LEXMARK PRINTER FIRMWARE AND UPDATES

By Joe Cachia and the Technical Staff at UniNet

In previous editions, we noted that our industry continues to experience "OEM Firmware Updates" and (at times) the disastrous results on replacement chip functionality. Earlier, we covered HP, Samsung, and Okidata firmware; this issue will review Lexmark.

Only a small portion of the firmware actually deals with the communication between printer and chip. The basic function of the chip is to present cartridge (on which the chip is mounted) information to the printer, and if correct, printing is allowed. This includes information such as:

- The correct cartridge info (part #)
- Correct region
- Cartridge new or used
- If used, the page-count and page coverage
- Toner remaining in the cartridge (based on information stored by the printer)

The fact that firmware updates have resulted in failures of replacement chips that previously worked fine has made many concerned, and rightfully so. It is incumbent on aftermarket chip manufacturers to more thoroughly evaluate OEM chip functionality and potential in order to gain insight on the impact of future updates. As OEM chip complexity (higher level encryption, multiple encryption layers and proprietary chip architecture) increases, replacement chip development time and costs rise significantly.

A typical example is the Lexmark MS/MX series. When introduced, the machines did not care about or store the serial number of any chip used on an installed cartridge. Aftermarket chip manufacturers were quick to market with replacement chips and non-unique serialization.

Through a firmware update, machines now query the chip for a serial number, and allow printing ONLY IF the serial number had not been previously seen by that machine. The aftermarket has approached this in a number of ways with no optimum long-term resolution; the market is still awaiting the final "plug-n-play" solution.

Lexmark has released a number of additional firmware updates for the MS/MX series since the end of June 2014. These are listed in the chart at the end of this article. Based on extensive testing by UniNet, we have confirmed that these firmware changes do not affect UniNet's chip functionality.

Note that for many Lexmark machines, the printer does "marry" the chip, so when testing, be sure not to print more than 12 pages to avoid having customer issues.

Constant monitoring of firmware update availability is critical. UniNet routinely reviews OEM sites for updates on key products by machine, by region.

Of these major OEMs, firmware update monitoring is top priority:
- Lexmark - has historic track record of firmware updates impacting chip functionality.
- Dell - usually follows Lexmark, but more regionalization has increased complexity.
- Samsung - increasing use of firmware updates to block replacement chips.
- Xerox - firmware updates may or may not include blocking replacement chips.
- HP - firmware updates rarely impact aftermarket chips, but functionality issues of "Genuine HP" vs. "Non HP" are being addressed via updates as they are encountered.

UniNet will continue monitoring firmware updates and routinely check current product for issues. This is no simple task, but we believe the effort is justified in reducing customer issues.

www.**uninet**imaging.com

This month, the featured OEM firmware listing is for Lexmark. As shown in the list below, Lexmark has released a number of firmware updates since July 24, 2014.

DESCRIPTION	FIRMWARE	REGION	DATE RELEASED
Lexmark C 950, 952, X 954, 952, 950	LHS40.TP.P440	WW	24-Jul-14
Lexmark MS 310, 410, 510, 610	LW41.PRL.P454	US	18-Nov-14
Lexmark MX 310, 410, 510, 511, 610, 611	LW41.SB4.P454	US	13-Nov-14
Lexmark MS 310, 410, 510, 610	LW41.PR2.P454	EU	10-Nov-14
Lexmark MX 410, 510, 511, 610, 611	LW41.PRL.P454	EU	18-Nov-14
Lexmark MX 710, 711, 810, 811, 812	LW41.SB4.P454	US	18-Nov-14
Lexmark MX 710, 711, 810, 811	LW41.SB4.P454	EU	18-Nov-14
Lexmark MS 710, 711, 810, 811	LW41.DN2.P454	US	12-Nov-14
Lexmark MS 810, 811	LW41.DN4.P454	EU	12-Nov-14
Lexmark MS 310, 410, 510, 610	LW41.PR2.P454	AP	10-Nov-14
Lexmark MX 310, 410, 510, 511, 610, 611	LW41.SB4.P454	AP	13-Nov-14
Lexmark MS 710, 711, 810, 811	LW41.DN2.P454	AP	12-Nov-14
Lexmark MX 710, 711, 810, 811, 812	LW41.SB4.P454	AP	18-Nov-14
Lexmark MS 410, 510, 610	LW41.PRL.P454	LA	18-Nov-14
Lexmark MS 410, 510, 610	LW41.PRL.P454	MX	18-Nov-14
Lexmark MS 410, 510, 610	LW41.PRL.P454	SA	18-Nov-14
Lexmark MS 510, 610	LW41.PR2.P454	LA	10-Nov-14
Lexmark MS 510, 610	LW41.PR2.P454	MX	10-Nov-14
Lexmark MS 510, 610	LW41.PR2.P454	SA	10-Nov-14
Lexmark MX 310, 410, 510, 511, 610, 611	LW41.SB4.P454	LA	13-Nov-14
Lexmark MX 310, 410, 510, 511, 610, 611	LW41.SB4.P454	MX	13-Nov-14
Lexmark MX 310, 410, 510, 511, 610, 611	LW41.SB4.P454	SA	13-Nov-14
Lexmark MX 510, 511, 610, 611	LW41.SB4.P454	LA	13-Nov-14
Lexmark MX 510, 511, 610, 611	LW41.SB4.P454	MX	13-Nov-14
Lexmark MX 510, 511, 610, 611	LW41.SB4.P454	SA	13-Nov-14
Lexmark MX 710, 711, 810, 811, 812	LW41.SB4.P454	LA	13-Nov-14
Lexmark MX 710, 711, 810, 811, 812	LW41.SB4.P454	MX	13-Nov-14
Lexmark MX 710, 711, 810, 811, 812	LW41.SB4.P454	SA	13-Nov-14
Lexmark MX 410, 510, 511, 610, 611	LW41.PRL.P454	LA	18-Nov-14
Lexmark MX 410, 510, 511, 610, 611	LW41.PRL.P454	MX	18-Nov-14
Lexmark MX 410, 510, 511, 610, 611	LW41.PRL.P454	SA	18-Nov-14
Lexmark C/X 748, 746	LHS41.CM4.P449	WW	21-Nov-14
Lexmark C 925	LHS40.HV.P440	WW	24-Jul-14

UniNet
www.**uninet**imaging.com