



Report
Counterfeits, Clones &
Genuine Printer Cartridges



Texplained
HARDWARE SECURITY INSIGHT

November 2022

Overview

- This document aims at describing the tests performed on a number of chips contained in aftermarket print cartridges when used on different HP printers
 - HP LaserJet Pro M402dn with CF226A or CF226X cartridges
 - HP LaserJet Enterprise M553dn with a set of 4 cartridges 508A or 508X:
 - CF360A/X
 - CF361A/X
 - CF362A/X
 - CF363A/X
 - HP Laser 107w with W1106 cartridge
- The tests that have been performed and documented concern:
 - The printers setup
 - EWS info
 - Firmware Report data
 - SNMP IOD data
 - Resettable chips testing using Unismart device
 - Depackaging and optical top-metal layer imagery



Test Summary

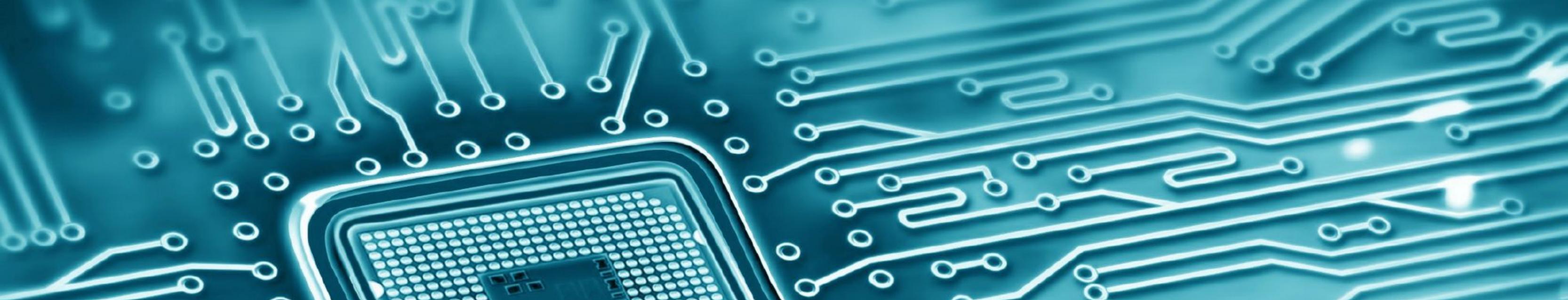
- The various printers have been setup the following way:
 - The printers have been connected to the network
 - The initial display messages for various printers and cartridges have been recorded in videos. Screen-shots will be presented in this report
 - The printers configuration reports have been printed using the printer control panel and/or the Embedded Web Server
 - The various supplies status reports also have been printed
- Resettable chips have been tested using the Unismart device - Screen captures have been taken to show the results as follows:
 - LaserJet Pro M402dn
 - CF226A-N-V2
 - CF226A-V2
 - LaserJet Enterprise M553dn
 - CF360A-N-V2
 - CF360A-V2
- The reprogrammed chips have then been tested with the printers with a focus on:
 - Initial display message
 - Configuration report
 - Supplies status report



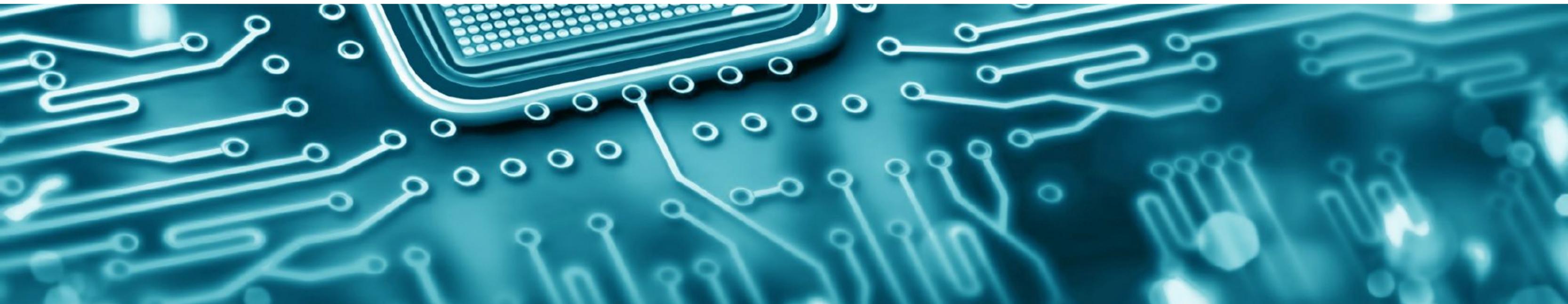
Test Findings Summary

- The chips found on counterfeit cartridges have been programmed so that they behave exactly like original HP chips and are not detected as counterfeit cartridges by HP printers
- The clone chips found on aftermarket cartridges have either been pre-programmed (as it happened in the counterfeit cartridges) or can be easily re-programmed to be identified and behave like original HP chips.
- When clone chips are reprogrammed with "HP" as the manufacturer, customers may be misled into believing they purchased an original cartridges.
- Re-programming clone chips to simulate original chip behavior is easily done with a chip resetting tool and this facilitates counterfeiting.
- Decapsulating the chips found on counterfeit cartridges and other tested clone chips reveals markings which confirm that they have all been produced by the same manufacturer owned by Ninestar Corporation.





TESTING CHIP SAMPLES IN PRINTERS



Setting-up The Printers

- Initial tests were conducted following the given instructions
- Setting up the printers was performed following this process:
 - a) Connect printer to the network
 - b) Using printer's IP address, the printers' Embedded Web Server (EWS) was open in a web browser
 - c) The configuration report has been printed using EWS or from the front panel
- A paper version of the configuration report, including network configuration report, error report and supplies status report for the HP Laser 107w will be given. The files have been printed for each printer cartridge even if the result is a redundant information.
- For other printers, the configuration report has been printed but also screen-captured
 - Configuration and supplies status reports were printed for various cartridges, even if the information is redundant



Setting-up The Printers - HP Laser 107w - Reports

- Configuration and supplies status reports have been printed using the printer's control panel
- The Firmware Report file has also been extracted
- Results are summarized in the array underneath

Cartridges	Origin	Product Number	Serial Number	Brand	IsSetup	Consumable State
GG_W1106AN21-V4	Made by Ninestar	W1106A	CRUM-190704A3CCC	—	false	newGenuineHP
W1106A (initially installed in printer)	Original HP cartridge	W1106A	CRUM_210812A07E0	HP	true	newGenuineHP
W1106A-W1106A12-V3	Found on counterfeit cartridge seized in Egypt	W1106A	CRUM_190609A2E0E	HP	false	newGenuineHP

Results Summary



Setting-up The Printers - HP LaserJet Pro M402dn- Reports

- Configuration and supplies status reports have been printed using the printer's control panel
- The Firmware Report file has also been extracted

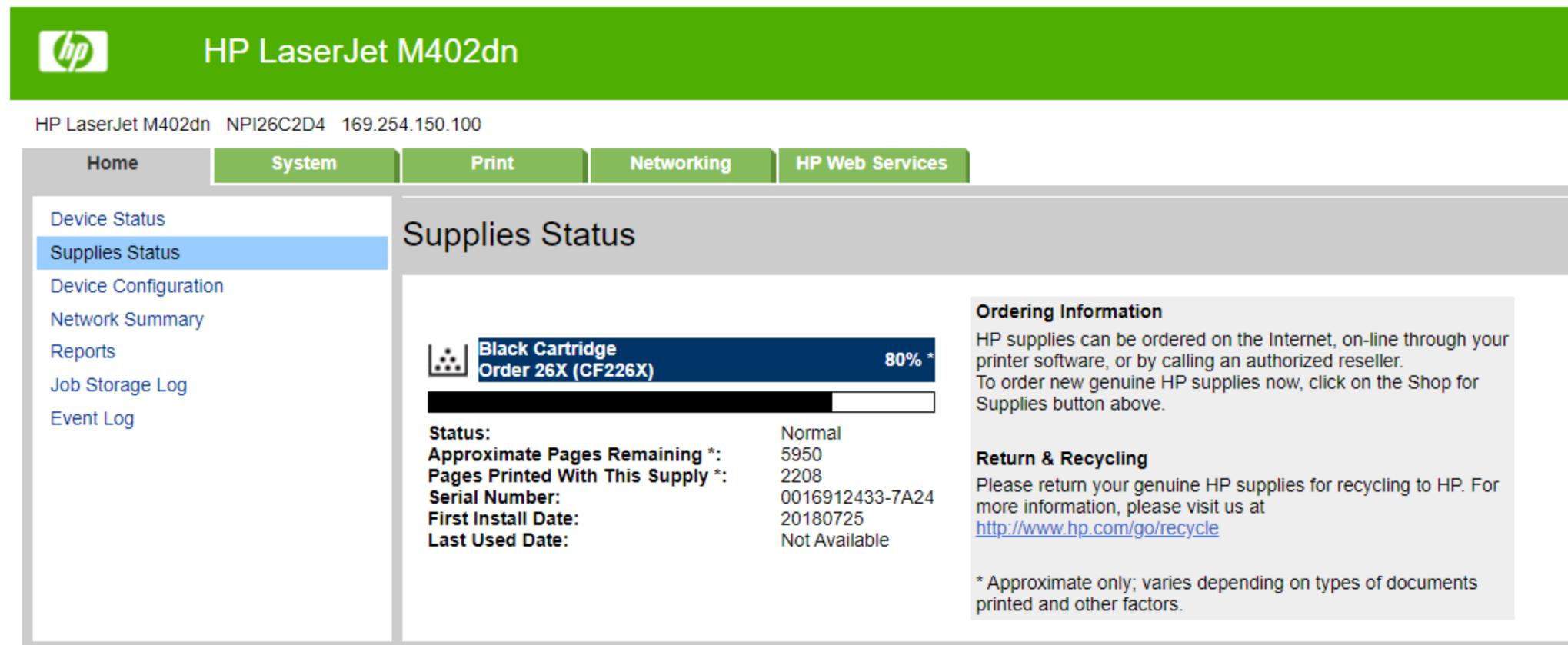
Printer Tests Cartridges	Origin	Product_Number	Serial Number	Brand	Manufacturer Name	First Install Date	Last Used Date	IsSetup	Consumable State
CF226X (initially installed in printer)	Original HP cartridge	CF226X	0016912433-7A24	HP	HP	20180725	Not Available	—	newGenuineHP
sample_9	Found on counterfeit cartridge from Germany	CF226X	0016844396-5J25	HP	HP	Not Available	Not Available	—	newGenuineHP
sample_10	Found on counterfeit cartridge from Germany	CF226X	0016843760-6F08	HP	HP	Not Available	Not Available	—	newGenuineHP
Apus_CF226X	Apus Soluções	CF226X	0016922170-6B10	HP	HP	Not Available	Not Available	—	newGenuineHP

[Results Summary](#)



Setting-up The Printers - HP LaserJet Pro M402dn- Reports

- CF226X (original HP cartridge)



The screenshot displays the HP LaserJet M402dn web interface. At the top, there is a green header with the HP logo and the printer model name. Below this, the printer's IP address is shown. A navigation menu includes Home, System, Print, Networking, and HP Web Services. The 'Supplies Status' page is active, showing a sidebar with links to Device Status, Supplies Status, Device Configuration, Network Summary, Reports, Job Storage Log, and Event Log. The main content area displays the 'Supplies Status' for a Black Cartridge (Order 26X (CF226X)) with a remaining level of 80%. A table provides details on the cartridge's status, including approximate pages remaining, pages printed, serial number, and installation dates. A section for 'Ordering Information' and 'Return & Recycling' is also present, along with a disclaimer at the bottom.

Item	Value
Status:	Normal
Approximate Pages Remaining *:	5950
Pages Printed With This Supply *:	2208
Serial Number:	0016912433-7A24
First Install Date:	20180725
Last Used Date:	Not Available

Ordering Information
HP supplies can be ordered on the Internet, on-line through your printer software, or by calling an authorized reseller. To order new genuine HP supplies now, click on the Shop for Supplies button above.

