Identification of volatile and non-volatile storage and sanitization of system components

JUNIPER NETWORKS
QFX5120-48Y

REVISION 1.0
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1 INTRODUCTION

1.1 Purpose

The purpose of this document is to provide direction to identify and remove all non-volatile (NV) storage from the Juniper Networks QFX5120-48Y platform. Non-Volatile (NV) storage is a system memory that can store user data information and system configuration data even when system not powered. Volatile (V) storage is a system memory that only retains data or its contents while system powered but when system powered off or interrupted, its data or contents are immediately lost.

1.2 Scope

This document only addresses the QFX5120-48Y platform. While other platforms offered by Juniper Networks may contain similar hardware components, this document only applies to these devices. Furthermore, this document only provides direction for the identification and removal of NV storage components. It does not address destruction procedures for those components. As all of the NV storage components used in the QFX5120-48Y are commercial off-the-shelf (COTS) components, directions for destruction of those components are left to the governing Department, Agency, or Office.

2 EQUIPMENT OVERVIEW

2.1 Identification of Chassis

QFX5120-48Y delivers low latency, native 25GbE, rich Layer 2 and Layer 3 features, VXLAN overlay support, and 100GbE uplinks, making it the ideal switch for access and top-of-rack deployments.

The high-density 10GbE, 25GbE, 40GbE, and 100GbE ports also make the QFX5120-48Y ideally suited for deployment as leaf-and-spine and leaf topologies.

QFX5120-48Y has 48x25G + 8x100G fixed ports and it can be mounted in a 19" rack.

Figure 1 QFX5120-48Y Front view

2.2   Description of Field Replaceable Units (FRU)

The power supply, fan tray, and transceivers are hot swappable. You can remove and replace them without powering off the system or disrupting system functions.

None of these components contains stores user or system configuration data. All NV RAM is either soldered or installed onto the system board.

3   POWER DOWN AND REMOVAL OF NON-VOLATILE STORAGE

In order to ensure that no user data or system configurations remain resident on QFX5120-48Y platform, the following steps must be performed:

1. Power must be removed from the system to clear all volatile storage
2. Only the SATA SSD modules must be removed as they store user and configuration data
3. Other SPI Flash / EEPROM components shown for reference only, they don't store any user or configuration data

A detailed process is included in the following sections.

3.1   System Power Down

Power down the system by removing any connected power cords from power supply.

3.2   Disassembly of the QFX5120-48Y Chassis and Identification of NV storage

QFX5120-48Y does contain NV storages that is replaceable as well as it is soldered to the system board. In order to access the memory for removal, refer to the following steps:

i. Remove the power supplies from the system.
ii. Removing ear-mounts on both left and right side
iii. Remove power supplies and Fan modules from the system. Refer figure 2
     a. Move latch towards PSU Handle and Pull PSU out of Chassis.
     b. Unfasten the captive screws for each fan FRU and pull out the Fan FRU out of the chassis.

Figure 2 QFX5120-48Y PSU FRUs and FAN FRUs

iv. Remove twelve screws from the top of the system and 6 + 6 screws on left & right side of the system. One screw on the bottom side of the system. Refer Figure 3.
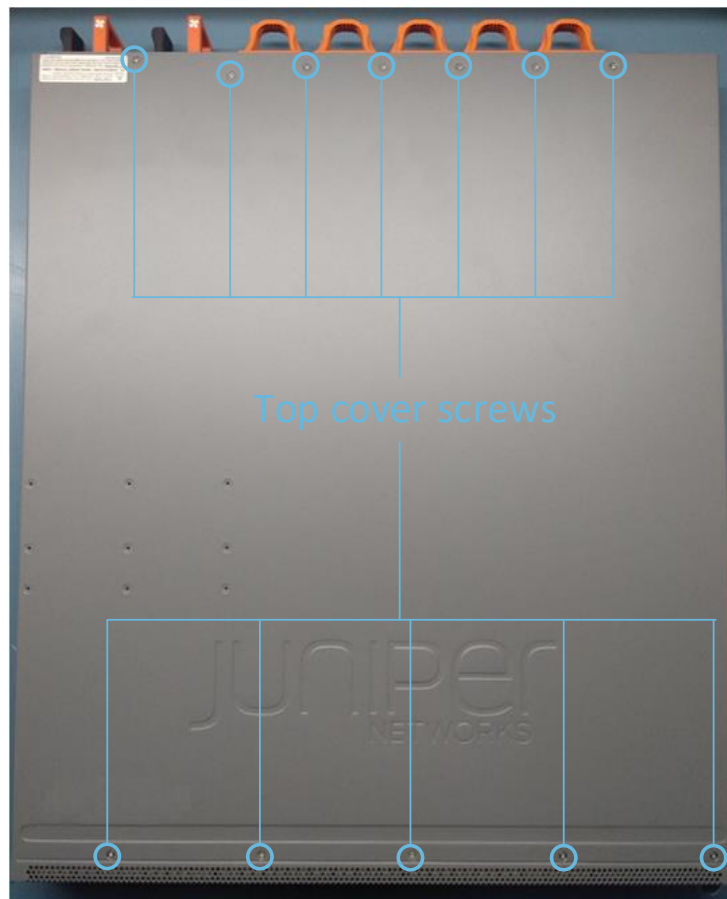

