Certificates of Volatility

Hewlett-Packard Certificate of Volatility		
Model: **HP Color LaserJet Enterprise M65x series**	**Part Number:** **Enterprise** J7Z98A=M652N J7Z99A=M652DN J8A04A=M653DN J8A05A=M653X J8A06A=M653DH	Address: HP Inc. 11311 Chinden Blvd. Boise, Idaho 83714, USA

Volatile Memory				
Does the device contain volatile memory (Memory whose contents are lost when power is removed)? ☒ Yes ☐ No If Yes please describe the type, size, function, and steps to clear the memory below				
Type (SRAM, DRAM, etc): DDR3 - DRAM	Size: 1GB	User Modifiable: ☐ Yes ☒ No	Function: Operation system and print/scan buffer	Steps to clear memory: When the printer is powered off the memory is erased.
Type (SRAM, DRAM, etc):	Size:	User Modifiable: ☐ Yes ☐ No	Function:	Steps to clear memory: .
Type (SRAM, DRAM, etc):	Size:	User Modifiable: ☐ Yes ☐ No	Function:	Steps to clear memory:

Non-Volatile Memory				
Does the device contain non-volatile memory (Memory whose contents are retained when power is removed)? ☒ Yes ☐ No If Yes please describe the type, size, function, and steps to clear the memory below				
Type (Flash, EEPROM, etc): IOD EEPROM	Size: 32KB	User Modifiable: ☐ Yes ☒ No	Function: Store customer setting data for backup/restore	Steps to clear memory: There are no steps to clear this data.
Type (Flash, EEPROM, etc): SPI Flash	Size: 4MB	User Modifiable: ☒ Yes ☐ No	Function: Contains the boot code and factory product configuration data required for the device to function. User modifications are limited to downloading digitally signed HP firmware images.	Steps to clear memory: There are no steps to clear this data
Type (Flash, EEPROM, etc):	Size:	User Modifiable: ☐ Yes ☐ No	Function:	Steps to clear memory:

Mass Storage				
Does the device contain mass storage memory (Hard Disk Drive, Tape Backup)? ☒ Yes ☐ No If Yes please describe the type, size, function, and steps to clear the memory below				
Type (HDD, Tape, etc): HDD	Size: 320GB	User Modifiable: ☒ Yes ☐ No	Function: OS and user data	Steps to clear memory: Firmware update
Type (HDD, Tape, etc): EMMC	Size: 8GB	User Modifiable: ☒ Yes ☐ No	Function: OS and user data	Steps to clear memory: Firmware update

USB
Does the item accept USB input and if so, for what purpose (i.e Print Jobs, device firmware updates, scan upload)? ☒ Yes ☐ No If Yes please describe below
Print jobs, HP digitally signed firmware upgrades, 3rd party application loading. USB ports can be disabled.
Can any data other than scan upload be sent to the USB device)? ☒ Yes ☐ No If Yes please describe below
Diagnostic service logs can be uploaded. Print files can be printed via a USB thumb drive.

RF/RFID	
Does the item use RF or RFID for receive or transmit of any data including remote diagnostics. (e.g. Cellular phone, Bluetooth) ☐ Yes ☒ No If Yes please describe below	
Purpose:	
Frequency:	Bandwidth:
Modulation:	Effective Radiate Power (ERP):
Specifications:	

Other Transmission Capabilities	
Does the device employ any other methods of non-wired access to transmit or receive any data whatsoever (e.g. anything other than standard hard wired TCP/IP, direct USB, or parallel connections)? ☒ Yes ☐ No If Yes please describe below:	
Purpose: WiFi Direct Print	
Frequency: 2.4 GHz	Bandwidth: 2401 - 2495 MHz; depending on selected channel in 2.4GHz band. 5180 - 5825 MHz; depending on selected channel in 5GHz band.
Modulation:	Effective Radiate Power (ERP):
Specifications: 802.11 b/g/n	

Other Transmission Capabilities	
Does the device employ any other methods of non-wired access to transmit or receive any data whatsoever (e.g. anything other than standard hard wired TCP/IP, direct USB, or parallel connections)? ☒ Yes ☐ No If Yes please describe below:	
Purpose: Device Beaconing, Secure Print Apps	
Frequency: 2.4 GHz	Bandwidth: 2400-2483.5 MHz; depending on selected channel.
Modulation:	Effective Radiate Power (ERP):
Specifications: BTLE4.0 compliant	

