

Certificate of Volatility



Manufacturer: **Xerox**

Equipment Name: **DocuColor 3535**

Model: **Digital Copier**

Purpose: **Copy Memory Disclosure**

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?

User Interface Volatile memory:
DRAM: 128/256MB (No user image data stored)

Marking Engine & Scanner, Video Volatile memory:
SRAM: 256 KB (No user image data stored)
There are also a number of RAM buffers in the video path that are used for image manipulation (Reduce/Enlarge, etc.), and all have no data retention capability. When power is removed all data is lost. These buffers are typically built into the ASICs. Typical bleed down time for all volatile memory is 10 seconds

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

User Interface Non-Volatile memory:
Flash ROM: 8 MB (UI executable code. No user image data stored.)

Marking Engine Non-Volatile memory:
Flash ROM 21 MB (Contains Marking Engine executable code, serial number, billing meters and IOT NVM data. No user image data stored.)

Scanner Volatile Non-Volatile Memory:
DADF ROM: 1 MB (Contains Scanner executable code. No user image data stored.)

Copy Controller Non-Volatile Memory:
Flash ROM 16 MB (Copy Controller Control code. No user image data stored)
NVRAM 256 KB (Contains Xerographic set points. No user image data stored)

Hard Disk Drive: 40 GB (User image data stored. Pointers held in EPC DRAM. User data is overwritten if optional image overwrite option present and enabled.)

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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.

5. *Removal consequences:* If device memory chip is erased, what impact will this have on operation and normal function of device?

ROM memory device content is required and essential for operation and normal function of the device. Loss would render the device inoperable.

ROM memory, as stated above, never contains user data. This memory is never overwritten or erased during normal operation.

EPC DRAM memory processes user data. Content of this memory is lost at power off.

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?

Marking Engine non-volatile memory is used for storing Multifunction Device application settings and is accessible by application level code. There is no user access to the memory devices, except as provided programmatically to control device behaviors.

7. *Warranty:* Does chip removal or EEPROM erasure void the warranty?
Yes, memory removal or erasure will void the warranty. Disk removal of the internal disk drive 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?
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.

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The Copy Controller hard disk drive contains spooling partitions designated for customer document data. Space is dynamically allocated to each job handled; at job completion this space is de-allocated to be available for new document images.

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

Kevin Merritt Signature

Kevin Merritt (Printed name)

Technical Program Manager (Title)

XOG Product Program Manager (Job function)

Larry Kovnat Signature

Larry Kovnat (Printed name)

XOG Security Manager (Title)

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