Return & Recycling
Please return your genuine HP supplies for recycling to HP. For more information, please visit us at <http://www.hp.com/go/recycle>

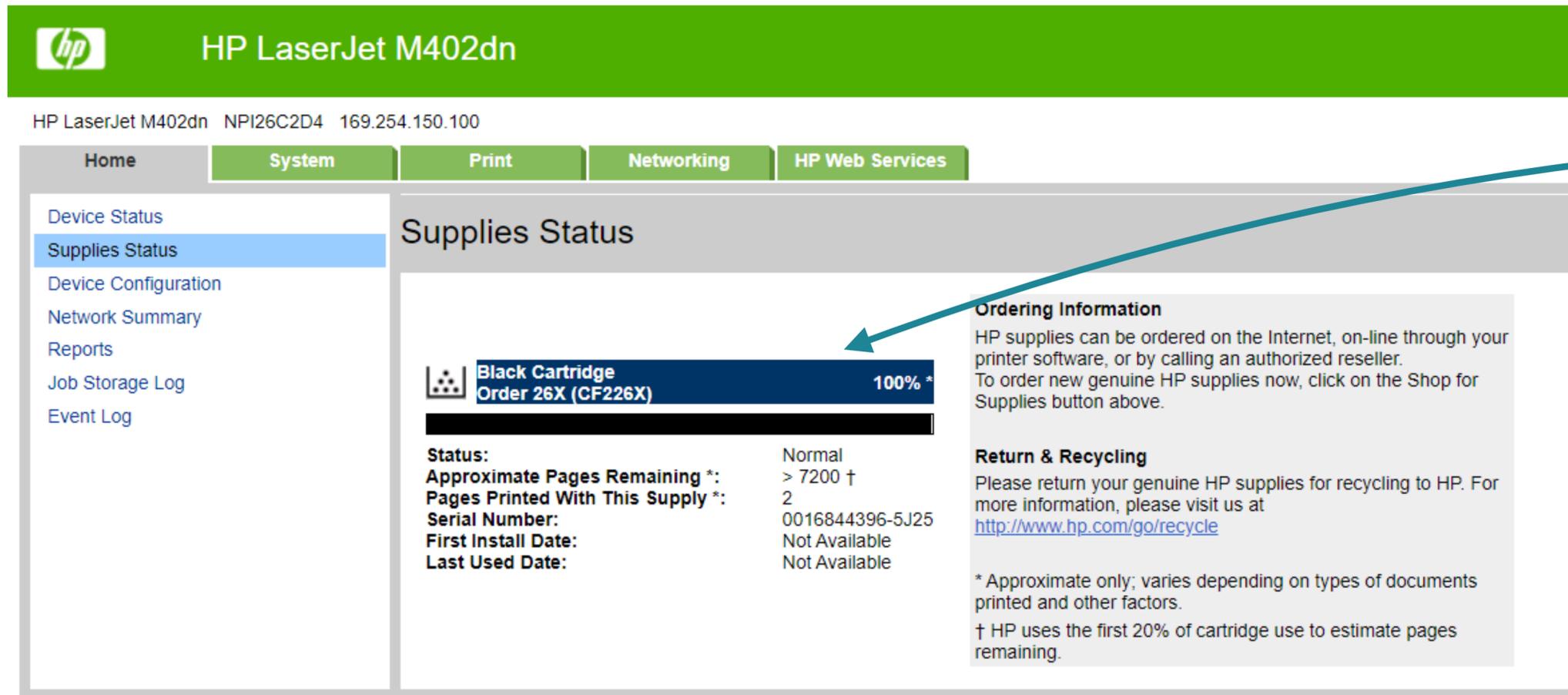
* Approximate only; varies depending on types of documents printed and other factors.

Supplies Status Page



Setting-up The Printers - HP LaserJet Pro M402dn- Reports

- Sample 9 - Found on counterfeit cartridge from Germany



The screenshot shows the HP LaserJet M402dn web interface. The header is a blue bar with the HP logo and the text 'HP LaserJet M402dn'. Below the header, there are navigation tabs for 'Home', 'System', 'Print', 'Networking', and 'HP Web Services'. The 'System' tab is selected. On the left, there is a sidebar menu with options: 'Device Status', 'Supplies Status', 'Device Configuration', 'Network Summary', 'Reports', 'Job Storage Log', and 'Event Log'. The 'Supplies Status' option is highlighted. The main content area is titled 'Supplies Status' and displays information for a 'Black Cartridge Order 26X (CF226X)'. A progress bar shows 100% remaining. Below the progress bar, there is a table with the following data:

Status:	Normal
Approximate Pages Remaining *:	> 7200 †
Pages Printed With This Supply *:	2
Serial Number:	0016844396-5J25
First Install Date:	Not Available
Last Used Date:	Not Available

To the right of the table, there is an 'Ordering Information' section with text: 'HP supplies can be ordered on the Internet, on-line through your printer software, or by calling an authorized reseller. To order new genuine HP supplies now, click on the Shop for Supplies button above.' Below that is a 'Return & Recycling' section with text: 'Please return your genuine HP supplies for recycling to HP. For more information, please visit us at <http://www.hp.com/go/recycle>'. At the bottom of the page, there are two footnotes: '* Approximate only; varies depending on types of documents printed and other factors.' and '† HP uses the first 20% of cartridge use to estimate pages remaining.'

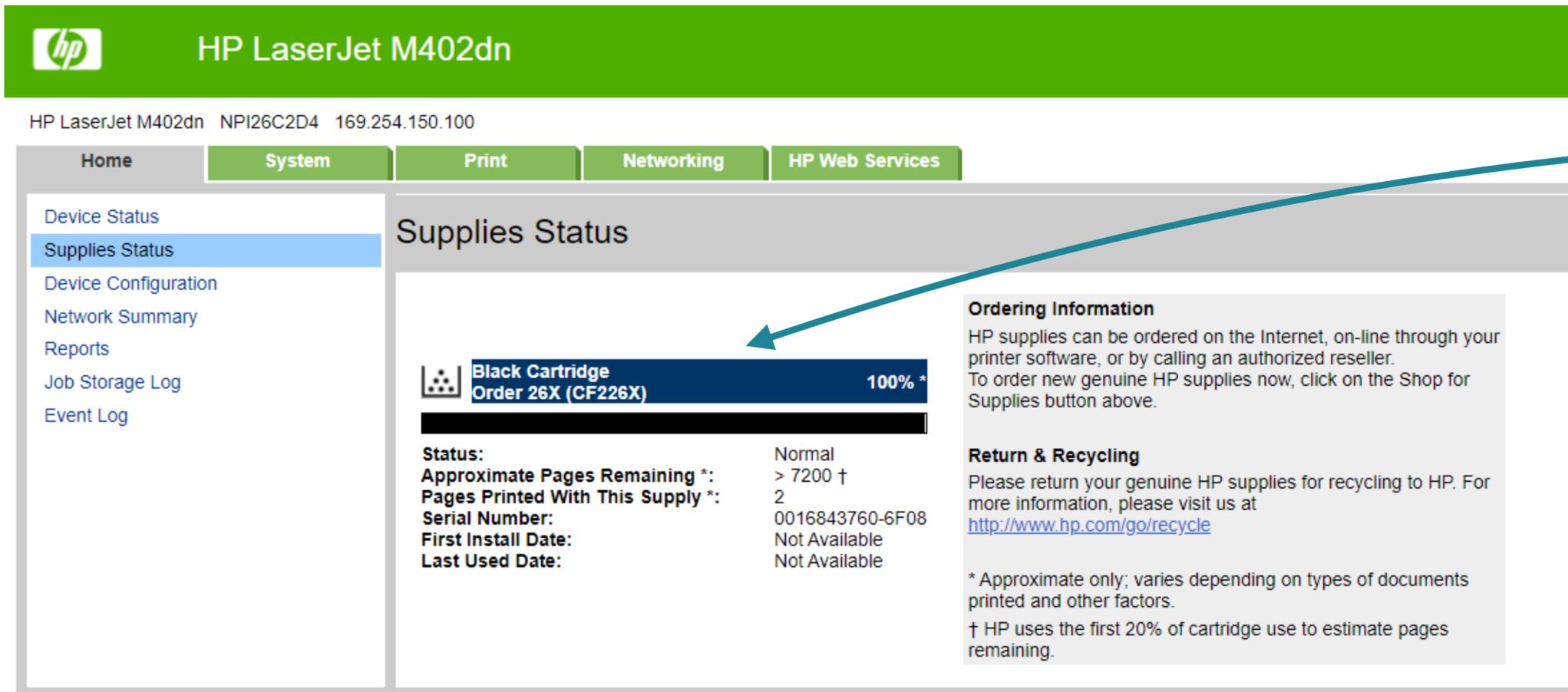
The header (blue box) inaccurately indicates the cartridge as original HP.

A clone cartridge should read « Non-HP Black Cartridge »

Supplies Status Page

Setting-up The Printers - HP LaserJet Pro M402dn- Reports

- Sample 10 - Found on counterfeit cartridge from Germany



The screenshot shows the HP LaserJet M402dn web interface. The header is green with the HP logo and the model name. Below the header, there are navigation tabs for Home, System, Print, Networking, and HP Web Services. The left sidebar contains a menu with options like Device Status, Supplies Status, Device Configuration, Network Summary, Reports, Job Storage Log, and Event Log. The main content area is titled 'Supplies Status' and displays information for a 'Black Cartridge Order 26X (CF226X)' which is at 100% capacity. A table lists details such as Status (Normal), Approximate Pages Remaining (> 7200 †), Pages Printed With This Supply (*: 2), Serial Number (0016843760-6F08), First Install Date (Not Available), and Last Used Date (Not Available). There are also sections for Ordering Information and Return & Recycling.

Item	Value
Status:	Normal
Approximate Pages Remaining *:	> 7200 †
Pages Printed With This Supply *:	2
Serial Number:	0016843760-6F08
First Install Date:	Not Available
Last Used Date:	Not Available

The header (blue box) inaccurately indicates the cartridge as original HP.

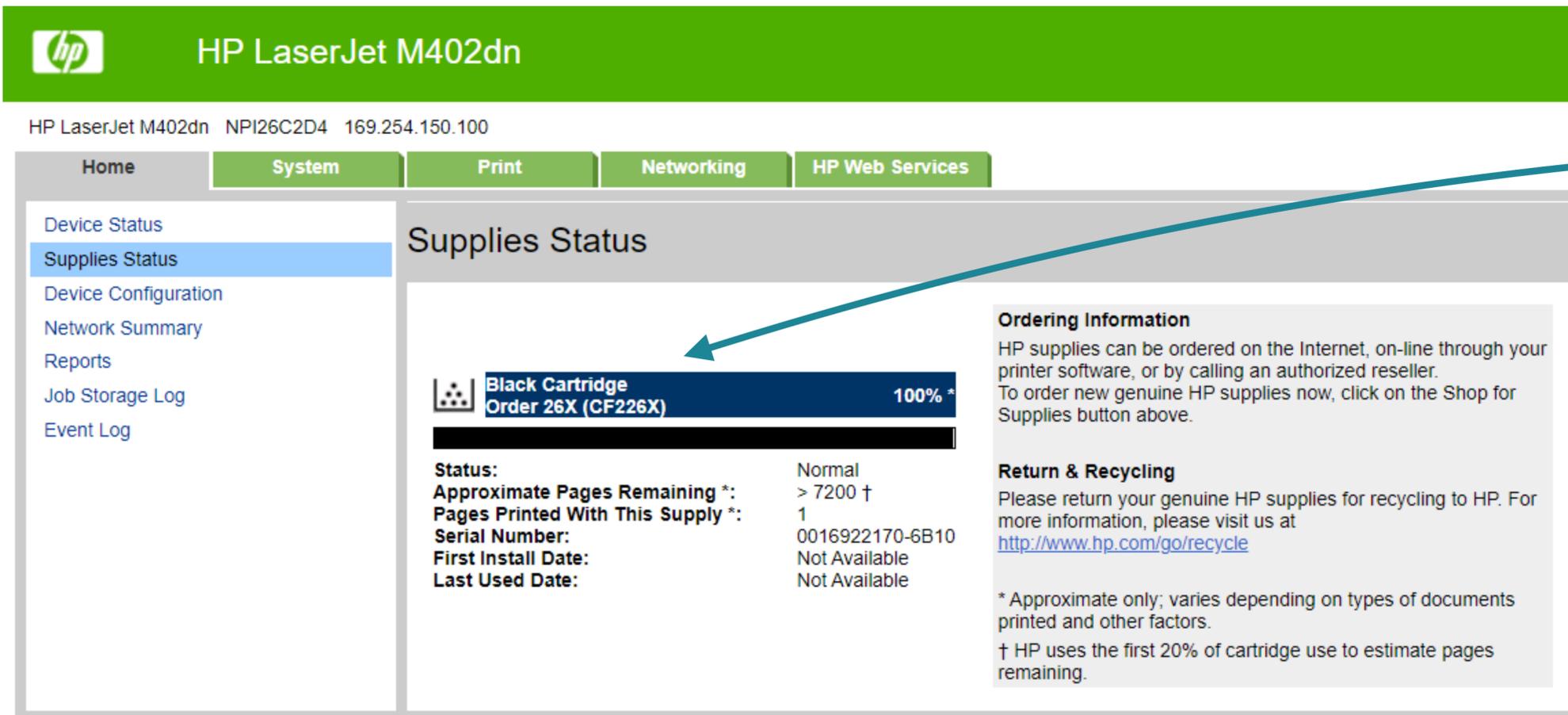
A clone cartridge should read « Non-HP Black Cartridge »

Supplies Status Page



Setting-up The Printers - HP LaserJet Pro M402dn- Reports

- APUS_CF226X - Black - from Apus Soluções



HP LaserJet M402dn NPI26C2D4 169.254.150.100

Home System **Print** Networking HP Web Services

Device Status
Supplies Status
Device Configuration
Network Summary
Reports
Job Storage Log
Event Log

Supplies Status

 Black Cartridge Order 26X (CF226X)	100%*
--	-------

Status: Normal
Approximate Pages Remaining*: > 7200 †
Pages Printed With This Supply*: 1
Serial Number: 0016922170-6B10
First Install Date: Not Available
Last Used Date: Not Available

Ordering Information
HP supplies can be ordered on the Internet, on-line through your printer software, or by calling an authorized reseller. To order new genuine HP supplies now, click on the Shop for Supplies button above.