Other Capabilities
Does the device employ any other method of communications such as a Modem to transmit or receive any data whatsoever? ☐ Yes ☒ No If Yes please describe below:
Purpose:
Specifications:

Hewlett-Packard Certificate of Volatility

Model: **HP Color LaserJet Enterprise M68x series**	Part Number: **Enterprise** J8A17A=M682Z J8A11A=M681F J8A13A=M681Z J8A17A=M682Z	Address: HP Inc. 11311 Chinden Blvd. Boise, Idaho 83714, USA

Volatile Memory

Does the device contain volatile memory (Memory whose contents are lost when power is removed)?
☒ Yes ☐ No If Yes please describe the type, size, function, and steps to clear the memory below

Type (SRAM, DRAM, etc):	Size:	User Modifiable:	Function:	Steps to clear memory:
DDR3 - DRAM	2GB- Ent 2.5GB - Flow	☐ Yes ☒ No	Function: Operation system and print/scan buffer	When the printer is powered off the memory is erased.
Type (SRAM, DRAM, etc):	Size:	User Modifiable: ☐ Yes ☐ No	Function:	Steps to clear memory: .
Type (SRAM, DRAM, etc):	Size:	User Modifiable: ☐ Yes ☐ No	Function:	Steps to clear memory:

Non-Volatile Memory

Does the device contain non-volatile memory (Memory whose contents are retained when power is removed)?
☒ Yes ☐ No If Yes please describe the type, size, function, and steps to clear the memory below

Type (Flash, EEPROM, etc):	Size:	User Modifiable:	Function:	Steps to clear memory:
IOD EEPROM	32KB	☐ Yes ☒ No	Store customer setting data for backup/restore	There are no steps to clear this data.
SPI Flash	4MB	☒ Yes ☐No	Contains the boot code and factory product configuration data required for the device to function. User modifications are limited to downloading digitally signed HP firmware images.	There are no steps to clear this data
Type (Flash, EEPROM, etc):	Size:	User Modifiable: ☐ Yes ☐ No	Function:	Steps to clear memory:

Mass Storage

Does the device contain mass storage memory (Hard Disk Drive, Tape Backup)?
☒ Yes ☐ No If Yes please describe the type, size, function, and steps to clear the memory below

Type (HDD, Tape, etc):	Size:	User Modifiable:	Function:	Steps to clear memory:
HDD	320GB	☒ Yes ☐ No	OS and user data	Firmware update

USB

Does the item accept USB input and if so, for what purpose (i.e Print Jobs, device firmware updates, scan upload)?
☒ Yes ☐ No If Yes please describe below
Print jobs, HP digitally signed firmware upgrades, 3rd party application loading. USB ports can be disabled.
Can any data other than scan upload be sent to the USB device)?
☒ Yes ☐ No If Yes please describe below
Diagnostic service logs can be uploaded. Print files can be printed via a USB thumb drive.

RF/RFID
Does the item use RF or RFID for receive or transmit of any data including remote diagnostics. (e.g. Cellular phone, Bluetooth) ☐ Yes ☒ No If Yes please describe below
Purpose:

Frequency:	Bandwidth:
Modulation:	Effective Radiate Power (ERP):
Specifications:	

Other Transmission Capabilities
Does the device employ any other methods of non-wired access to transmit or receive any data whatsoever (e.g. anything other than standard hard wired TCP/IP, direct USB, or parallel connections)? ☒ Yes ☐ No If Yes please describe below:
Purpose: WiFi Direct Print

Frequency: 2.4 GHz, 5GHz	Bandwidth: 2401 - 2495 MHz; depending on selected channel in 2.4GHz band. 5180 - 5825 MHz; depending on selected channel in 5GHz band.
Modulation:	Effective Radiate Power (ERP):
Specifications: 802.11 b/g/n	

Other Transmission Capabilities
Does the device employ any other methods of non-wired access to transmit or receive any data whatsoever (e.g. anything other than standard hard wired TCP/IP, direct USB, or parallel connections)? ☒ Yes ☐ No If Yes please describe below:
Purpose: Device Beaconing, Secure Print Apps

Frequency: 2.4 GHz	Bandwidth: 2400-2483.5 MHz; depending on selected channel.
Modulation:	Effective Radiate Power (ERP):
Specifications: BTLE4.0 compliant	

Other Capabilities
Does the device employ any other method of communications such as a Modem to transmit or receive any data whatsoever? ☐ Yes ☒ No If Yes please describe below:
Purpose:
Specifications:

