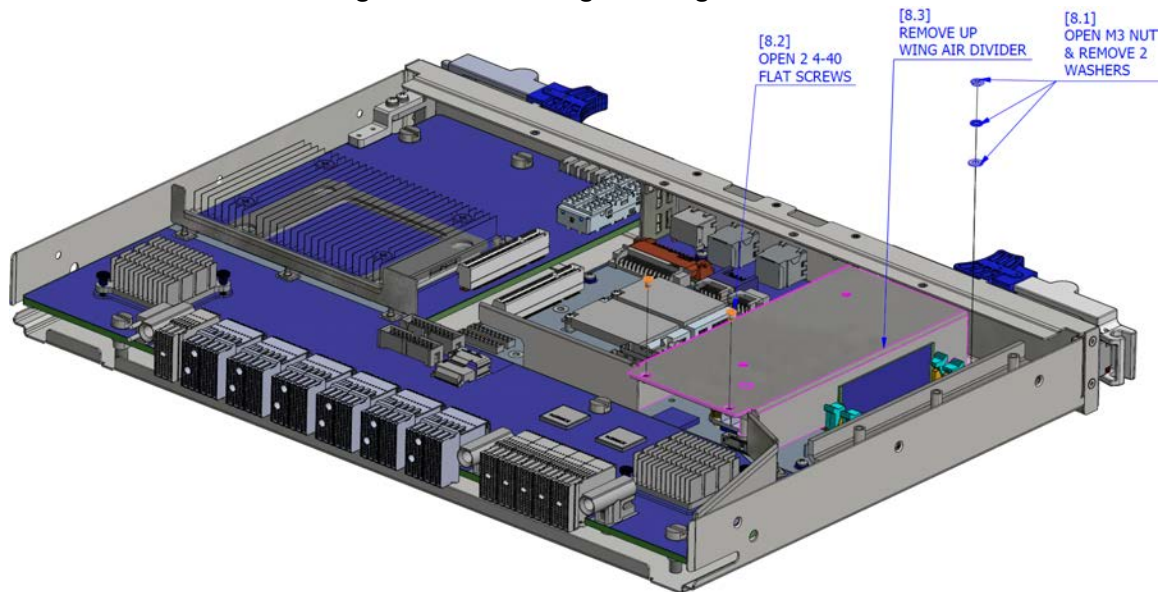
- Step 7.** Remove the upper cover.

Figure 16: Opening Management Module Cover



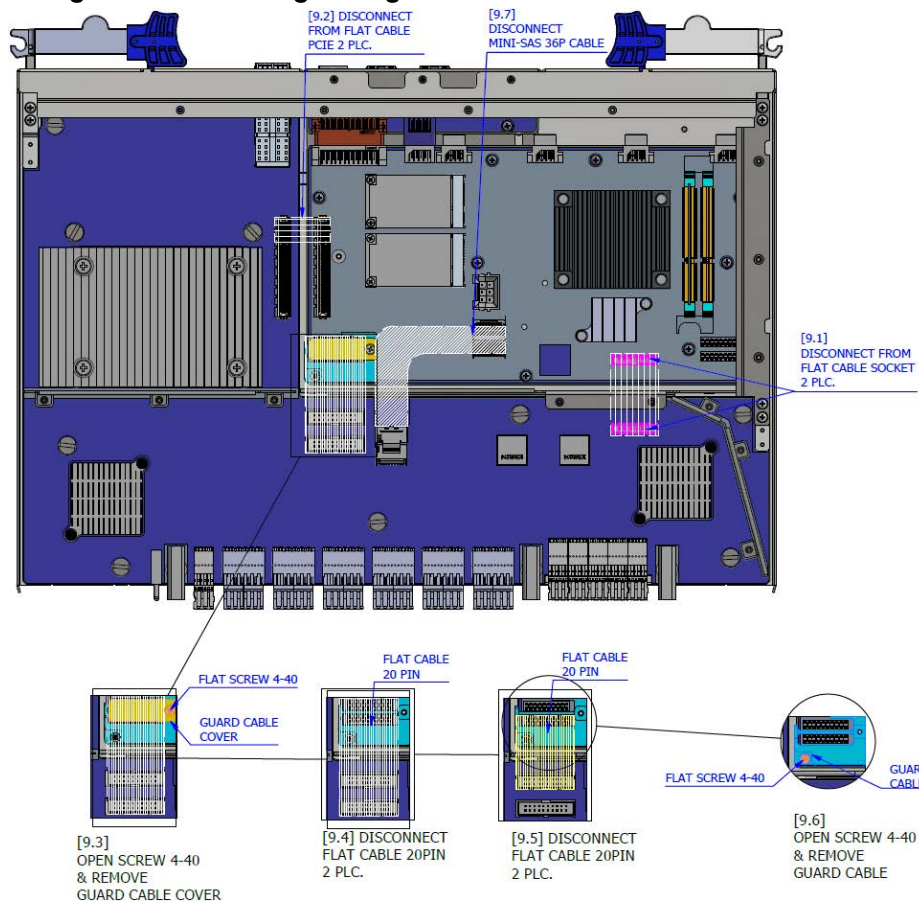
Step 8. Remove air wing divider.