Return & Recycling
Please return your genuine HP supplies for recycling to HP. For more information, please visit us at <http://www.hp.com/go/recycle>

* Approximate only; varies depending on types of documents printed and other factors.
† HP uses the first 20% of cartridge use to estimate pages remaining.

The header (blue box) inaccurately indicates the cartridge as original HP.

A clone cartridge should read « Non-HP Black Cartridge »

Supplies Status Page

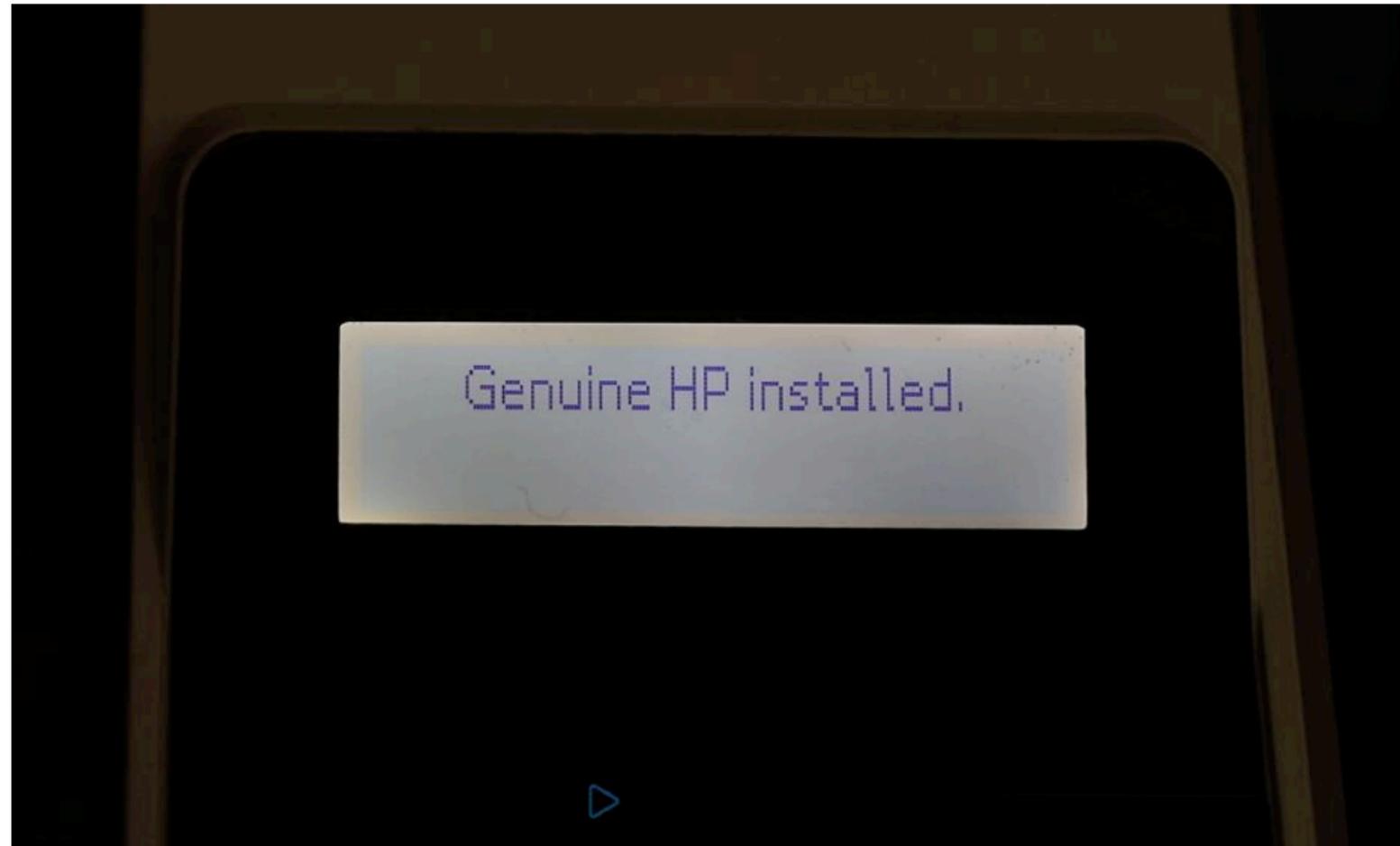
Setting-up The Printers - Printer Initial Message

- For the HP LaserJet Pro M402dn, the initial message of the printer has been photographed when installing a new cartridge. To make sure not to miss the shot, the full starting sequence has been filmed and the display message has then been extracted with a screen capture of the corresponding video
- The video for the APUS CF226X has been overexposed which did not make it possible to read the initial display message.
- Counterfeit and Genuine HP cartridges create the same experience for the user indicating that a Genuine HP cartridge is installed.

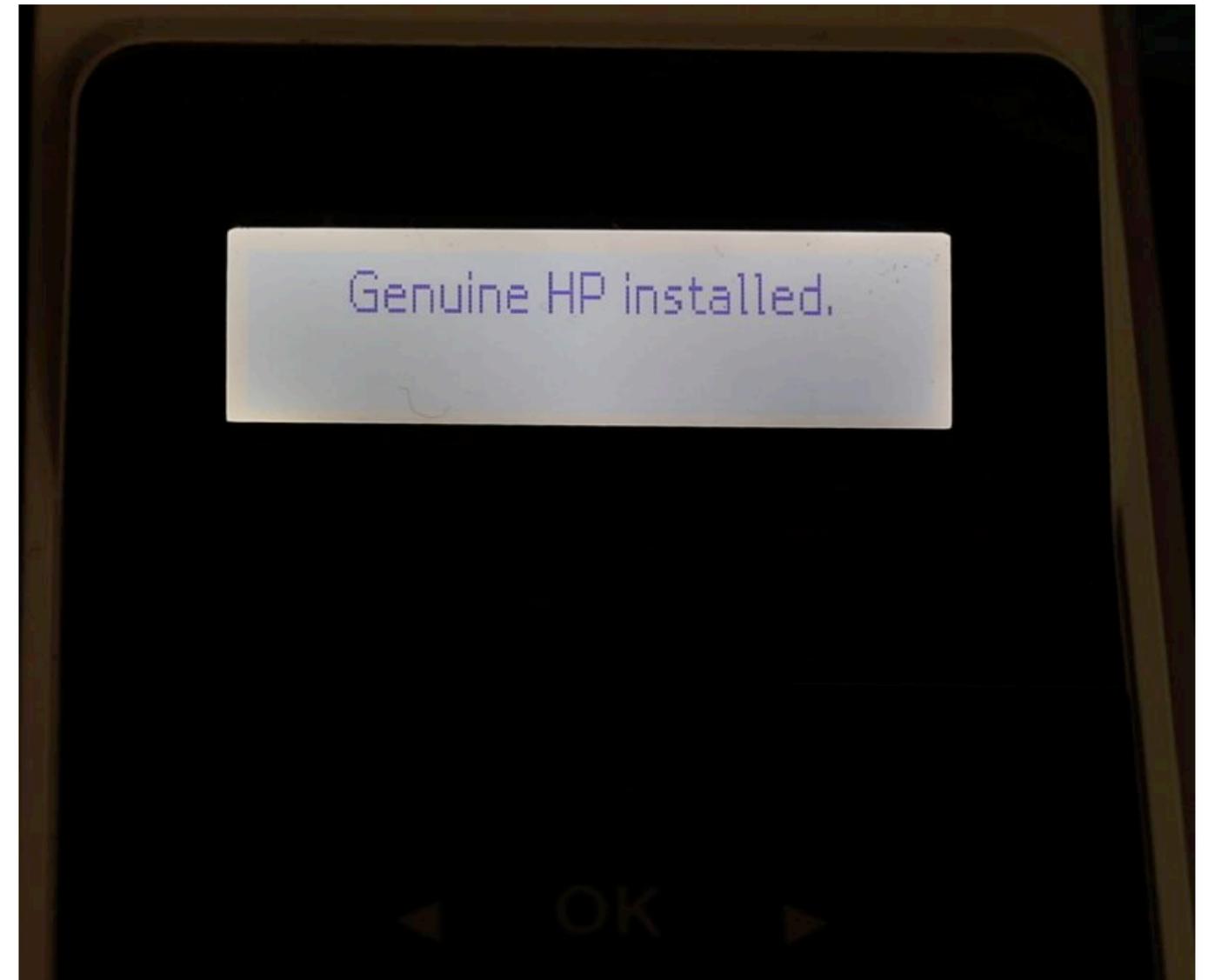
Printer	IDM Tested Cartridges	Origin	Initial Display Message
HP LaserJet Pro M402dn	Sample 9	Found on counterfeit cartridge from Germany	Genuine HP Installed
	Sample 10	Found on counterfeit cartridge from Germany	Genuine HP Installed
	APUS CF226X	Apus Soluções	—

Initial Display Message - Results summary displayed on the printer

Setting-up The Printers - HP LaserJet Pro M402dn



Sample_9 Initial Display Message
(Counterfeit)



Sample_10 Initial Display Message
(Counterfeit)

Setting-up The Printers - HP LaserJet Enterprise M553dn- Reports

- Configuration and supplies status reports have been printed using the printer's control panel
- The SNMP OID data have been extracted
- In the second table, green indicates the tested samples

	HCF363A (initially installed on printer)		NT-CH363FM	sample_1064	APUS_CF361
Origin	HCF363A-C	HCF363A-M	Made by Ninestar	Found on counterfeit cartridge seized in China	Apus Soluções
Color	Cyan	Magenta	Magenta	Cyan	Cyan
Cartridge Name	Non-HP Cyan Cartridge	Non-HP Magenta Cartridge	Non-HP Magenta Cartridge	Cyan Cartridge	Cyan Cartridge
Serial	100728986	100729312	100729767	100795560	100730034
First Install Date	20220804	20220804	20220921	20210820	20221102
Last Use Date	20220921	20220921	20220921	20220922	20221102

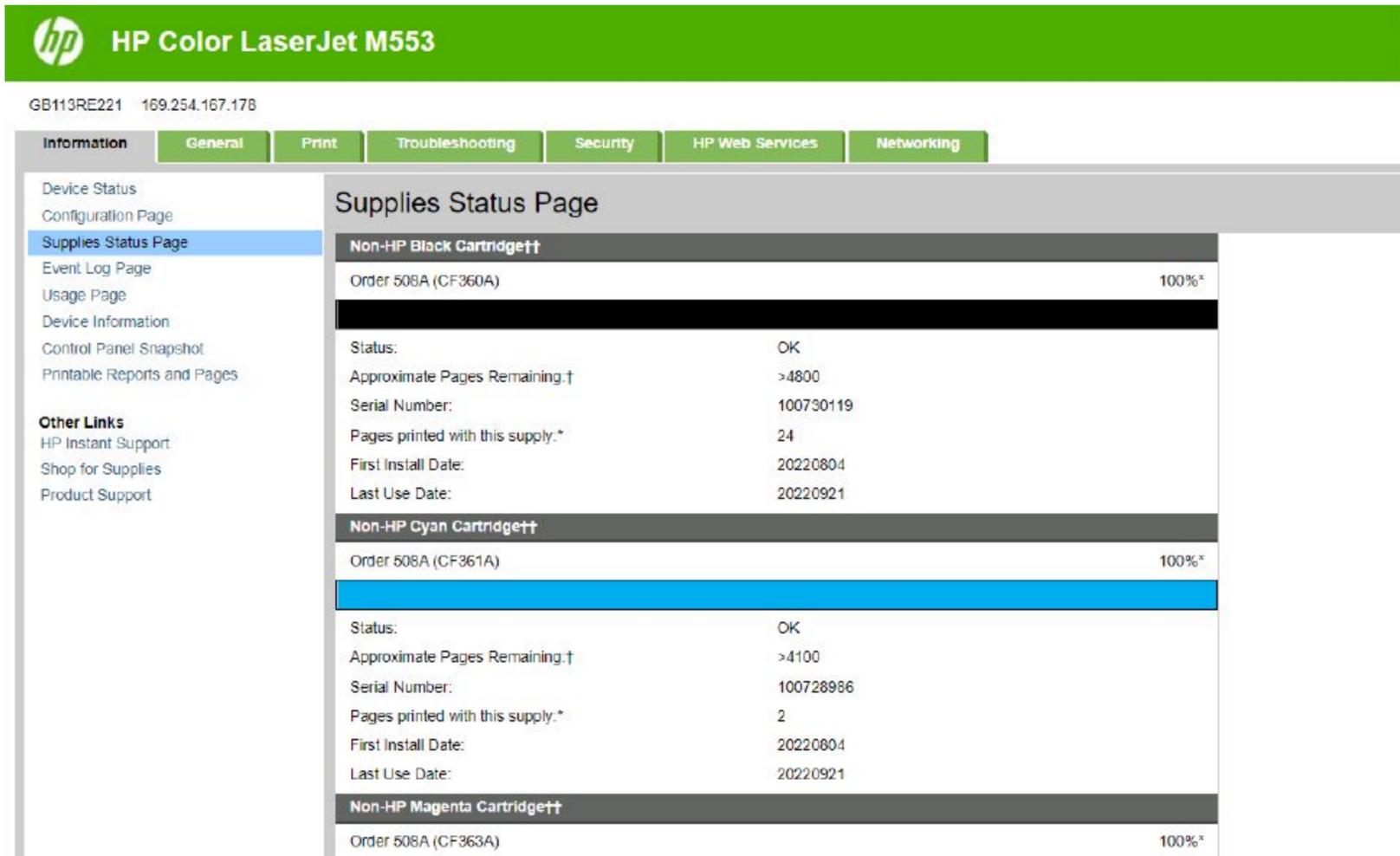
Prompt	Command	HCF363A-M (initially installed in printer)	NT-CH363FM	sample_1064	APUS_CF361	Comment
Origin			Made by Ninestar	Found on counterfeit cartridge seized in China	Apus Soluções	
Prompt_1	1.0	yèIQ	yèIQ	yèIQ	yèIQ	The value is set to “yèHP when the cartridge is identified as an HP original cartridge. The value is set to “yè__ when the cartridge is identified as an aftermarket cartridge.
	2.0	yèIQ	yèIQ	yèHP	yèHP	
	3.0	yèIQ	yè	yèIQ	yèIQ	
	4.0	yèIQ	yèIQ	yèIQ	yèIQ	
Prompt_2	1.0	80 00 00 02	80 00 00 02	80 00 00 02	80 00 00 02	The value is set to 01 when the cartridge is identified as an HP original cartridge. The value is set to 02 when the cartridge is identified as a non-HP cartridge
	2.0	80 00 00 02	80 00 00 02	80 00 00 01	80 00 00 01	
	3.0	80 00 00 02	80 00 00 02	80 00 00 02	80 00 00 02	
	4.0	80 00 00 02	80 00 00 02	80 00 00 02	80 00 00 02	