Figure 3 Top cover screws – Top view

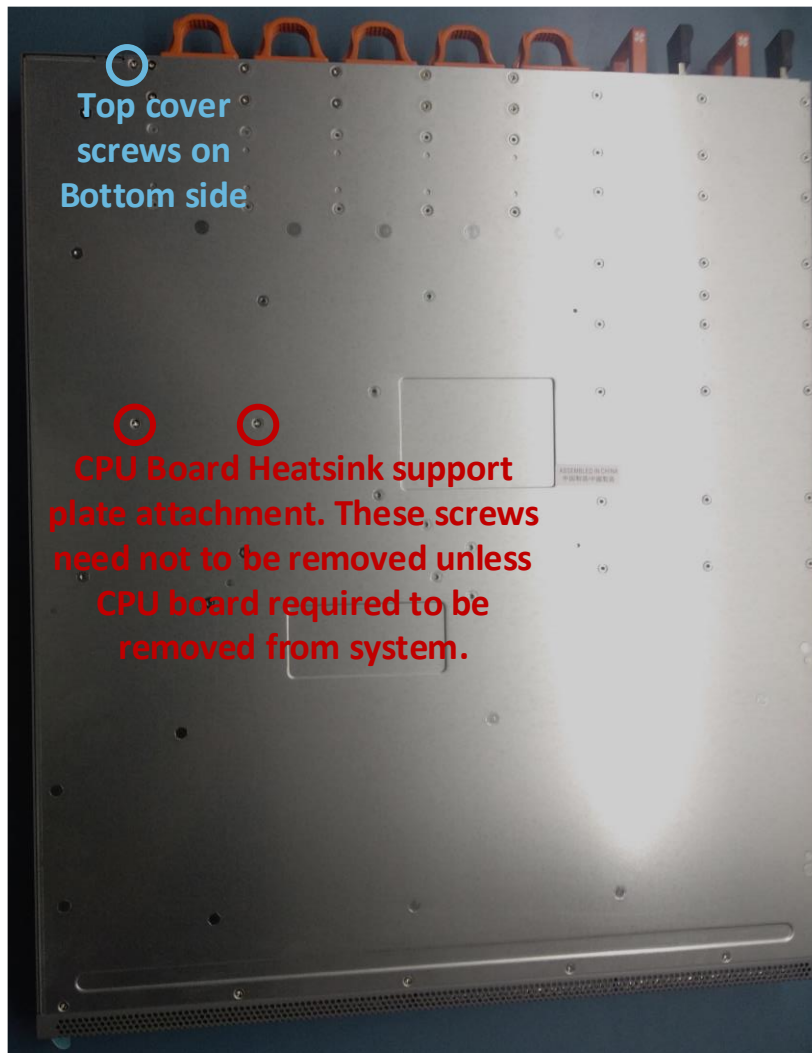*Figure 4 Screws on left and right side of the system*

Figure 5 Top cover screws on bottom side.

v. Gently slide top cover towards fan side then lift to remove the Top cover as show in Figure 6

