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What is the procedure to RMA a Myricom hardware component from a secure environment?

Model:

All models

Software:

General Software

Operating System:

N/A

Information:

Statement of Volatility for Myricom hardware

The following text describes the procedure for removing chips (non-volatile memory devices0 from Myricom hardware in a secure environment, as well as identifying the non-volatile components on the requested hardware.

RMA Procedure and Removal of Non-Volatile Components from Hardware

The contents of any volatile memory on these products will be lost within a few seconds after removing power. The most practical way of dealing with RMAs (i.e., equipment returns) from classified sites is to carefully remove the non-volatile memory devise. Myricom will replace the components during the repair process.

Please take care when removing the non-volatile memory devices. We recommend that the EEPROMs be removed by hand carefully with a desolder iron or with a flo-master. For small EEPROMs with leads on only two sides, a desolder iron like the Thermotweez can heat the solder on both sides of the part simultaneously and is the preferred way to remove small parts. The EEPROM should not be removed by cutting the leads on the chip as this can lead to irreparable damage to the printed-circuit board (PCB).

Once this procedure has been completed, contact CSPI Technical Support (support@cspi.com) to have the RMA issued. Please tell us when an RMA'ed hardware component has had its non-volatile memory devices removed.

The repair cost will depend upon how much additional damage was done to the board when the chips were removed. As soon as the RMA'ed board is received and tested at Myricom, you will receive the repair estimate for your approval before the repair is made.

Identifying the Non-Volatile Components on the Myricom Hardware

Myri-10G Network Adapters

10G-PCIE2-8C2-2S-SYNC

Myri-10G "two ports for performance and failover" ("-8CS-2S") Network Adapters have three non-volatile memory components. These adapters have two EEPROMS for Lanai firmware (U27A and U28B), one for each Lanai, and another serial EEPROM for the PLX PCIe switch (U26). Any of these EEPROMS can be written by someone with root privileges.

10G-PCIE2-8C2-2S-SYNC

Myri-10G "two ports for performance and failover" SYNC ("-8C2-2S-SYNC") Network Adapters have four non-volatile memory components. These adapters have two EEPROMS for Lanai firmware (U27A and U27B), one for each Lanai, another serial EEPROM for the PLX PCIe switch (U26), and a microcontroller (U30). Total non-volatile memory on the 10G-PCIE2-8C2-2S-SYNC is 4 megabytes. Any of these EEPROMs can be written by someone with root privileges.

10G-PCIE2-8B2-2S, **10G-PCIE2-8B2-2C, 10G-PCIE2-8B2-2QP**

Myri-10G “two ports for performance and failover” (“-B2-“) Network Adapters have three non-volatile memory components. These adapters have two EEPROMs for Lanai firmware (U27A and U28B), one for each Lanai, and another serial EEPROM for the IDT PCIe switch (U26). Any of these EEPROMs can be written by someone with root privileges.

10G-PCIE-8B-S, 10G-PCIE-8B-2S, 10G-PCIE-8B-C, 10G-PCIE-8B-2C, 10G-PCIE-8B-QP, 10G-PCIE-8B-2I

On all Myri-10G "one port" ("-8B-") Network Adapters, there is one non-volatile memory component. The serial firmware EEPROM is U27.

10G-PCIE-8B2-4I

On Myri-10G 10G-PCIE-8B2-4I Network Adapters, there are four non-volatile memory components. U27A, U27B, U26A, U26B.

10G-PCIE-8A-R

On all Myri-10G "one port" ("-8A-") Network Adapters, there is one non-volatile memory component. The parallel EEPROM for firmware is U28.

Summary of part designators for Myri-10G Network Adapters:

U27/27A/27B: serial EEPROM for firmware on all -8B- network adapters
U26: serial EEPROM for PLX chip or IDT chip
U28: parallel EEPROM for firmware on all -8A- network adapters

The EEPROM chip on a Myri-10G "8A" Network Adapter is a 512KB chip, and the EEPROM chip on the Myri-10G "8B" and "8C" Network Adapters is a 1MB chip. It is used to hold ID information and initialization code. This EEPROM can be written by the Lanai firmware, so we cannot preclude the possibility that someone with sysadmin privileges could store information in the EEPROM. In order to take the adapter out of a secure area, e.g., for an RMA, one may remove the EEPROM component. Depending on the level of security, it may alternatively be permitted to run a program that verifies that there is no unexpected information in the EEPROM, or run a program that erases the EEPROM.

MYRI-10G Switch Components

The situation with Myri-10G switches is more complicated. The small microcontroller on each of up to 20 switch line cards (e.g., 10G-SW32LC-16QP, 10G-SW32LC-16ES), on each of the two fan-monitoring boards, and on the power-supply board, has non-volatile memory. The MONITOR line card (10G-MONITOR-B) has two non-volatile memory chips in addition to the small microcontroller with its non-volatile memory. We understand that each power supply (10G-POWER) may have some non-volatile memory, but we're not sure whether/how it would be accessed.

MYRINET-2000 Network Adapters

M3F2-PCIXE-2, M3F-PCIXF-2, M3F-PCIXD-2

The M3F2-PCIXE-2, and M3F-PCIXD-2 Network Adapters have an AM29LV040B-70JC EEPROM , at location U28. (This is an AMD part.) It is the only non-volatile memory on the board.

M3M-PMC64C-2, M3S-PCI64C-2, M3M-PCI64C-2 and M3F-PCI64C-2M

The M3M-PMC64C-2, M3S-PCI64C-2, M3M-PCI64C-2 and M3F-PCI64C-2M Network Adapters have two nonvolatile components - the microcontroller (U105) and the EEPROM (U28).

MYRINET-2000 M3-M MONITORING LINECARDS

On the M3-M monitoring line card, the only non-volatile memory is in the microcontroller, U11, and the two EEPROM chips, U82 and U83.

MYRINET-2000 SWITCH ENCLOSURES

On the Myrinet-2000 switch enclosures there is a microcontroller with flash memory on the fan-controller board, and there is a microcontroller with flash associated with each backplane XBar16.

Microcontroller part designators:

On fan monitor board:U2

On M3-E32: 5-slot backplane: U111 and U211
On M3-E64: 9-slot backplane: U111, U211, U311, and U411
On M3-E128: 17-slot backplane: U111, U211, U311, U411, U511, U611, U711, and U811

Revision	Date	Change
1	7/18/16	Initial Draft