Results summary



Setting-up The Printers - HP LaserJet Enterprise M553dn- Reports

- HCF363A - Magenta



HP Color LaserJet M553

GB119RE221 169.254.167.178

Information | General | Print | Troubleshooting | Security | HP Web Services | Networking

Supplies Status Page

Non-HP Black Cartridge††	
Order 508A (CF360A)	100%*
Status:	OK
Approximate Pages Remaining:†	>4800
Serial Number:	100730119
Pages printed with this supply:*	24
First Install Date:	20220804
Last Use Date:	20220921
Non-HP Cyan Cartridge††	
Order 508A (CF361A)	100%*
Status:	OK
Approximate Pages Remaining:†	>4100
Serial Number:	100728986
Pages printed with this supply:*	2
First Install Date:	20220804
Last Use Date:	20220921
Non-HP Magenta Cartridge††	
Order 508A (CF363A)	100%*

Supplies Status Page

Status:	OK
Approximate Pages Remaining:†	>4100
Serial Number:	100729312
Pages printed with this supply:*	2
First Install Date:	20220804
Last Use Date:	20220921
Non-HP Yellow Cartridge††	
Order 508A (CF362A)	100%*
Status:	OK
Approximate Pages Remaining:†	>3750
Serial Number:	100798195
Pages printed with this supply:*	2
First Install Date:	20220804
Last Use Date:	20220921
Fuser Kit	
Order 110V-B5L35A, 220V-B5L36A	100%*
Status:	OK
Toner Collection Unit	
Order B5L37A	OK
Status:	OK
Ordering Information	
HP supplies can be ordered on the internet (http://www.suresupply.com), on-line through your product software, or by calling an authorized reseller.	
Return & Recycling	
Please return your genuine HP supplies for recycling to HP. For more information, please visit us at http://www.hp.com/go/recycle	
Note	
* Approximate only; varies depending on types of documents printed and other factors.	
† HP uses the first 20% of cartridge use to estimate pages remaining.	
†† A non-HP supply has been installed. If you believe you purchased a genuine HP supply, visit us at http://www.hp.com/go/antcounterfeit . Any printer repair required as a result of using non-HP supplies is not covered under warranty.	

Setting-up The Printers - HP LaserJet Enterprise M553dn- Reports

- NT-CH363FM - Made by Ninestar

The screenshot shows the HP Color LaserJet M553 web interface. The 'Supplies Status Page' is active, displaying details for three non-HP cartridges: Black, Cyan, and Magenta. Each cartridge is identified as 'Non-HP' and shows a status of 'OK' and 100% remaining. The Black cartridge (Order 508A, CF360A) has approximately 4800 pages remaining. The Cyan cartridge (Order 508A, CF361A) has approximately 4100 pages remaining. The Magenta cartridge (Order 508A, CF363A) has 5 pages remaining. The interface also includes a navigation menu on the left and a top header with the HP logo and model name.

Supplies Status Page

The clone cartridge appropriately identified as non-HP.

This detailed screenshot shows the 'Supplies Status Page' for the HP Color LaserJet M553. It lists the status and details for three non-HP cartridges: Black, Cyan, and Magenta. Each cartridge is identified as 'Non-HP' and shows a status of 'OK' and 100% remaining. The Black cartridge (Order 508A, CF360A) has approximately 4800 pages remaining. The Cyan cartridge (Order 508A, CF361A) has approximately 4100 pages remaining. The Magenta cartridge (Order 508A, CF363A) has 5 pages remaining. The interface also includes a navigation menu on the left and a top header with the HP logo and model name.

Non-HP Black Cartridge††	
Order 508A (CF360A)	100%*
Status:	OK
Approximate Pages Remaining:†	>4800
Serial Number:	100730119
Pages printed with this supply:*	29
First Install Date:	20220804
Last Use Date:	20220921

Non-HP Cyan Cartridge††	
Order 508A (CF361A)	100%*
Status:	OK
Approximate Pages Remaining:†	>4100
Serial Number:	100728986
Pages printed with this supply:*	5
First Install Date:	20220804
Last Use Date:	20220921

Non-HP Magenta Cartridge††	
Order 508A (CF363A)	100%*
Status:	OK
Approximate Pages Remaining:†	>4100
Serial Number:	100729767
Pages printed with this supply:*	1
First Install Date:	20220921
Last Use Date:	20220921

Non-HP Yellow Cartridge††

Order 508A (CF362A)	100%*
Status:	OK
Approximate Pages Remaining:†	>3750
Serial Number:	100798195
Pages printed with this supply:*	5
First Install Date:	20220804
Last Use Date:	20220921

Fuser Kit

Order 110V-B5L35A, 220V-B5L36A	100%*
Status:	OK

Toner Collection Unit

Order B5L37A	OK
Status:	OK

Ordering Information
HP supplies can be ordered on the internet (<http://www.suresupply.com>), on-line through your product software, or by calling an authorized reseller.

Return & Recycling
Please return your genuine HP supplies for recycling to HP. For more information, please visit us at <http://www.hp.com/go/recycle>

Note
* Approximate only; varies depending on types of documents printed and other factors.
† HP uses the first 20% of cartridge use to estimate pages remaining.
†† A non-HP supply has been installed. If you believe you purchased a genuine HP supply, visit us at <http://www.hp.com/go/anticothcounterfeit>. Any printer repair required as a result of using non-HP supplies is not covered under warranty.



Setting-up The Printers - HP LaserJet Enterprise M553dn- Reports

- Sample 1064 - Found on counterfeit cartridge seized in China

The screenshot shows the HP Color LaserJet M553 Supplies Status Page. The page title is "Supplies Status Page". It lists four cartridges: Non-HP Black Cartridge, Cyan Cartridge, Non-HP Yellow Cartridge, and Non-HP Magenta Cartridge. Each cartridge is shown with its status (OK), approximate pages remaining, serial number, pages printed, first install date, and last use date. The Non-HP Yellow Cartridge is highlighted in yellow. A blue arrow points from the text "Supplies Status Page" to the "Supplies Status Page" header in the screenshot.

Supplies Status Page

The counterfeit is identified as original HP.

This is a detailed view of the HP Color LaserJet M553 Supplies Status Page. It shows the status of four cartridges: Non-HP Black Cartridge, Non-HP Yellow Cartridge, Cyan Cartridge, and Non-HP Magenta Cartridge. Each cartridge is shown with its status (OK), approximate pages remaining, serial number, pages printed, first install date, and last use date. The Non-HP Yellow Cartridge is highlighted in yellow. Below the cartridge information, there is a section for "Ordering Information" and "Return & Recycling".

Cartridge	Status	Approximate Pages Remaining	Serial Number	Pages printed with this supply	First Install Date	Last Use Date
Non-HP Black Cartridge	OK	>4100	100729312	3	20220804	20220922
Non-HP Yellow Cartridge	OK	>3750	100798195	7	20220804	20220922
Cyan Cartridge	OK	>4100	100795560	1	20210820	20220922
Non-HP Magenta Cartridge	OK	>4100	100795560	1	20210820	20220922

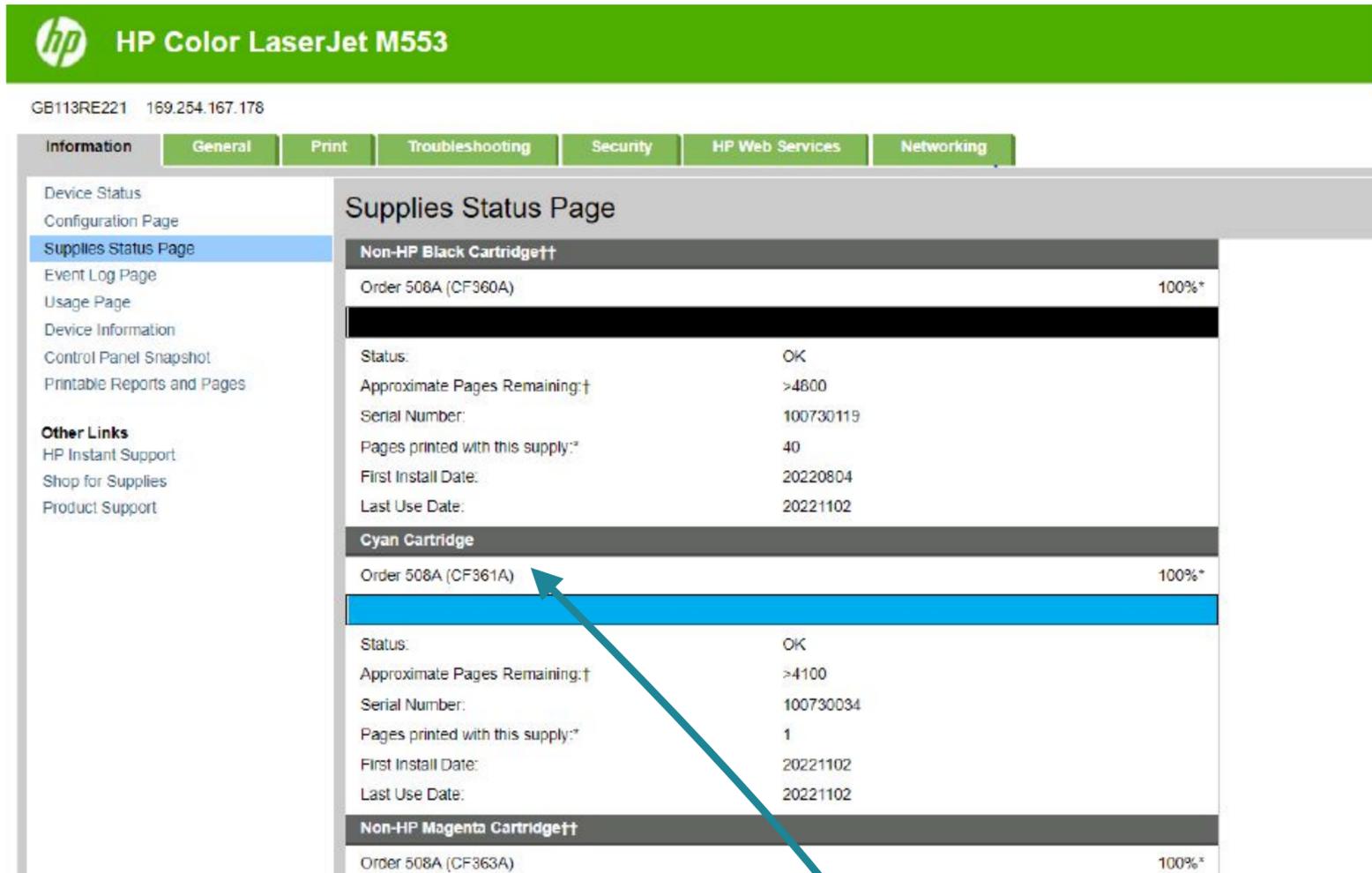
Ordering Information
HP supplies can be ordered on the Internet (<http://www.suresupply.com>), on-line through your product software, or by calling an authorized reseller.