Figure 6 Slide & lift the top Cover

vi. Removing Main board.
   a. PSUs needs to be removed from system prior to removal of main board.
   b. Ensure front panel screws were removed; hold the front panel both edges and pull-out to remove the front panel.
   c. Remove main board 15x screws (highlighted in red color circle) and 3x hex standoff (highlighted in aqua color circle)
   d. Hold the main board gently and pull-upwards to remove the main board
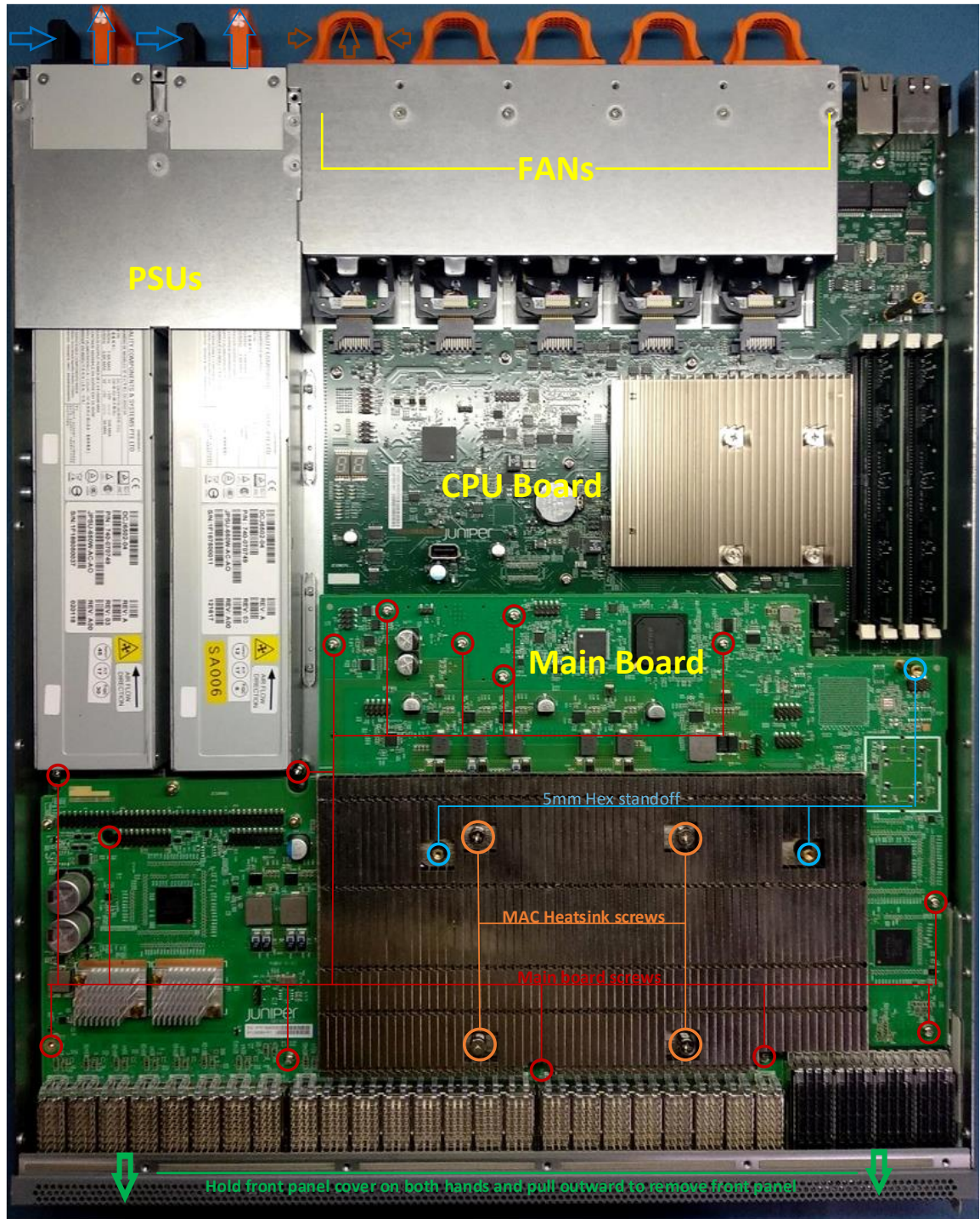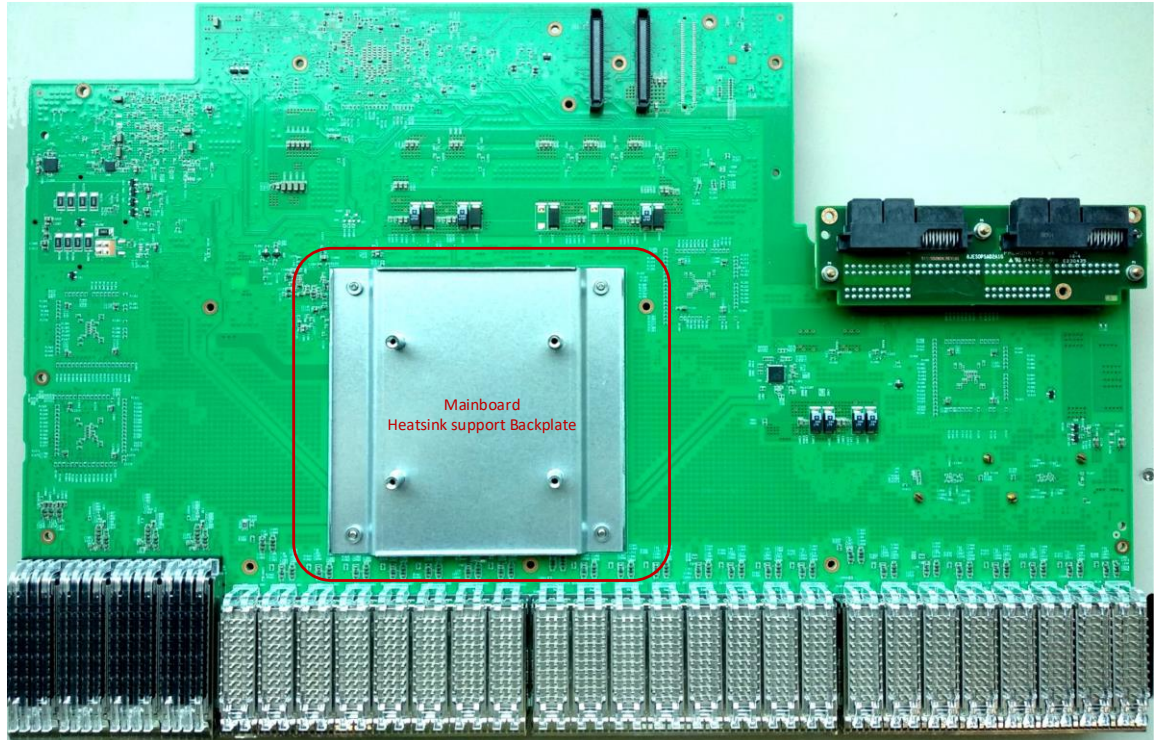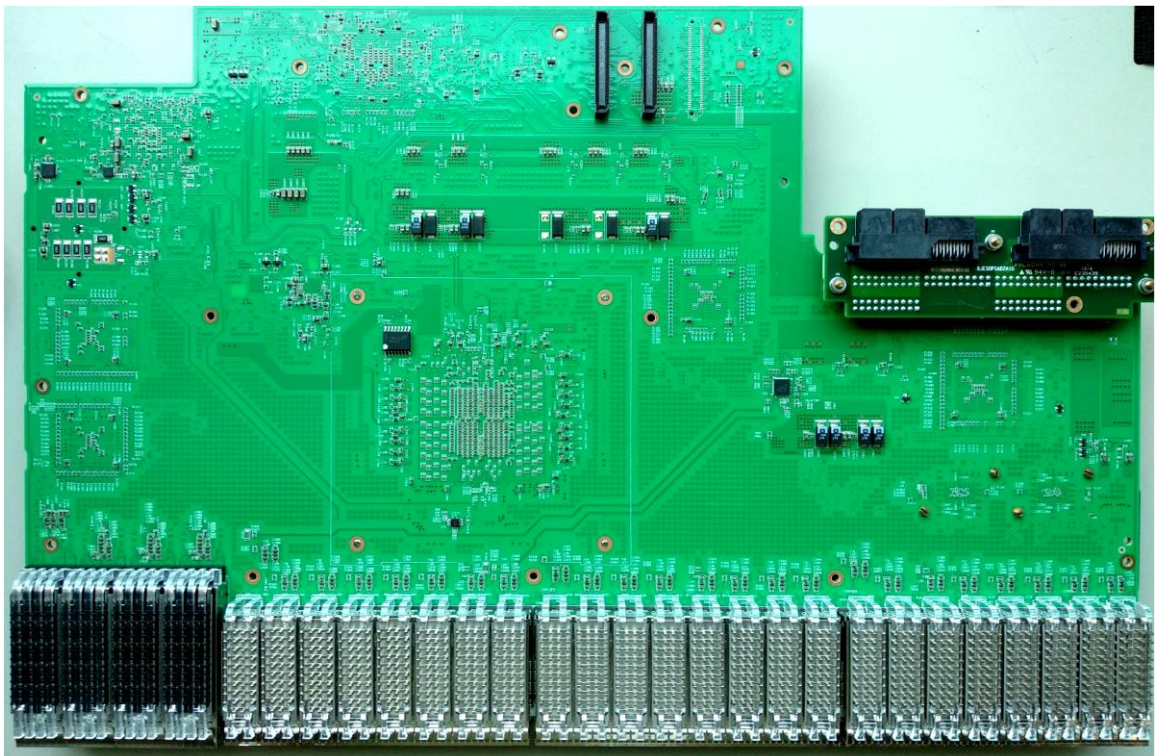
Figure 7 Locating and removing main board