Hewlett-Packard Certificate of Volatility

Model: HP Color LaserJet Managed E65150dn HP Color LaserJet Managed E65160dn	Part Number: 3GY03A = E65150dn 3GY04A = E65160dn	Address: HP Inc. 11311 Chinden Blvd. Boise, Idaho 83714, USA

Volatile Memory

Does the device contain volatile memory (Memory whose contents are lost when power is removed)?
☒ Yes ☐ No If Yes please describe the type, size, function, and steps to clear the memory below

Type (SRAM, DRAM, etc.): DDR3 - DRAM	Size: 1GB	User Modifiable: ☐ Yes ☒ No	Function: Store customer setting data for backup/restore.	Steps to clear memory: When the printer is powered off the memory is erased.

Non-Volatile Memory

Does the device contain non-volatile memory (Memory whose contents are retained when power is removed)?
☒ Yes ☐ No If Yes please describe the type, size, function, and steps to clear the memory below

Type (Flash, EEPROM, etc.):	Size:	User Modifiable:	Function:	Steps to clear memory:
IOD EEPROM	32KB	☐ Yes ☒ No	Backup device for critical system counters and product configuration information.	There are no steps to clear this data.
SPI Flash	4MB	☐ Yes ☒ No	Contains the boot code and factory product configuration data required for the device to function. User modifications are limited to downloading digitally signed HP firmware images.	There are no steps to clear this data
EEPROM (LAN)	1KB	☐ Yes ☒ No	Stores some LAN data/settings	There are no steps to clear this data.
TPM	16Kb (8x 2048 bit keys)	☐ Yes ☒ No	Industry standard secure crypto-processor used for secure access and securing sensitive data.	To clear the customer storage root key, CSRK, disable the TPM in the pre-boot menu.
SPI Flash (2 devices)	4MB per device	☐ Yes ☒ No	Contains Encrypted Sensor Data.	Data is encrypted, so there are no steps to clear this data.

Mass Storage

Does the device contain mass storage memory (Hard Disk Drive, Tape Backup)?
☒ Yes ☐ No If Yes please describe the type, size, function, and steps to clear the memory below

Type (HDD, Tape, etc.): EMMC	Size: 8GB	User Modifiable: ☒ Yes ☐ No	Function: Stores customer data, OS, applications digitally signed firmware images, persistent data, and temporary data used for processing and system functions	Steps to clear memory: There are several ways to erase this: 1. Secure Storage Erase - Erases temporary files and job data by overwriting information one or three times 2. Secure Disk Erase - Industry standard ATA Secure Erase. Overwrites all data on the hard drive. 3. Secure File Erase - Erases files when jobs finish processing by overwriting them one or three times.

USB

Does the item accept USB input and if so, for what purpose (i.e. Print Jobs, device firmware updates, scan upload)?
☒ Yes ☐ No If Yes please describe below

Print jobs, HP digitally signed firmware upgrades, 3rd party application loading. USB ports can be disabled.

Can any data other than scan upload be sent to the USB device?
☒ Yes ☐ No If Yes please describe below

Diagnostic service logs can be uploaded. Print files can be printed via a USB thumb drive.

RF/RFID

Does the item use RF or RFID for receive or transmit of any data including remote diagnostics? (e.g. Cellular phone, Bluetooth) ☐ Yes ☒ No If Yes please describe below	
Purpose:	
Frequency:	Bandwidth:
Modulation:	Effective Radiate Power (ERP):
Specifications:	

Other Transmission Capabilities

Does the device employ any other methods of non-wired access to transmit or receive any data whatsoever (e.g. anything other than standard hard-wired TCP/IP, direct USB, or parallel connections)? ☐ Yes ☒ No If Yes please describe below:	
Purpose:	
Frequency:	Bandwidth:
Modulation:	Effective Radiate Power (ERP):
Specifications:	

Other Capabilities

Does the device employ any other method of communications such as a Modem to transmit or receive any data whatsoever? ☐ Yes ☒ No If Yes please describe below:
Purpose:
Specifications:

Author Information

Name: Casey Campbell	Title: Hardware Technical Marketing Engineer	Email: casey.campbell1@hp.com	Business Unit: IPG
Signature:			Date Prepared: 03/22/2019

Hewlett-Packard Certificate of Volatility

Model: HP Color LaserJet Managed MFP E67650dh HP Color LaserJet Managed Flow MFP E67660z	Part Number: 3GY31A = E67650dh 3GY32A = E67660z	Address: HP Inc. 11311 Chinden Blvd. Boise, Idaho 83714, USA

Volatile Memory

Does the device contain volatile memory (Memory whose contents are lost when power is removed)?