Return & Recycling
Please return your genuine HP supplies for recycling to HP. For more information, please visit us at <http://www.hp.com/go/recycle>

Note
* Approximate only; varies depending on types of documents printed and other factors.
† HP uses the first 20% of cartridge use to estimate pages remaining.
‡ A non-HP supply has been installed. If you believe you purchased a genuine HP supply, visit us at <http://www.hp.com/go/anticoncounterfeit>. Any printer repair required as a result of using non-HP supplies is not covered under warranty.

Setting-up The Printers - HP LaserJet Enterprise M553dn- Reports

- APUS CF361A - Cyan - from Apus Soluções



The screenshot shows the HP Color LaserJet M553 Supplies Status Page. The page is titled "Supplies Status Page" and lists the status of various cartridges. The Cyan Cartridge section is highlighted in blue, and a red arrow points to the "Order 508A (CF361A)" entry. The status for this cartridge is "OK".

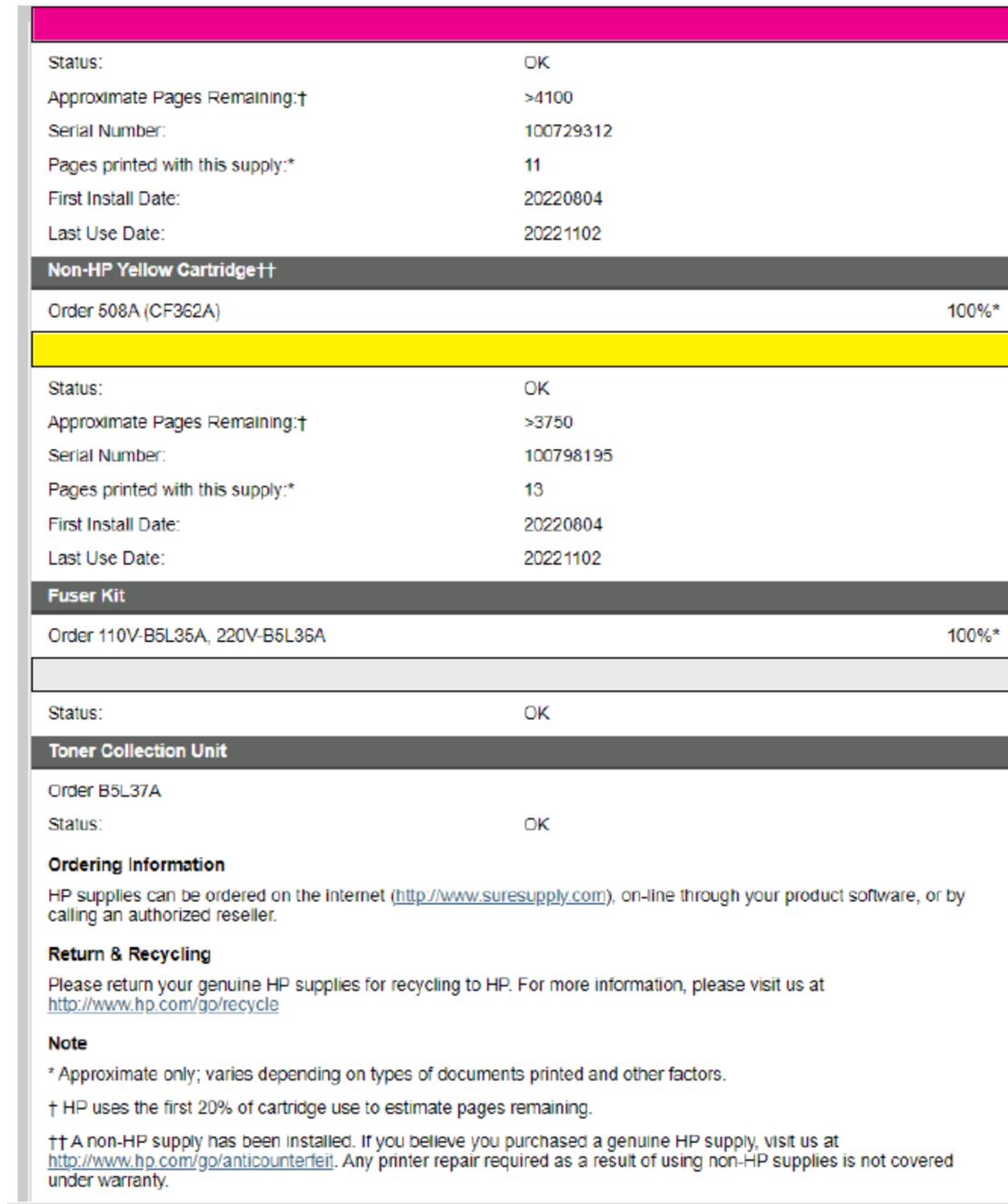
Non-HP Black Cartridge††	
Order 508A (CF360A)	100%*
Status:	OK
Approximate Pages Remaining:†	>4800
Serial Number:	100730119
Pages printed with this supply:*	40
First Install Date:	20220804
Last Use Date:	20221102

Cyan Cartridge	
Order 508A (CF361A)	100%*
Status:	OK
Approximate Pages Remaining:†	>4100
Serial Number:	100730034
Pages printed with this supply:*	1
First Install Date:	20221102
Last Use Date:	20221102

Non-HP Magenta Cartridge††	
Order 508A (CF363A)	100%*

Supplies Status Page

The clone chip is identified as an original HP



The screenshot shows the HP Color LaserJet M553 Status Page. The page is titled "Supplies Status Page" and lists the status of various cartridges. The Cyan Cartridge section is highlighted in yellow, and a red arrow points to the "Order 508A (CF361A)" entry. The status for this cartridge is "OK".

Status:	OK
Approximate Pages Remaining:†	>4100
Serial Number:	100729312
Pages printed with this supply:*	11
First Install Date:	20220804
Last Use Date:	20221102

Non-HP Yellow Cartridge††	
Order 508A (CF362A)	100%*
Status:	OK
Approximate Pages Remaining:†	>3750
Serial Number:	100798195
Pages printed with this supply:*	13
First Install Date:	20220804
Last Use Date:	20221102

Fuser Kit	
Order 110V-B5L35A, 220V-B5L36A	100%*
Status:	OK

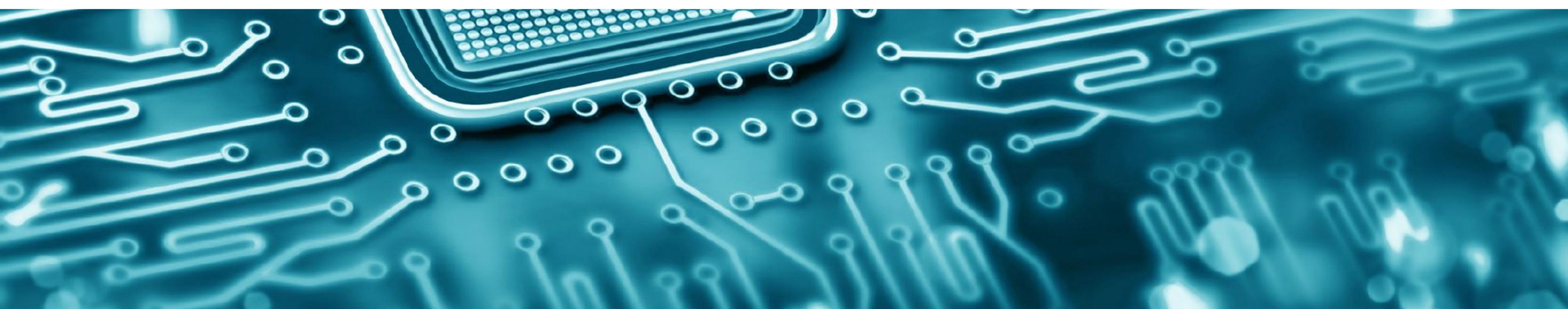
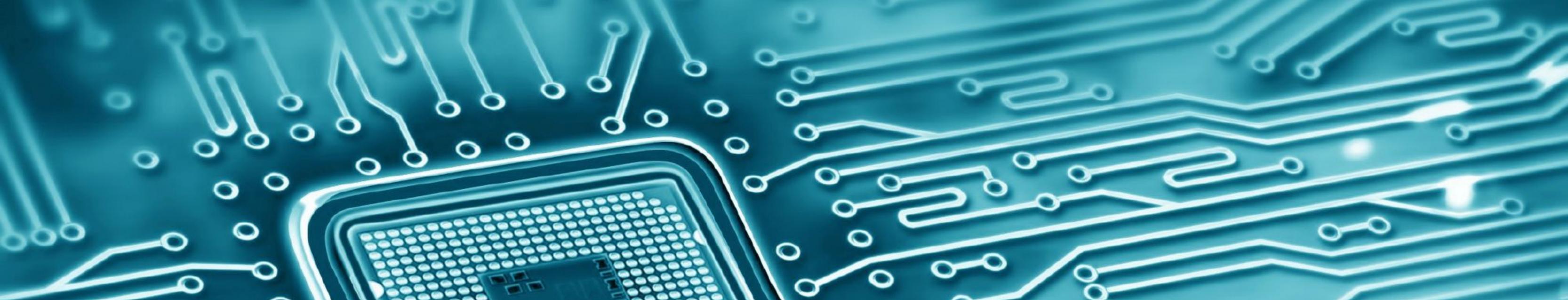
Toner Collection Unit	
Order B5L37A	OK

Ordering Information
HP supplies can be ordered on the internet (<http://www.suresupply.com>), on-line through your product software, or by calling an authorized reseller.

Return & Recycling
Please return your genuine HP supplies for recycling to HP. For more information, please visit us at <http://www.hp.com/go/recycle>

Note
* Approximate only; varies depending on types of documents printed and other factors.
† HP uses the first 20% of cartridge use to estimate pages remaining.
†† A non-HP supply has been installed. If you believe you purchased a genuine HP supply, visit us at <http://www.hp.com/go/anticounterfeit>. Any printer repair required as a result of using non-HP supplies is not covered under warranty.





TESTING RESETTABLE CHIPS WITH UNISMART DEVICE

Testing Resettable Chips with Unismart Device

- Blank B73 re-programmable chips made by Apex Microelectronics were used to program CF226A and CF360A chips
- The programmed chip status has been checked the following way:
 - The Unismart device has been configured to program:
 - A CF226A-N-V2 product
 - A CF226A-V2 product
 - A CF360A-N-V2 product
 - A CF360A-V2 product
 - The device has been set to « reset » status
 - The jig holder has been put in position and its button pressed
 - The device has been set in « check » status
 - The jig holder has been placed and its button pressed in order to confirm the chip has been programmed
- => the operation has been reported as successful for the four chips.
- After that operation, the various tests have been performed (Initial Display Message, Supplies Status Report, SNMP OID Data, Firmware Report Data)

Testing Resettable Chips with Unismart Device

Printer	M402dn		M553dn	
Cartridges B73 <-	CF226A-V2	CF226A-N-V2	CF360A-V2	CF360A-N-V2
Brand	HP	HP	HP	HP
Product	CF226A-V2	CF226A-N-V2	CF360A-V2	CF360A-N-V2
Color	BK	BK	BK	BK
Region	WW	WW	WW	WW
Apex credits	35	35	36	36
Chip type	APEX Chip	APEX Chip	APEX Chip	APEX Chip
Chip Status	Chip already OK/new	Chip already OK/new	Chip already OK/new	Chip already OK/new
Series	Laser Jet Pro M402dn	Laser Jet Pro M402dn	Laser Jet Enterprise M553n	Laser Jet Enterprise M553n
PCB	B65	B65	B64	B64
Type	Laserjet	Laserjet	Laserjet	Laserjet
JIG	H20	H20	H20	H20
Yield	3,1K	3,1K	6K	6K
OEM credits				
Page/Times				
Ink/toner				
Status	Operation succeeded	Operation succeeded	Operation succeeded	Operation succeeded

B73 Programmation - Results summary displayed on Unismart screen

Testing Resettable Chips with Unismart Device - Initial Display Message

- For the HP LaserJet Pro M402dn, the initial message of the printer has been photographed when installing a new cartridge. To make sure not to miss the shot, the full starting sequence has been filmed and the display message has then been extracted with a screen capture of the corresponding video

Printer	IDM Tested Cartridges	Initial Display Message
HP LaserJet Pro M402dn	B73 <- CF226A-N-V2	Non-HP Supply Installed
	B73 <- CF226A-V2	Genuine HP Installed