Figure 17: Removing Air Wing Divider



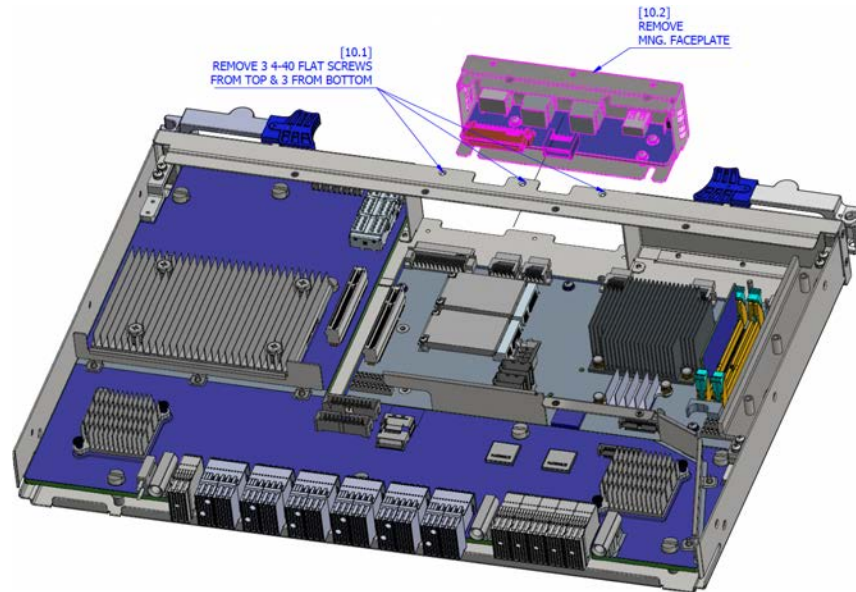
Step 9. Remove the inner cables of the management module.

