



Statement of Volatility

Manufacturer: Xerox Corporation

Model: This statement applies to the FreeFlow® Makeready platform, FreeFlow DigiPath 2000 Scanner (Firestar 1.1.2) and FreeFlow Scanner 665 (Firestar 1.6)

General Description: The FreeFlow Makeready platform serves as a document composition solution providing prepress tools such as scanning, imposition, tab programming, late-stage editing, color management, and integration with Adobe Photoshop® CS, to allow maximum overall print quality and efficiencies in prepress.

The FreeFlow 665 (Firestar 1.6) Scanner is attached to the FreeFlow Makeready hardware platform through an industry standard SCSI interface. All control and data flows through this interface. The FreeFlow Makeready software uses an industry standard TWAIN interface to communicate with the scanner. Inside the FreeFlow 665 Scanner (Firestar 1.6), a Xerox designed Largo PWB includes a SCSI interface for communication and control with the FreeFlow Makeready platform.

The DigiPath 2000 Scanner (Firestar 1.1.2) is attached to the FreeFlow Makeready hardware platform through an industry standard SCSI interface. All control and data flows through this interface. The FreeFlow Makeready software uses an industry standard TWAIN interface to communicate with the scanner. Inside the DigiPath 2000 Scanner, a Xerox designed Orlando PWB includes a SCSI interface for communication and control with the FreeFlow Makeready platform.

Configuration: FreeFlow Makeready hardware platform consists of:

Platform	Processor	Hard Disk 1		Hard Disk 2		Physical Memory
		Size	Partitions	Size	Partitions	
Dell Precision 650/ Client	2.8 GHz	120 GB	18GB / 102 GB	120 GB	120 GB	1.0 GB
Dell 370/ Client	2.8 GHz	160 GB	18GB / 142 GB	160 GB	160 GB	1.0 GB
Dell 380/ Client	2.8 GHz	160 GB	18GB / 142 GB	160 GB	160 GB	1.0 GB
Dell 390/ Client	3.2 GHz	250 GB	18GB / 232 GB	250 GB	250 GB	2.0 GB

Note: Optional peripheral hardware is not covered in this document. (for example, tape drives, MODs, etc.)

Note: Information pertaining to customer supplied PCs is not covered in this document.

Configuration: FreeFlow Scanner 665 main controller PWB (Largo) uses the following types of memory devices:

Memory Type	Function	Size	Functional Description
FLASH	FPGA Config	8 Mbyte	Storage of FPGA data. Upon power up, the code is transferred from the FLASH to each appropriate FPGA
FLASH	8250 Code	16 Mbyte	Scanner machine control SW
Static RAM	8250 Local SDRAM	16 Mbyte	Scratch pad processor
Dynamic RAM	Page buffer	1G	Storage for 2 pass image processing
Dynamic RAM	Page que	1G	Holds images for transfer across the SCSI bus
ZBT Sync RAM	DeICE/EBHR Context Memory	256Kx36	Temporary storage for electronic black hole removal processing
SDRAM	Page Skew Rotation Memory	256Kx36	Temporary storage for deskew page processing
SDRAM	Tag Rotation Memory	256Kx36	Temporary storage for tag rotation processing
SRAM	Compression Memory	256Kx16	Temporary storage for black/white binary image data for CCITT G4 compression
NVM	NVM	32Kx8	Storage of scan and feed counts, registration values and other set points

Configuration: FreeFlow DigiPath 2000 Scanner main controller PWB (Orlando) uses the following types of memory devices:

Memory Type	Function	Size	Functional Description
SRAM	Image Processing	256K SRAM	Temporary storage for JPEG Color Image Compression
SRAM	Image Processing	256K SRAM	Temporary storage for G4 B&W Image Compression
FIFO	Video FIFOs SYNC Line FIFO	5KX18 512X9 1KX9 2KX9 4KX9 8KX9 4KX18	SCVM Calibration Pixel Offset and Gain Calibration RGB Pixel Reordering Pixel Line buffers
SDRAM	Page buffer	256 Mbyte	video RAM
FLASH	Control SW	4Mx16	for MPC860 MPU controller control SW
SDRAM		4Mx32	for MPC860 MPU controller
NVRAM		128Kx8	for MPC860 MPU controller
SRAM	video calibration	128Kx8	Pixel offset & gain control
PROM	Control SW	4MX16	machine control
EEPROM	Battery-backed RAM	32Kx8	Storage of scan and feed counts, registration values

Volatile memory:

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

The volatile memories used in all the configurations above are standard industry-supplied RAM. Leaving the power off for several seconds is sufficient to completely erase the memory.

Non-Volatile Memory:

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

FreeFlow Makready – Non Volatile Memory:

Hard Disk (size listed above): Used to store Microsoft OS software, user data, printer information, etc. If the persistence of data on the hard drive(s) is an issue then a removable drive kit may be available for this product.

NVRAM (4MB/512 KB): Non-volatile RAM on the motherboard stores BIOS boot-up and configuration information. There is no access to individual locations to read or write, other than the internal software itself.

Optical drive: Writable/rewritable DVD and CD drive. No data is stored unless system operator explicitly writes files to the optical RW media.

FreeFlow Scanner 665 – Non Volatile Memory:

NVRAM (2Kx8): Used to store scan and feed counts, registration values and other set points. There is no access to individual locations to read or write, other than the internal software itself.

Boot ROM (16 Mbytes): This read-only Flash memory on the scanner control board contains the code necessary to boot the system. A power-on self-test is performed and the bootstrap OS is loaded. The area never contains user data.

The DigiPath 2000 Scanner – Non Volatile Memory:

EEPROM (32Kx8): Used to store scan and feed counts, registration values and other set points. There is no access to individual locations to read or write, other than the internal software itself.

NVRAM (128Kx8): Used for MPC860 MPU controller.

Boot ROM (16 Mbytes): This read-only Flash memory on the scanner control board contains the code necessary to boot the system. A power-on self-test is performed and the bootstrap OS is loaded. The area never contains user data.

2. Accessibility: Is it accessible by accidental/intentional keystroke, or software malfunction?

No, memory is accessed in maintenance mode only and is not accessible through accidental keystroke.

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 SUN Microsystems devices); 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? Example: If the SUN is turned on without this means of checking for the authorized configuration, the system will not boot and therefore the data cannot be processed per the standard Practice Procedure (SPP).

Makeready platform: System Hard Disk Drive removal will result in the system being unable boot or operate.

Scanners: NVM and bootstrap in FLASH memory content is required and essential for operation and normal function of the device. Loss would render the device inoperable.

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?

There is no user access to the memory devices, except as provided programmatically to control device behavior.