Initial Display Message - Results summary displayed on the printer

Testing Resettable Chips with Unismart Device - M402dn

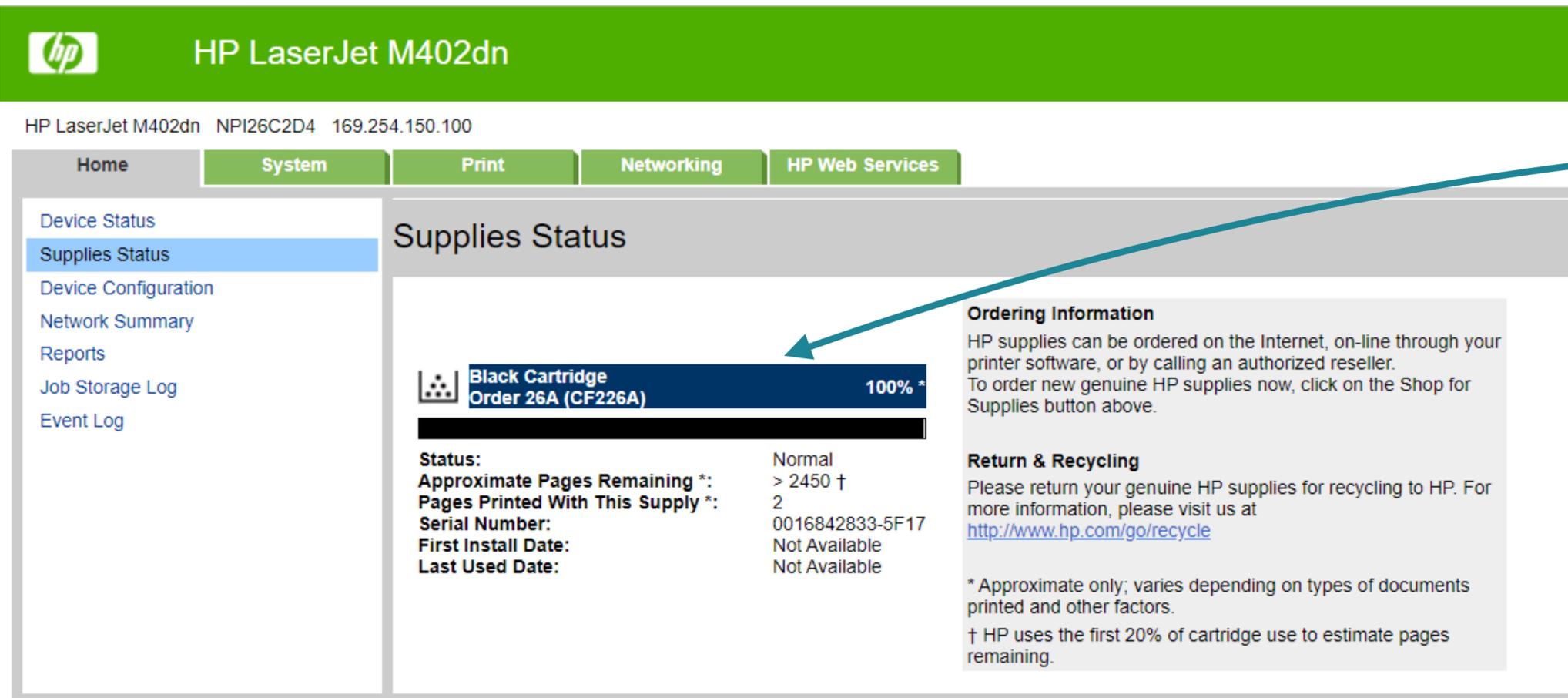
- Configuration and supplies status reports have been printed using the printer's control panel
- The Firmware Report file has also been extracted

Printer Tests Cartridges	Product Number	Serial Number	Brand	Manufacturer Brand	First Install Date	Last Used Date	IsSetup	Consumable State
B73-CF226A-N-V2	CF226A	0016842825-6F21	clone		Not Available	Not Available	—	newGenuineHP
B73-CF226A-V2	CF226A	0016842833-5F17	HP	HP	Not Available	Not Available	—	newGenuineHP

Results Summary

Setting-up The Printers - HP LaserJet Pro M402dn- Reports

- B73 <- CF226A-V2



HP LaserJet M402dn NPI26C2D4 169.254.150.100

Home System **Print** Networking HP Web Services

Device Status
Supplies Status
Device Configuration
Network Summary
Reports
Job Storage Log
Event Log

Supplies Status

 Black Cartridge Order 26A (CF226A)	100% *
--	---------------

Status:	Normal
Approximate Pages Remaining *:	> 2450 †
Pages Printed With This Supply *:	2
Serial Number:	0016842833-5F17
First Install Date:	Not Available
Last Used Date:	Not Available

Ordering Information
HP supplies can be ordered on the Internet, on-line through your printer software, or by calling an authorized reseller. To order new genuine HP supplies now, click on the Shop for Supplies button above.

Return & Recycling
Please return your genuine HP supplies for recycling to HP. For more information, please visit us at <http://www.hp.com/go/recycle>

* Approximate only; varies depending on types of documents printed and other factors.
† HP uses the first 20% of cartridge use to estimate pages remaining.

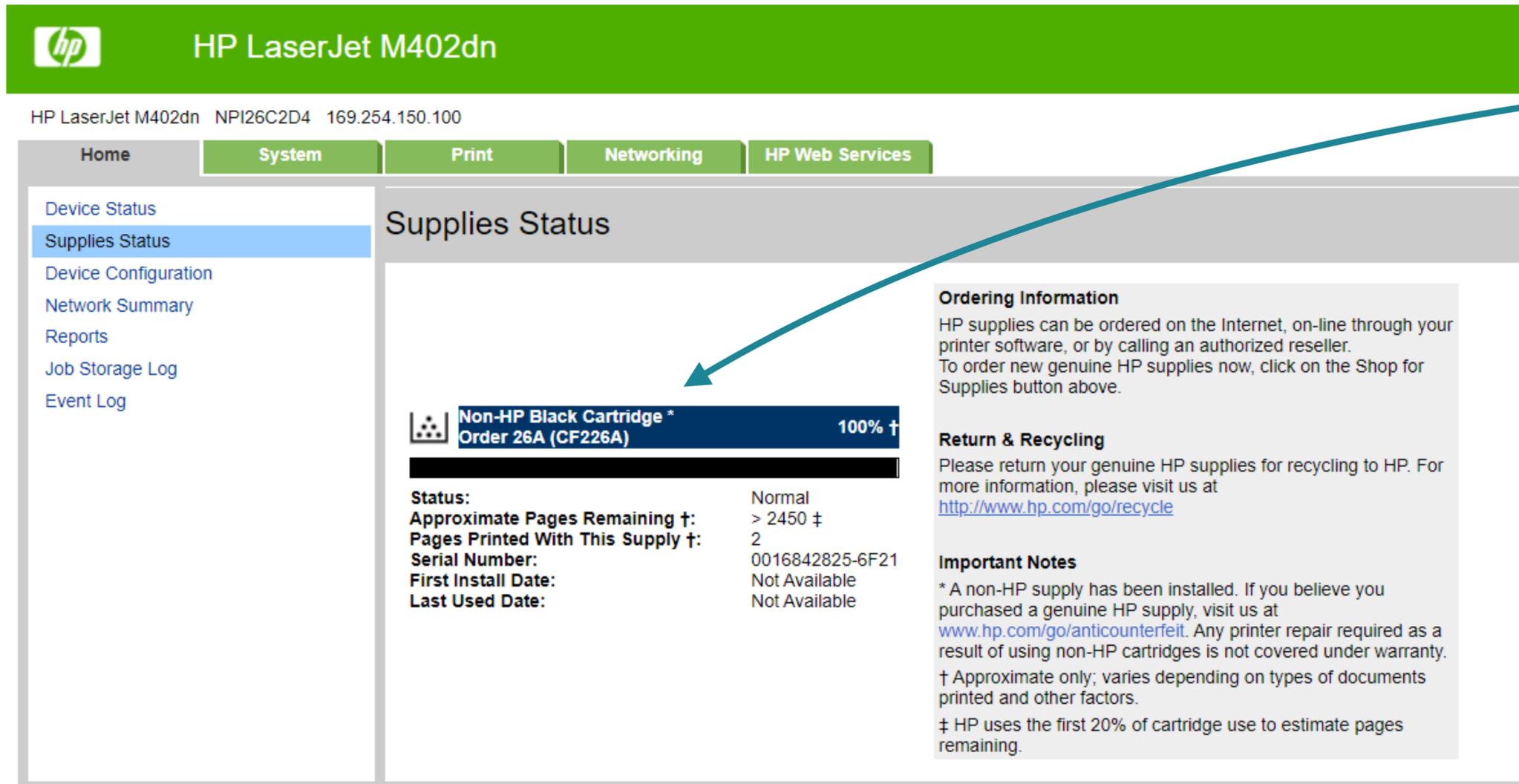
The header (blue box) inaccurately indicates the cartridge as original HP.

A clone cartridge should read « Non-HP Black Cartridge »

Supplies Status Page

Setting-up The Printers - HP LaserJet Pro M402dn- Reports

- B73 <-CF226A-N-V2



The screenshot shows the HP LaserJet M402dn web interface. The top navigation bar includes Home, System, Print, Networking, and HP Web Services. The left sidebar lists Device Status, Supplies Status (highlighted), Device Configuration, Network Summary, Reports, Job Storage Log, and Event Log. The main content area is titled 'Supplies Status' and displays a progress bar for a 'Non-HP Black Cartridge * Order 26A (CF226A)' at 100%. Below the progress bar, a table lists cartridge details: Status (Normal), Approximate Pages Remaining † (> 2450 ‡), Pages Printed With This Supply † (2), Serial Number (0016842825-6F21), First Install Date (Not Available), and Last Used Date (Not Available). To the right, there are sections for Ordering Information, Return & Recycling, and Important Notes.

Status:	Normal
Approximate Pages Remaining †:	> 2450 ‡
Pages Printed With This Supply †:	2
Serial Number:	0016842825-6F21
First Install Date:	Not Available
Last Used Date:	Not Available

The clone cartridge appropriately identified as non-HP.

Supplies Status Page

Testing Resettable Chips with Unismart Device - M553dn

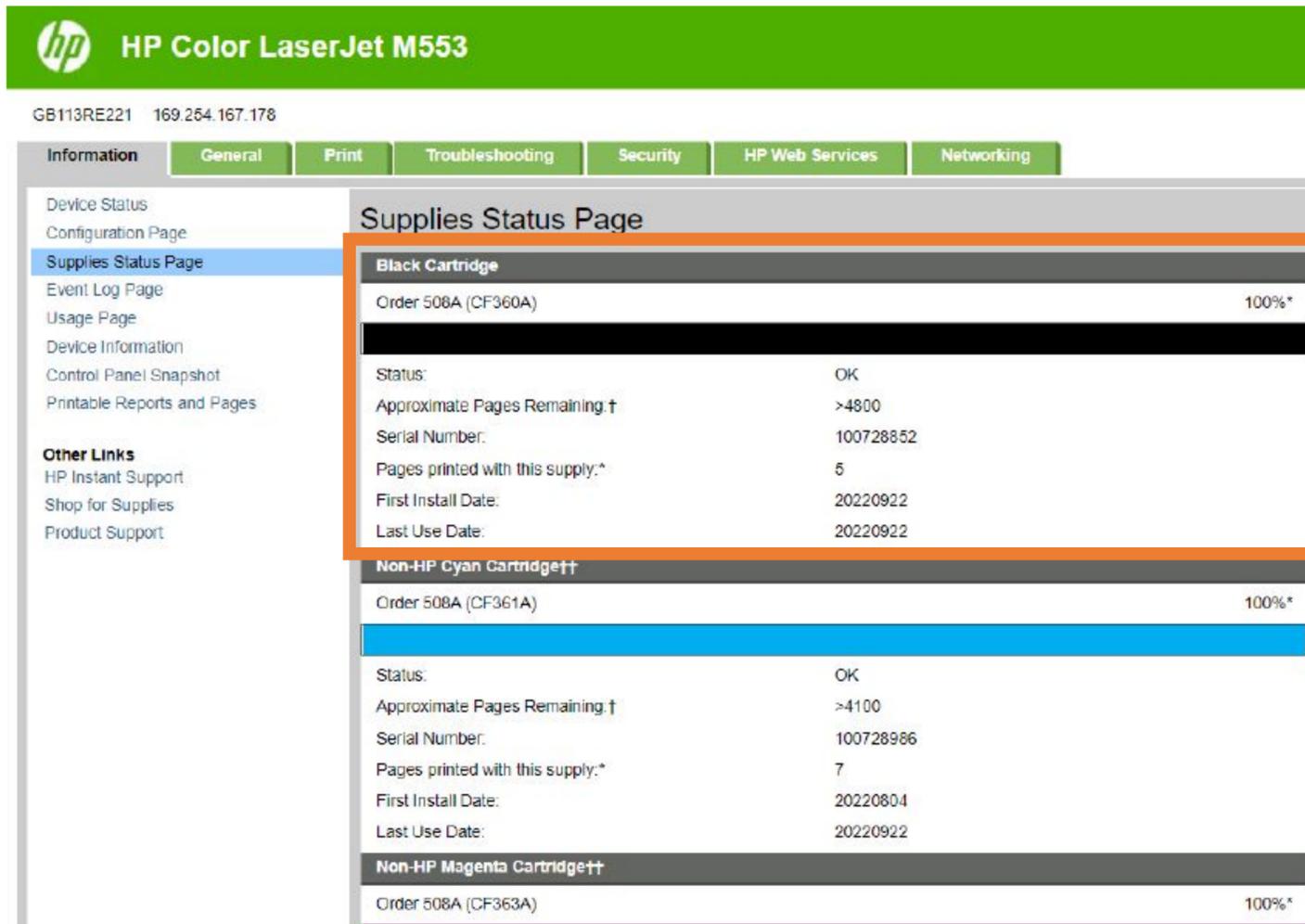
- Configuration and supplies status reports have been printed using the printer's control panel
- The SNMP OID data have been extracted