Figure 18: Removing Management Module's Inner Cables



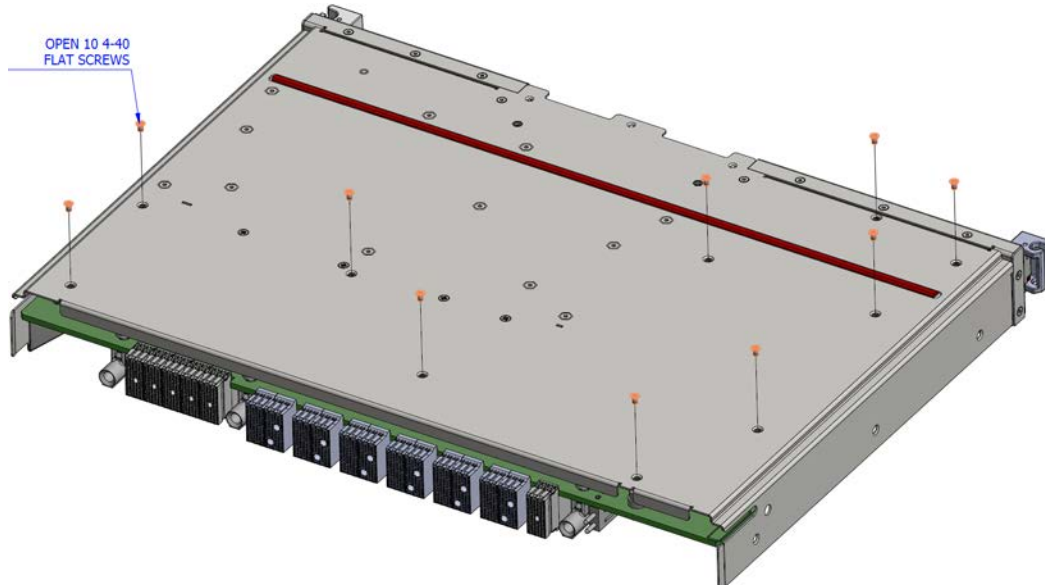
Step 10. Remove the faceplate of the management module.

Figure 19: Removing Management Module Faceplate



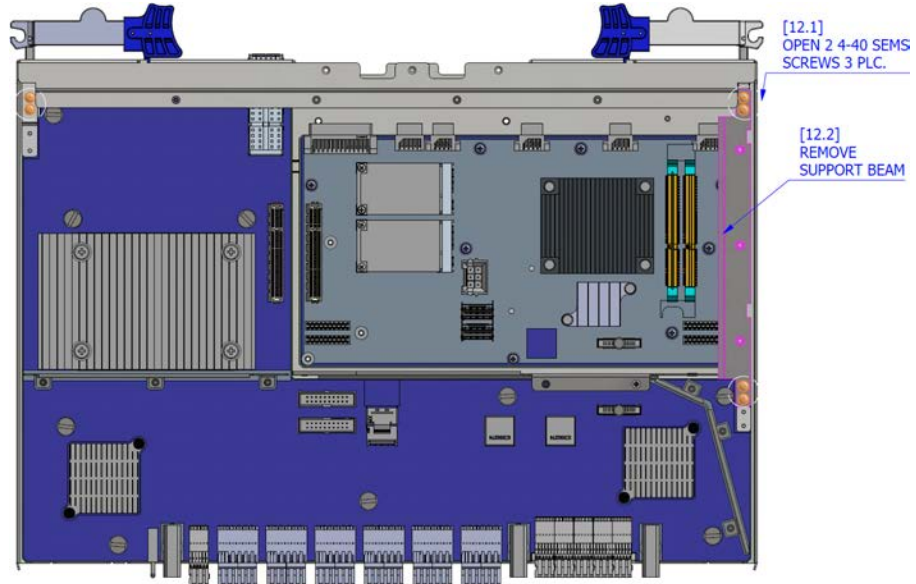
Step 11. Remove screws from the bottom plate of the management module box.

Figure 20: Removing Management Module Bottom Cover



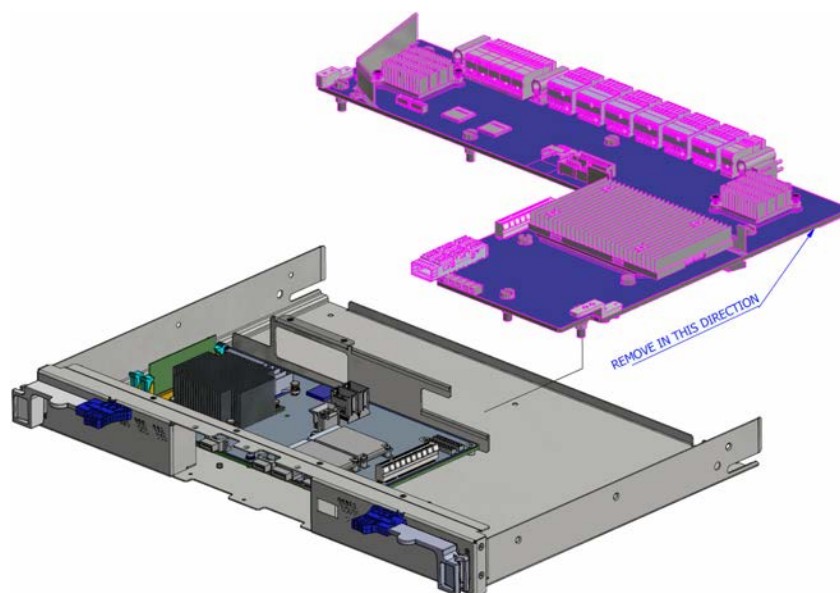
Step 12. Remove the support beam of the management module.

