Letter of Volatility

Model Number:	Part Number:	Manufacturer:
HP PageWide MFP 377dw	J9V80	Street Address: HP, Inc. 1115 SE 165th Ave, Suite 210 Vancouver, WA 98683

Volatile Memory

Does the item contain volatile memory (i.e., memory whose contents are lost when power is removed)?
☑ Yes   ☐ No

If the answer is "Yes", please provide the following information for each type (use additional sheets if required)

Type (SRAM, DRAM, etc):	Size	User Modifiable:	Function:	Process to Sanitize:
DDR3 (2 devices)	512MB and 256MB	☐ Yes **☑ No**	Contains decompressed system firmware and print data during printing	Power Off printer
Type (SRAM, DRAM, etc):	Size:	User Modifiable: ☐ Yes ☐ No	Function:	Process to Sanitize:
Type (SRAM, DRAM, etc):	Size:	User Modifiable: ☐ Yes ☐ No	Function:	Process to Sanitize:

Non-Volatile Memory

Does the item contain non-volatile memory (i.e., memory whose contents are retained when power is removed)?   **☑ Yes**   ☐ No

Type (Flash, EEPROM, etc):	Size:	User Modifiable:	Function:	Process to Sanitize:
Flash	512MB	**☑ Yes** ☐ No	System Firmware and firmware upgrade, system control data, user preferences, and variables.	User preferences cleared by performing various resets via "Support" menu. Access from Home menu by pressing "back, back, back, back".
EEPROM (2 separate devices)	64kB and 32kB	**☑ Yes** ☐ No	Contains system control data, user preferences, and variables.	Cleared by performing various resets via "Support" menu. Access from Home menu by pressing "back, back, back, back".
EEPROM	64kB	☐ Yes **☑ No**	Contains backup of critical system control data and critical user preferences.	Cleared by backing up data from a previously reset system.
Secure EEPROM	17kB	☐ Yes **☑ No**	Contains secure internal printer data.	N/A

Media				
Does the item contain media storage capability (i.e., removable or non-removable disk drives, tape drives, memory cards, etc.)? ■ **Yes** ❑ No				
Type (Disk, Tape, etc): Memory Card: USB Drive Removable: ■ **Yes** ❑ No	Size: 32GB Max	User Modifiable: ■ **Yes** ❑ No	Function: Encrypted job storage and PIN printing	Process to Sanitize: Sanitization must be performed using the printer's Embedded Web Server (EWS). Using a web browser on the same network as the printer, browse to the printer's IP address. Select the "Settings" tab at the top, and then from the left navigation bar, select the "Security->Protect Stored Data" menu items. Near the bottom of the page will be the section called "Erase Job Data". Click on the "Erase Now" button. See the Administrator's Guide for more details.

Additional Information:

By default, the printer sends job storage to internal memory, not to the removable media. Using the Embedded Web Server, the printer administrator can configure the printer to store the print jobs on a user inserted USB drive instead, up to a maximum of 32GBytes size. The drive must be provided by the user. Job storage is encrypted using an AES 256 encryption algorithm by default. If the administrator disables the external jobs storage and reverts to internal storage, the drive is automatically sanitized, provided it hasn't been removed before reconfiguration.

USB
Does the item accept USB input and if so, for what purpose (i.e Print Jobs, device firmware updates, scan upload)?   ■ **Yes**   Purpose is for Print Jobs, Device FW updates, and scan uploads   ❑ No   (Can any data other than scan upload be sent to the USB device)?   ■   Yes   ❑ **No**

Additional Information:

This product has both a USB device port and USB host ports. Data on the USB host ports can be accessed from the device port.

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, what is the purpose___WiFi connectivity for printer activity such as print jobs and printer configuration.___

If yes, what is the frequency _2.4GHz ISM band (2400-2500MHz)_; Bandwidth _36Mbps avg., 54Mbps peak_;

Modulation__DSSS(Direct sequence spread spectrum), DBPSK, DQPSK, CCK, OFDM__;

Effective Radiate Power (ERP) _20.5 dbm, max ERP 22.5 dbm_.

Specifications_802.11n___

Additional Information:

This product uses WiFi connectivity for printer activity such as print jobs and printer configuration._

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, what is the purpose: __Near-Field Authentication with printer Networking subsystems___

If yes, what is the frequency__13.56 MHz___; Bandwidth _848 kbit/s max___:

Modulation: _ISO/IEC 14443B_; Effective Radiate Power (ERP): _0 dbm_ (passive writer only).

Specifications __RF Standard ISO/IEC 14443B and NFC Tag Type 4B___

Additional Information:

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, what is the purpose: FAX

Specifications: T.30 FAX protocol standard for FAX communication.

Within T.30, we use V21 protocol as control channel

Within T.30, we use V.17, V.29, and V.34 as data transfer protocols

Speeds = Slow (9.6Kbps), Medium (14.4Kbps), and Fast (33.6Kbps).

Default setting = Medium (14.4Kbps)

Note: Kbps = thousand bits per second

Note: If line transmission is poor, the data protocols may lower speed.

Additional Information:

This product can send and receive FAX transmissions over a standard telephone line.

Vendor Engineer/SME Representative Information

Name:	Title:	Office Phone:	Fax/Email:
David Gembala	Lead EE R&D Engineer	(360) 975-5213	david.gembala@hp.com
Kevin Tang	Lead FW R&D Engineer	(360) 212-8795	ktang@hp.com
Hope Sparks	R&D FW Program Manager	(360) 212-9393	summer.sparks@hp.com

Signature:

Date Completed:

02.11.16

FEBRUARY 11, 2016