	B73-CF360A-N-V2	B73-CF360A-V2
Color	Black	Black
Cartridge Name	Non-HP Black Cartridge	Black Cartridge
Serial	100728850	100728852
First Install Date	20220922	20220922
Last Use Date	20220922	20220922

Prompt	Command	B73-CF360A-N-V2	B73-CF360A-V2	Comment
Prompt_1	1.0	yè	yèHP	The value is set to “yèHP” when the cartridge is identified as an HP original cartridge.
	2.0	yèIQ	yèIQ	
	3.0	yèIQ	yèIQ	The value is set to “yè__” when the cartridge is identified as an aftermarket cartridge.
	4.0	yèIQ	yèIQ	
Prompt_2	1.0	80 00 00 02	80 00 00 01	The value is set to 01 when the cartridge is identified as an HP original cartridge.
	2.0	80 00 00 02	80 00 00 02	
	3.0	80 00 00 02	80 00 00 02	The value is set to 02 when the cartridge is identified as a non-HP cartridge
	4.0	80 00 00 02	80 00 00 02	

Setting-up The Printers - HP LaserJet Enterprise M553dn- Reports

- B73 <- CF360A-V2



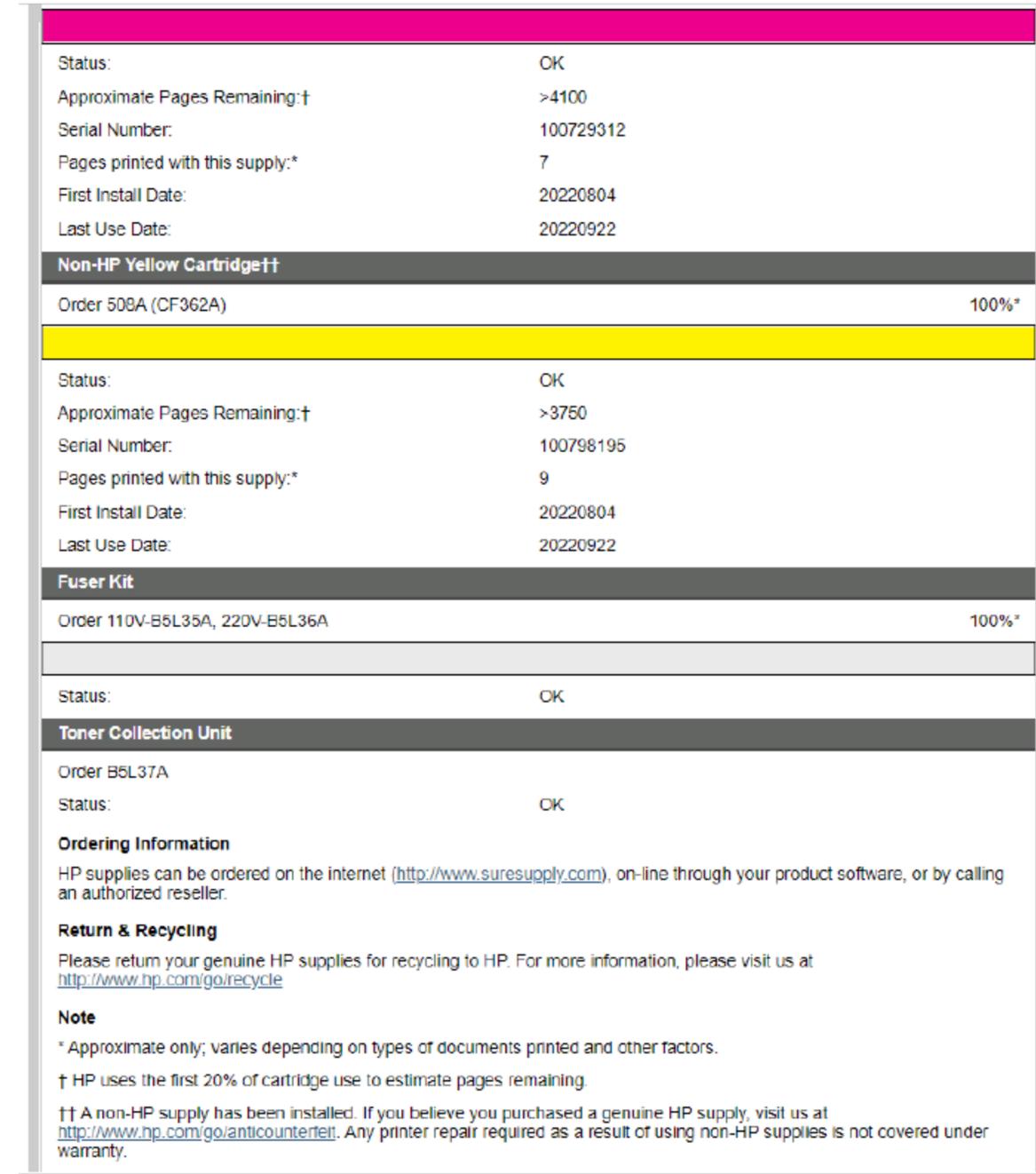
The screenshot shows the HP Color LaserJet M553 web interface. The 'Supplies Status Page' is selected in the left navigation menu. The main content area displays the status of three cartridges: Black, Cyan, and Magenta. The Black Cartridge section is highlighted with an orange border. Each section shows the cartridge name, status, approximate pages remaining, serial number, pages printed, first install date, and last use date.

Black Cartridge	
Order 508A (CF360A)	100%*
Status:	OK
Approximate Pages Remaining: †	>4800
Serial Number:	100728852
Pages printed with this supply:*	5
First Install Date:	20220922
Last Use Date:	20220922

Non-HP Cyan Cartridge ††	
Order 508A (CF361A)	100%*
Status:	OK
Approximate Pages Remaining: †	>4100
Serial Number:	100728986
Pages printed with this supply:*	7
First Install Date:	20220804
Last Use Date:	20220922

Non-HP Magenta Cartridge ††	
Order 508A (CF363A)	100%*

Supplies Status Page



This detailed screenshot shows the status of three cartridges: Black, Non-HP Yellow, and Fuser Kit. Each section provides detailed information including status, approximate pages remaining, serial number, pages printed, first install date, and last use date. The Non-HP Yellow Cartridge section is highlighted in yellow.

Black Cartridge	
Status:	OK
Approximate Pages Remaining: †	>4100
Serial Number:	100729312
Pages printed with this supply:*	7
First Install Date:	20220804
Last Use Date:	20220922

Non-HP Yellow Cartridge ††	
Order 508A (CF362A)	100%*
Status:	OK
Approximate Pages Remaining: †	>3750
Serial Number:	100798195
Pages printed with this supply:*	9
First Install Date:	20220804
Last Use Date:	20220922

Fuser Kit	
Order 110V-B5L35A, 220V-B5L36A	100%*
Status:	OK

Toner Collection Unit

Order B5L37A	Status: OK
--------------	------------

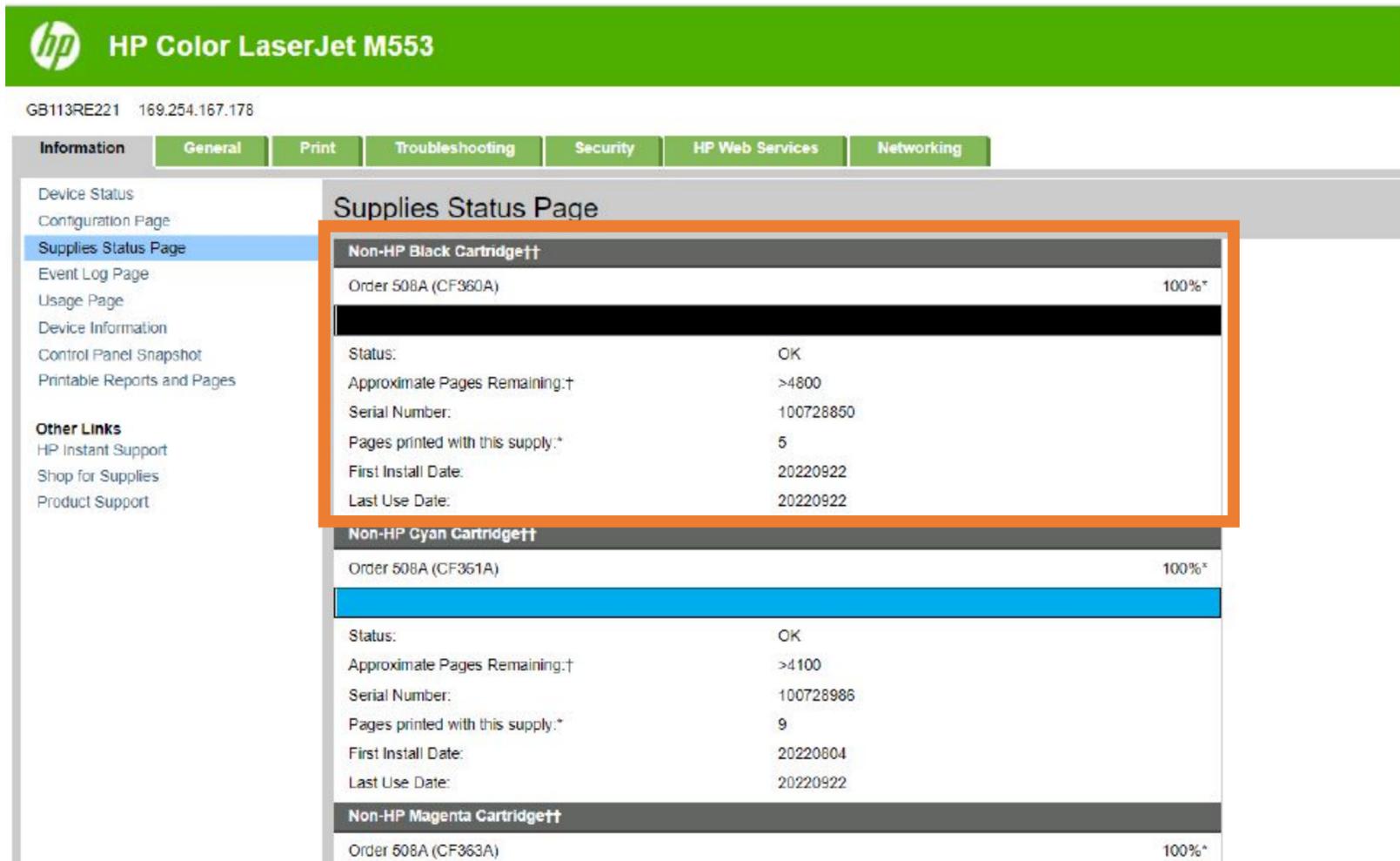
Ordering Information
HP supplies can be ordered on the internet (<http://www.suresupply.com>), on-line through your product software, or by calling an authorized reseller.

Return & Recycling
Please return your genuine HP supplies for recycling to HP. For more information, please visit us at <http://www.hp.com/go/recycle>

Note
* Approximate only; varies depending on types of documents printed and other factors.
† HP uses the first 20% of cartridge use to estimate pages remaining.
†† A non-HP supply has been installed. If you believe you purchased a genuine HP supply, visit us at <http://www.hp.com/go/anticoounterfeit>. Any printer repair required as a result of using non-HP supplies is not covered under warranty.