e. Heat sink support plate on bottom side of main board. Unfasten the MAC heat sink screws (4x) to remove heat sink support plate.

Note: Heatsink need not be detached for removing support plate.

Figure 8 Locating main board heatsink support plate

Figure 9 Main board heatsink support plate removed

vii. Non-volatile memory on main board.
QFX5120-48Y mainboard non-volatile devices shall not store any user or configuration data. The location indication are for reference.

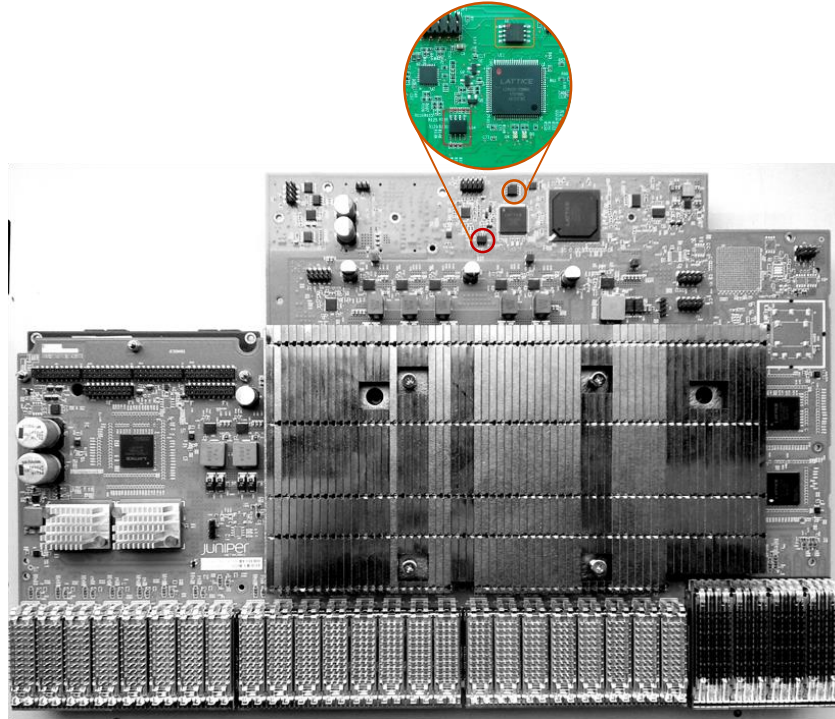a. Locate SPI Flash device for PowerCPLD and FPGA on main board

