Certificate of Volatility

Manufacturer: Xerox

Equipment Name: WorkCentre 4118

Model: 4118x, 4118p

Configuration: This item is networked with the addition of an optional Network Kit- to print servers with operating systems Windows 98/2000/NT4.0/Me/XP, MAC OS10.3 , Linux

General description: This printer is connected to a network with an addition of an optional Network Kit

Purpose: 4118x- Multi-Functional Device, Print, Copy, Fax, and Scan
                 4118p- Multi- functional Device, Print, Copy

1.   **Type of memory**:

      Volatile memory: What is the amount? What period of time does the unit need to be powered off to completely erase this memory?

      System buffer Volatile memory:
      SDRAM: 10.5 MB (No user image data stored.)

      Codec buffer Volatile memory:
      SDRAM: 2 MB (No user image data stored.)

      buffer etc Volatile memory:
      SDRAM: 1.5 MB (No user image data stored.)

      Print Image buffer Volatile memory:
      SDRAM: 38 MB (User image data stored. Data lost at power off.)

      Scanning buffer + Line buffer Volatile memory:
      SDRAM: 4 MB (User scan data stored. Data lost at power off.)

      Scanner Volatile Memory:
      SRAM: 128 KB (No user image data stored.)

      Non-Volatile Memory:

      Type: What type(s) of non-volatile memory are included, EPROM, EEPROM, Flash memory, NVRAM, and battery backed, etc. (fill in)

      FAX file & Rx data Volatile memory:
      Battery backed SDRAM: 8 MB (User fax image data stored. Data lost 72 hours after power off (when battery fully charged)

      System program code Non-Volatile memory:
      Flash ROM: 16 MB (Boot, codec & system code. No user image data stored.)

Certificate of Volatility

Machine configuration setup data Non-Volatile memory:
EEPROM: 4 KB (System set up data. user configuration data stored.)

Network Controller Non-Volatile memory:
EEPROM: 4 KB (No user image data stored.)

2.   **Accessibility:** Is it accessible by accidental/intentional keystroke, or software malfunction?
No. However, the login system administrator or service technician (via diagnostic operation) may adjust certain machine operational parameters. User data is never accessible.

3.   If "YES, it **is** accessible, describe location and purpose.

Purpose: typical uses for non-volatile memory location are system identification number and system configuration, boot, and initialization parameters, for example (battery-backed NVRAM on SUNs); put in for future design needs, internal depot repair, clock circuit, "nice" to have, or to flag unauthorized software, etc.

If "NO", it is not accessible, ____**X**___   (Check here).

4.   *Required memory:* Is device needed for normal operation, i.e. required for this processing period?
All memory listed is required for normal operation except Network Controller Non-Volatile memory. Network Controller Non-Volatile memory is only for optional processing.

5.   *Removal consequences:* If device memory chip is erased, what impact will this have on operation and normal function of device?
Flash ROM: The system will not boot.
SDRAM: The system will not boot.
EEPROM (Main): The system Initializing will not finish.
SRAM: The system Initializing will not finish.
EEPROM (Network): The network card will not run.

6.   *Method of access:* How is it accessed? Is non-volatile memory location theoretically accessible with any system code, not just via the operating system or low level booting firmware?
Machine configuration setup data Non-Volatile memory is used for storing system data and is accessible by application level code. There is no user access to the memory devices, except as provided programmatically to control device behaviors.

Remember: Modifying internal programming to access is not the same thing as unknowingly accessing from an accidental keyboard stroke.

7.   *Warranty:* Does chip removal or EEPROM erasure void the warranty?
Yes, memory removal or erasure will void the warranty.

8.   *Size:* How much memory is contained? Number of bytes, etc.
See section 1, "Type of Memory"

9.   *Spacing:* Is the memory fully utilized or does it have available memory space for additional information to be placed?

Certificate of Volatility

The non-volatile memory devices are sized to contain the necessary amount of data required for system operation. Usually there are some unused memory addresses where additional information could be theoretically stored. Without access to the software developers' memory maps, determining the location of this unused memory would require reverse engineering the software.

10.   Can this non-volatile memory be addressed to ensure that only authorized information is resident? If yes, how?
At boot-up, the system computes a checksum for each non-volatile memory device. (Note: The computed checksum is compared against a value stored in the device itself. This is sufficient to detect hardware failures, but not necessarily intentional corruption.)

Evaluation and summary of this equipment was completed by the following:

_____ Signature

___ Michael Piccirilli_____ (Printed name)

_Aquired Products Program Manager_____ (Title)

 WC4118 Program Manager_____ ___ (Job function)