Figure 21: Removing Management Module Support Beam



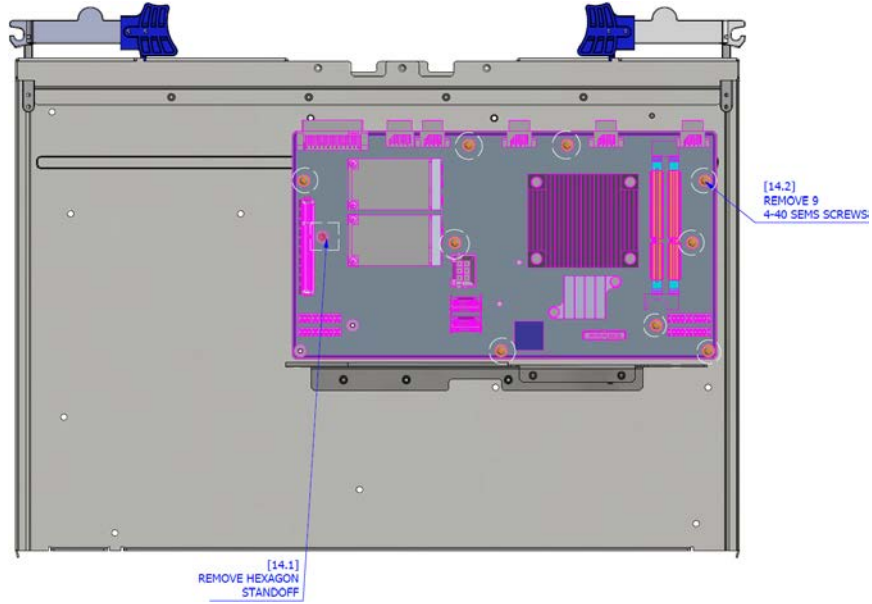
Step 13. Remove the PCB board from the management module box.

Figure 22: Removing Management Module PCB Board



Step 14. Remove the remaining board from the management module box.

Figure 23: Removing Management Module PCB Board



3 Board Extraction from the Chassis Body

The body of the chassis contains the following PC boards:

- Midplane
- Power backplanes; the 648 port has 4, other chassis have less power backplanes
- 2 fan boards

Step 1. Remove the Phillips screws that hold the sides and top on.



The CS7500 chassis has ~111 screws on each side.

Step 2. Disconnect all reachable harnesses.

Step 3. Remove the top fan assembly. There are 8 screws holding it on.

Step 4. Disconnect the 3 harnesses (1 flat and 2 power).

Step 5. Remove the screws holding the fan board (there are also latches that need to be unlatched 2 on one side of the chassis and one on the opposite side)

Step 6. Remove the upper fan board.

Step 7. Disconnect all of the harnesses to the upper power bar.

Step 8. Cut all cable ties.

Step 9. Remove the upper power bar.

Step 10. Remove the 8 screws holding the spine framework to the chassis.

Step 11. They are located just above the lower fans.

Step 12. Remove the spine framework from the chassis.

Step 13. Once the spine framework is removed, unscrew the 4 power backplanes.

Step 14. Unscrew the midplane.

Step 15. Unscrew and remove the lower fan board.