Figure 10 Main board SPI device for CPLD and FPGA

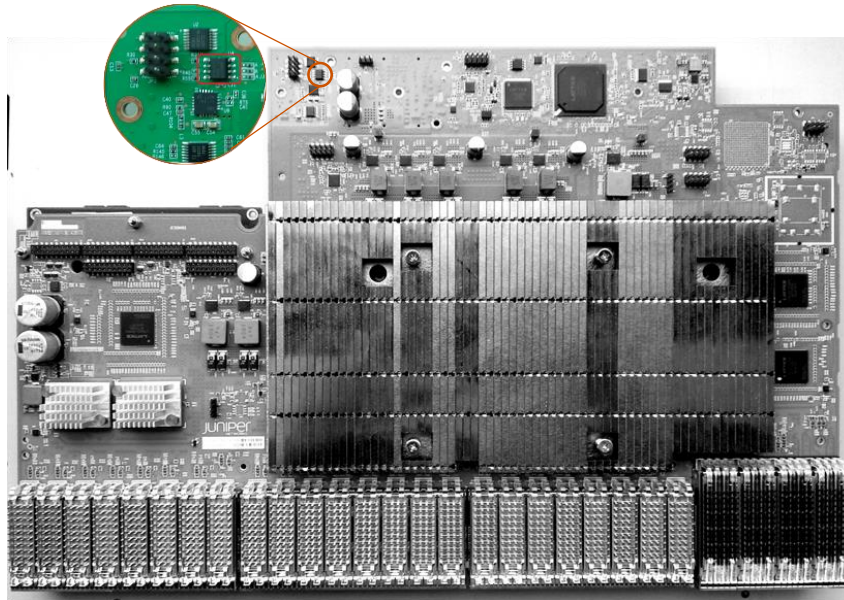b. Locate IDEEPROM device and it does not store user information.

Figure 11 Main board IDEEPROM

c. MAC QSPI flash located in bottom side of Main board. Heatsink support plate needs to be removed for accessing the component.
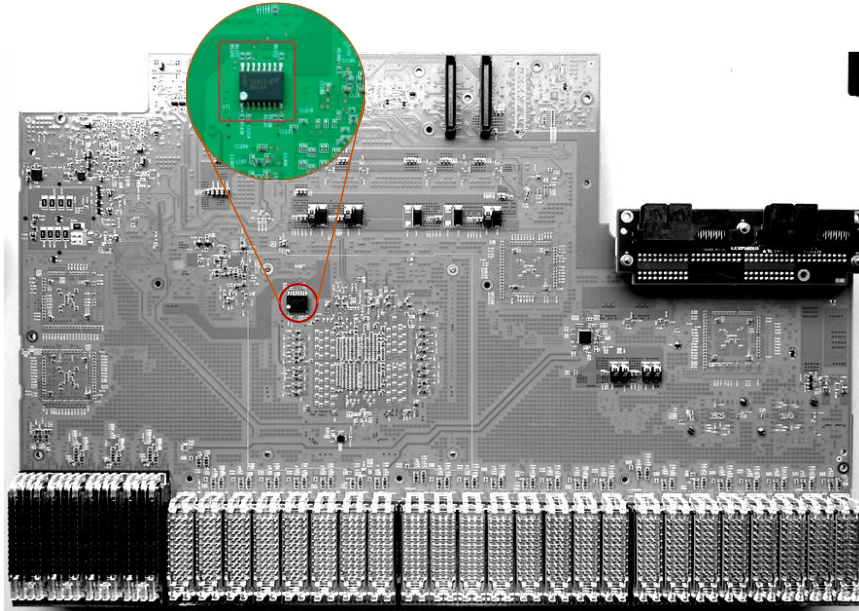

Figure 12 Main board QSPI device

viii. CPU Board Volatile and Non-Volatile components.
   A. Volatile device:
      a. DDR Modules
      b. Real time clock module – Battery