☒ Yes ☐ No If Yes please describe the type, size, function, and steps to clear the memory below

Type (SRAM, DRAM, etc.): DDR3 - DRAM	Size: 2GB- Non-Flow 2.5GB - Flow	User Modifiable: ☐ Yes ☒ No	Function: Used for temporary storage during the process of jobs, and for applications that are running on the OS. (Note: Total memory on formatter consists of 1.25GB.)	Steps to clear memory: When the printer is powered off the memory is erased.

Non-Volatile Memory

Does the device contain non-volatile memory (Memory whose contents are retained when power is removed)?

☒ Yes ☐ No If Yes please describe the type, size, function, and steps to clear the memory below

Type (Flash, EEPROM, etc.): IOD EEPROM	Size: 32KB	User Modifiable: ☐ Yes ☒ No	Function: Backup device for critical system counters and product configuration information.	Steps to clear memory: There are no steps to clear this data.
Type (Flash, EEPROM, etc.): SPI Flash	Size: 4MB	User Modifiable: ☐ Yes ☒ No	Function: Contains the boot code and factory product configuration data required for the device to function. User modifications are limited to downloading digitally signed HP firmware images.	Steps to clear memory: There are no steps to clear this data
Type (Flash, EEPROM, etc.): EEPROM (LAN)	Size: 1KB	User Modifiable: ☐ Yes ☒ No	Function: Stores some LAN data/settings	Steps to clear memory: There are no steps to clear this data.
Type (Flash, EEPROM, etc.): TPM	Size: 16Kb (8x 2048 bit keys)	User Modifiable: ☐ Yes ☒ No	Function: Industry standard secure crypto-processor used for secure access and securing sensitive data.	Steps to clear memory: To clear the customer storage root key, CSRK, disable the TPM in the pre-boot menu.
Type (Flash, EEPROM, etc.): SPI Flash (2 devices)	Size: 4MB per device	User Modifiable: ☐ Yes ☒ No	Function: Contains Encrypted Sensor Data.	Steps to clear memory: Data is encrypted, so there are no steps to clear this data.

Mass Storage

Does the device contain mass storage memory (Hard Disk Drive, Tape Backup)?

☒ Yes ☐ No If Yes please describe the type, size, function, and steps to clear the memory below

Type (HDD, Tape, etc.): HDD	Size: 500GB	User Modifiable: ☒ Yes ☐ No	Function: Stores customer data, OS, applications digitally signed firmware images, persistent data, and temporary data used for processing and system functions	Steps to clear memory: There are several ways to erase this: 1. Secure Storage Erase - Erases temporary files and job data by overwriting information one or three times 2. Secure Disk Erase - Industry standard ATA Secure Erase. Overwrites all data on the hard drive. 3. Secure File Erase - Erases files when jobs finish processing by overwriting them one or three times.

USB

Does the item accept USB input and if so, for what purpose (i.e. Print Jobs, device firmware updates, scan upload)?

☒ Yes ☐ No If Yes please describe below

Print jobs, HP digitally signed firmware upgrades, 3rd party application loading. USB ports can be disabled.

Can any data other than scan upload be sent to the USB device?
☒ Yes ☐ No If Yes please describe below
Diagnostic service logs can be uploaded. Print files can be printed via a USB thumb drive.

RF/RFID

Does the item use RF or RFID for receive or transmit of any data including remote diagnostics? (e.g. Cellular phone, Bluetooth)
☐ Yes ☒ No If Yes please describe below

Purpose:	
Frequency:	Bandwidth:
Modulation:	Effective Radiate Power (ERP):
Specifications:	

Other Transmission Capabilities

Does the device employ any other methods of non-wired access to transmit or receive any data whatsoever (e.g. anything other than standard hard-wired TCP/IP, direct USB, or parallel connections)? ☐ Yes ☒ No If Yes please describe below:

Purpose:	
Frequency:	Bandwidth:
Modulation:	Effective Radiate Power (ERP):
Specifications:	

Other Capabilities

Does the device employ any other method of communications such as a Modem to transmit or receive any data whatsoever? ☐ Yes ☒ No If Yes please describe below:

Purpose:
Specifications:

Author Information			
Name: Casey Campbell	Title: Hardware Technical Marketing Engineer	Email: casey.campbell1@hp.com	Business Unit: IPG
Signature:			Date Prepared: 03/22/2019