   B. Non-volatile device:
      a. SATA SSD – store user and system configurations
      b. BIOS Flash
      c. Management port EEPROM
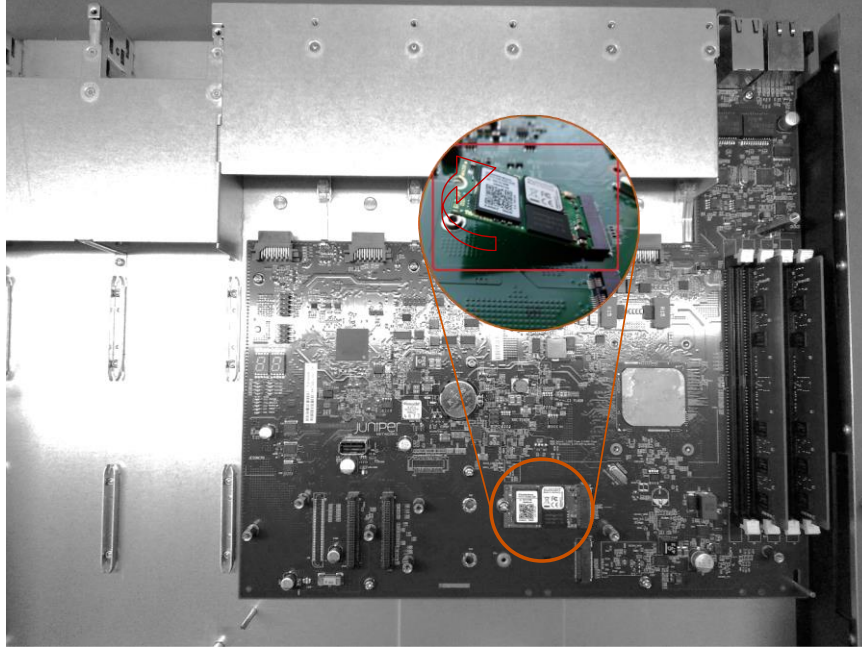   d. CPLD SPI Flash and CPU board IDEEPROM.

Figure 13 CPU Board volatile and non-volatile memory devices

Non-Volatile memory on CPU Board:

a. Locate M.2 SATA SSD device that store the user and config data.
Mainboard should be removed from system to access SATA SSD device.

Note: Remove the screw and unplug the SATA Flash Modules from its socket.

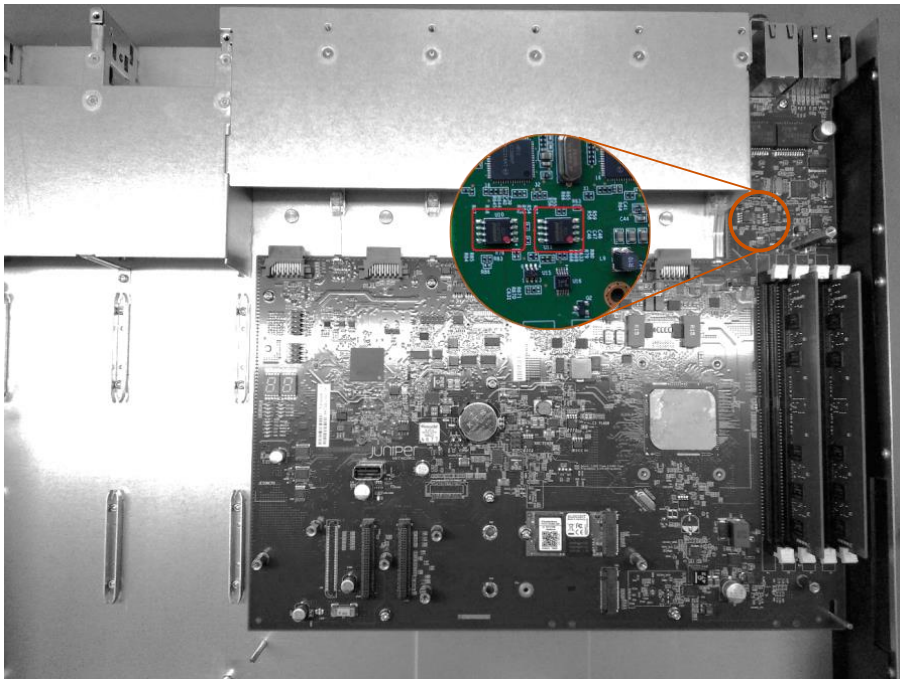*Figure 14 M.2 SATA SSD device on CPU Board.*

b. BIOS devices are located under CPU heatsink.
CPU heatsink needs to be removed for accessing BIOS devices on CPU board.

Unfasten the CPU heat sink screws then gently remove the CPU heatsink from the CPU board.
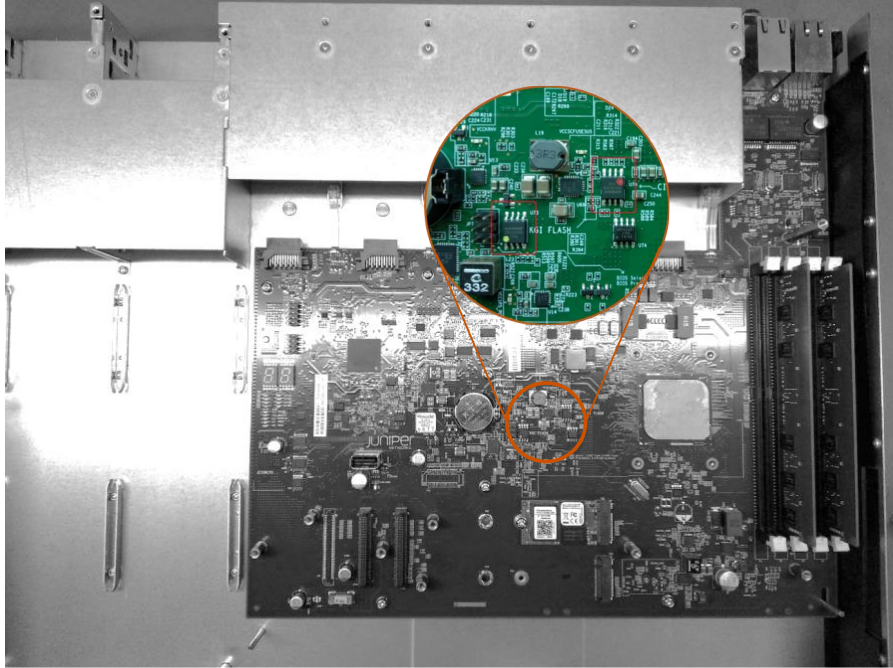
Figure 15 BIOS devices on CPU Board.

c. Locate Management port EEPROM device on CPU board.

Figure 16 Management EEPROM on CPU Board.

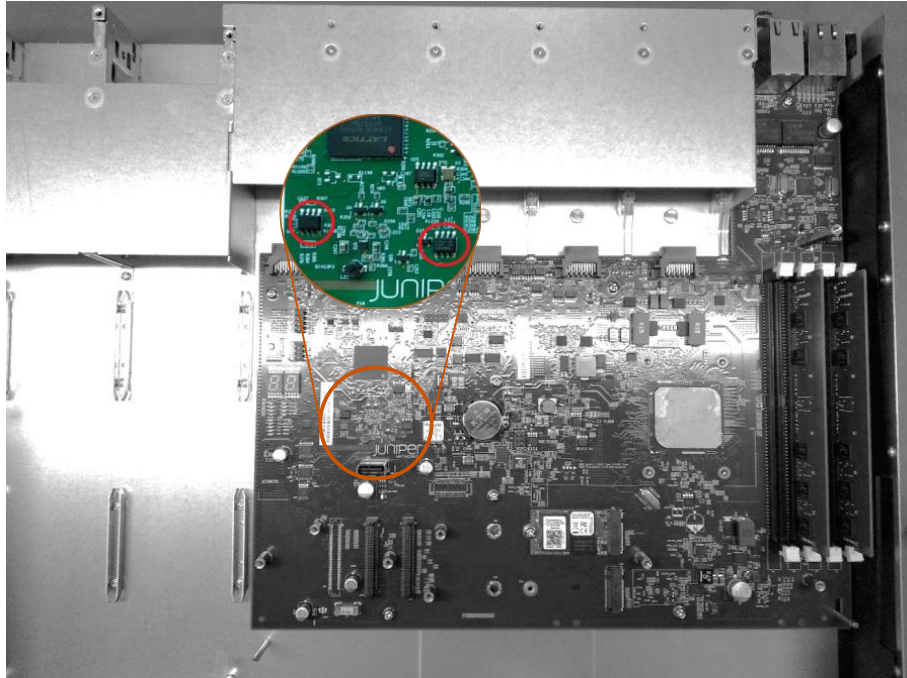d. Locate CPLD SPI Flash and CPU board IDEEPROM. These devices shall not store any user configuration data.

Figure 17 CPU board IDEEPROM and CPLD SPI Flash

3.3   Remove Non-volatile components from the System Board

a. Remove the screw and unplug the M.2 SATA SSD module from its socket. *(Figure 14)*

Note: *Before removal, ensure J-TAC and the appropriate account team has been notified of your intentions.*

3.4   Follow the assembly procedure in reverse order to assemble the QFX5120-48Y Chassis.