Setting-up The Printers - HP LaserJet Enterprise M553dn- Reports

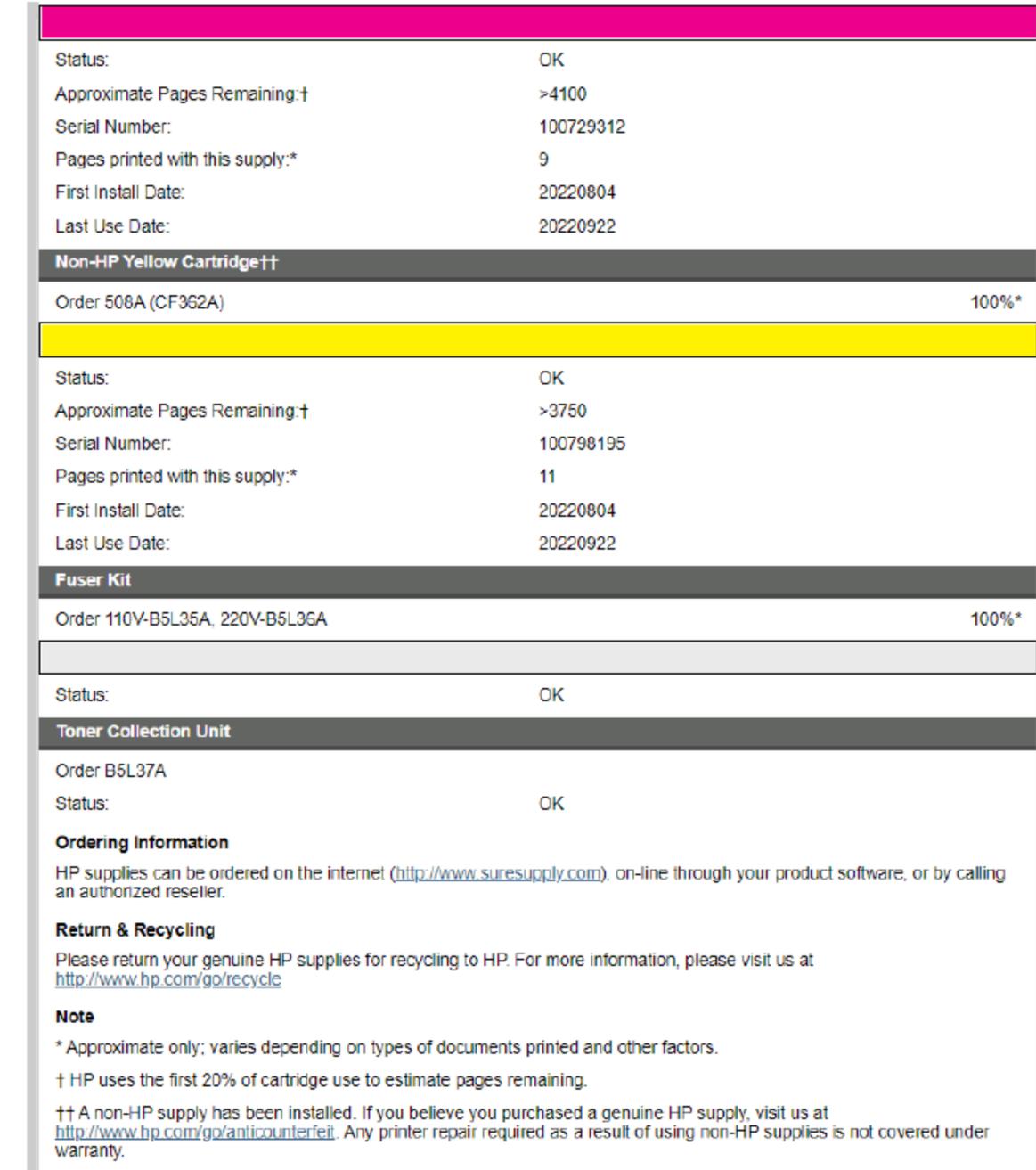
- B73 <- CF360A-N-V2



The screenshot shows the HP Color LaserJet M553 web interface. The 'Supplies Status Page' is selected in the left-hand navigation menu. The main content area displays the status of four non-HP cartridges: Black, Cyan, Magenta, and Yellow. The Black cartridge (Order 508A, CF360A) is highlighted with an orange border. The Cyan cartridge (Order 508A, CF361A) is highlighted with a blue border. The Magenta cartridge (Order 508A, CF363A) and Yellow cartridge (Order 508A, CF362A) are also visible. Each cartridge entry shows its status (OK), approximate pages remaining, serial number, pages printed, first install date, and last use date.

Cartridge Type	Order Number	Status	Approximate Pages Remaining	Serial Number	Pages Printed	First Install Date	Last Use Date
Non-HP Black Cartridge	Order 508A (CF360A)	OK	>4800	100728850	5	20220922	20220922
Non-HP Cyan Cartridge	Order 508A (CF361A)	OK	>4100	100728988	9	20220804	20220922
Non-HP Magenta Cartridge	Order 508A (CF363A)	OK	>4100	100729312	9	20220804	20220922
Non-HP Yellow Cartridge	Order 508A (CF362A)	OK	>3750	100798195	11	20220804	20220922

Supplies Status Page



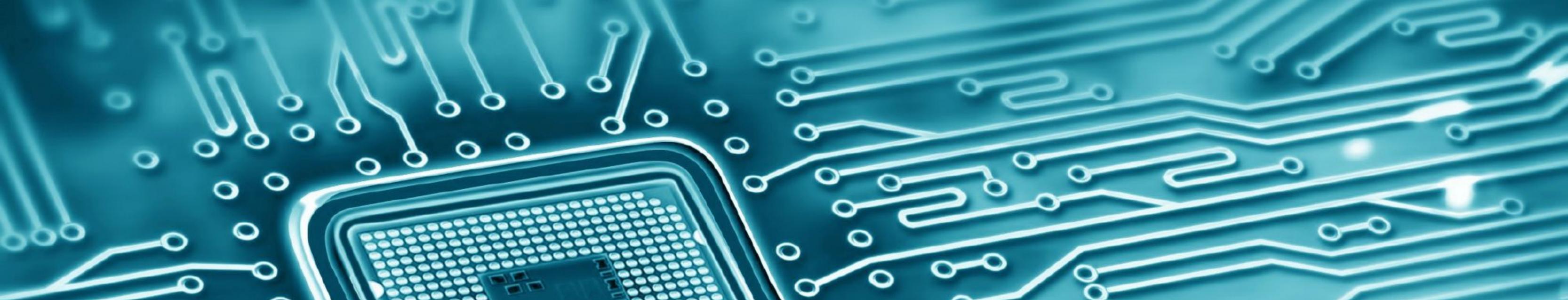
This block provides a detailed view of the cartridge status reports from the screenshot. It includes the following sections:

- Non-HP Black Cartridge** (Order 508A, CF360A): Status OK, Approximate Pages Remaining >4100, Serial Number 100729312, Pages printed with this supply: 9, First Install Date 20220804, Last Use Date 20220922.
- Non-HP Yellow Cartridge** (Order 508A, CF362A): Status OK, Approximate Pages Remaining >3750, Serial Number 100798195, Pages printed with this supply: 11, First Install Date 20220804, Last Use Date 20220922.
- Fuser Kit** (Order 110V-B5L35A, 220V-B5L36A): Status OK.
- Toner Collection Unit** (Order B5L37A): Status OK.

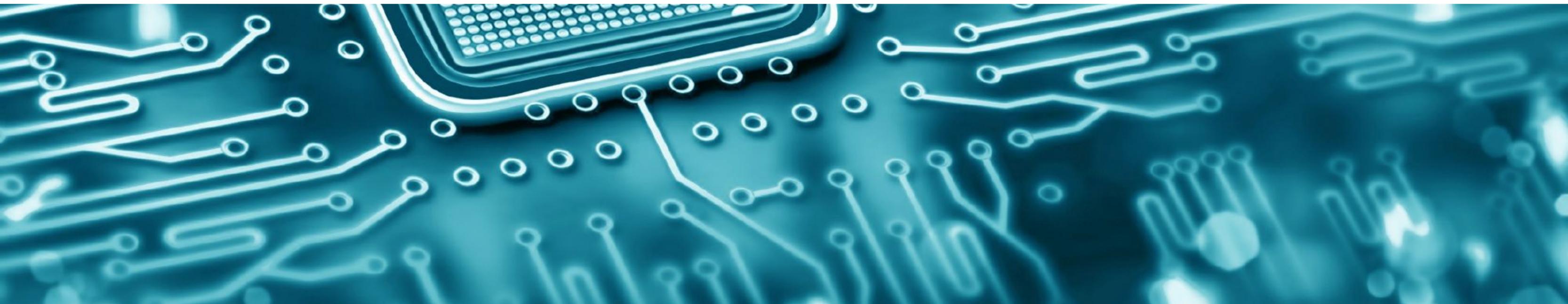
Ordering Information
HP supplies can be ordered on the internet (<http://www.suresupply.com>), on-line through your product software, or by calling an authorized reseller.

Return & Recycling
Please return your genuine HP supplies for recycling to HP. For more information, please visit us at <http://www.hp.com/go/recycle>

Note
* Approximate only; varies depending on types of documents printed and other factors.
† HP uses the first 20% of cartridge use to estimate pages remaining.
‡ A non-HP supply has been installed. If you believe you purchased a genuine HP supply, visit us at <http://www.hp.com/go/anticoncounterfeit>. Any printer repair required as a result of using non-HP supplies is not covered under warranty.



TESTING CHIP SAMPLES WITH UNISMART DEVICE



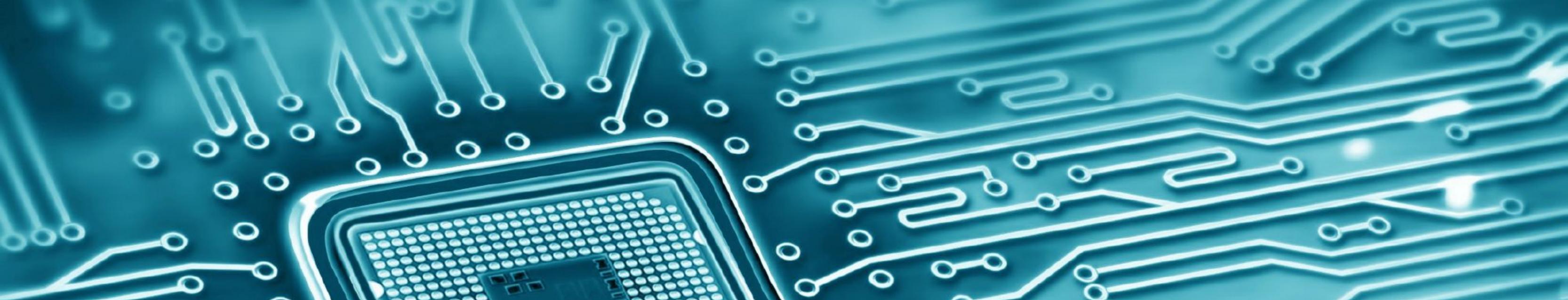
Testing Chip Samples with Unismart Device

- For this test, the Unismart has been set to its home screen
- The jig holder has been put in position and its button pressed to get the status of the samples
- The Apex Unismart controller recognized the chips found on counterfeit cartridges as Apex chips.

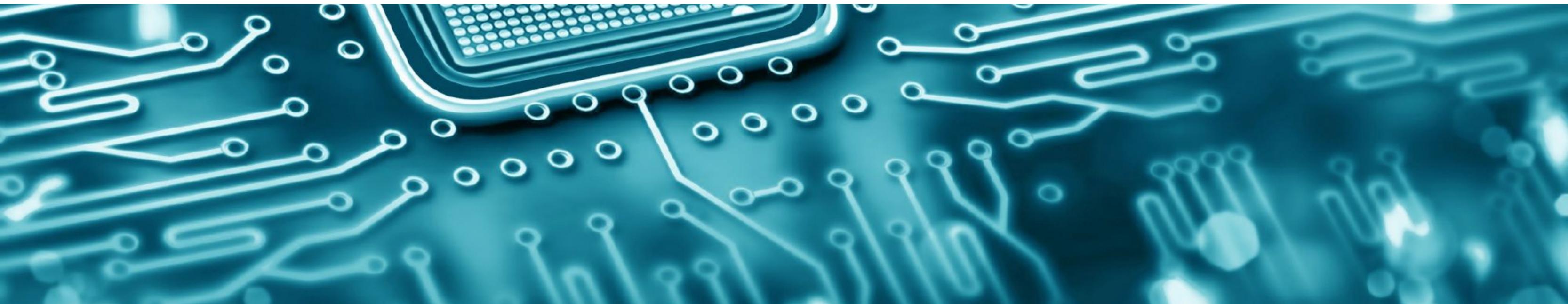
Printer	M402dn			M553dn		
Cartridges	APUS_CF226X	Sample 10	Sample 9	Sample 1064	NT-CH363FM	APUS_CF361A
Origin		Found on counterfeit cartridge from Germany	Found on counterfeit cartridge from Germany	Found on counterfeit cartridge seized in China	Made by Ninestar	
Brand		HP		HP	HP	
Product		CF226X-V2		CF361A-V2	CF363A-N-V2	
Color		BK		C	M	
Region		WW		WW	WW	
Apex credits		35		36	36	
Chip type		APEX Chip		APEX Chip	APEX Chip	
Chip Status		Chip used		Chip used	Chip used	
Series		Laser Jet Pro M402dn		Laser Jet Enterprise M553dn	Laser Jet Enterprise M553dn	
PCB		B65		B64	B64	
Type		Laserjet		Laserjet	Laserjet	
JIG		H20		H20	H20	
Yield		9K		5K	5K	
OEM credits						
Page/Times						
Ink/toner						
Status	Operation failed		Operation failed			Operation failed

Initial Display Message - Results summary on Unismart screen





DECAPPING CHIP SAMPLES



Decapping Chip Samples

- Samples have been depackaged and their top layers have been optically scanned
- Several samples are embedding two Integrated Circuits
- In total, four different ICs could be seen for three configurations only
- 3/4 ICs have SCC marks, which shows a common origin. The last chip with the die mark UM590 I (written in mirror) could not be identified

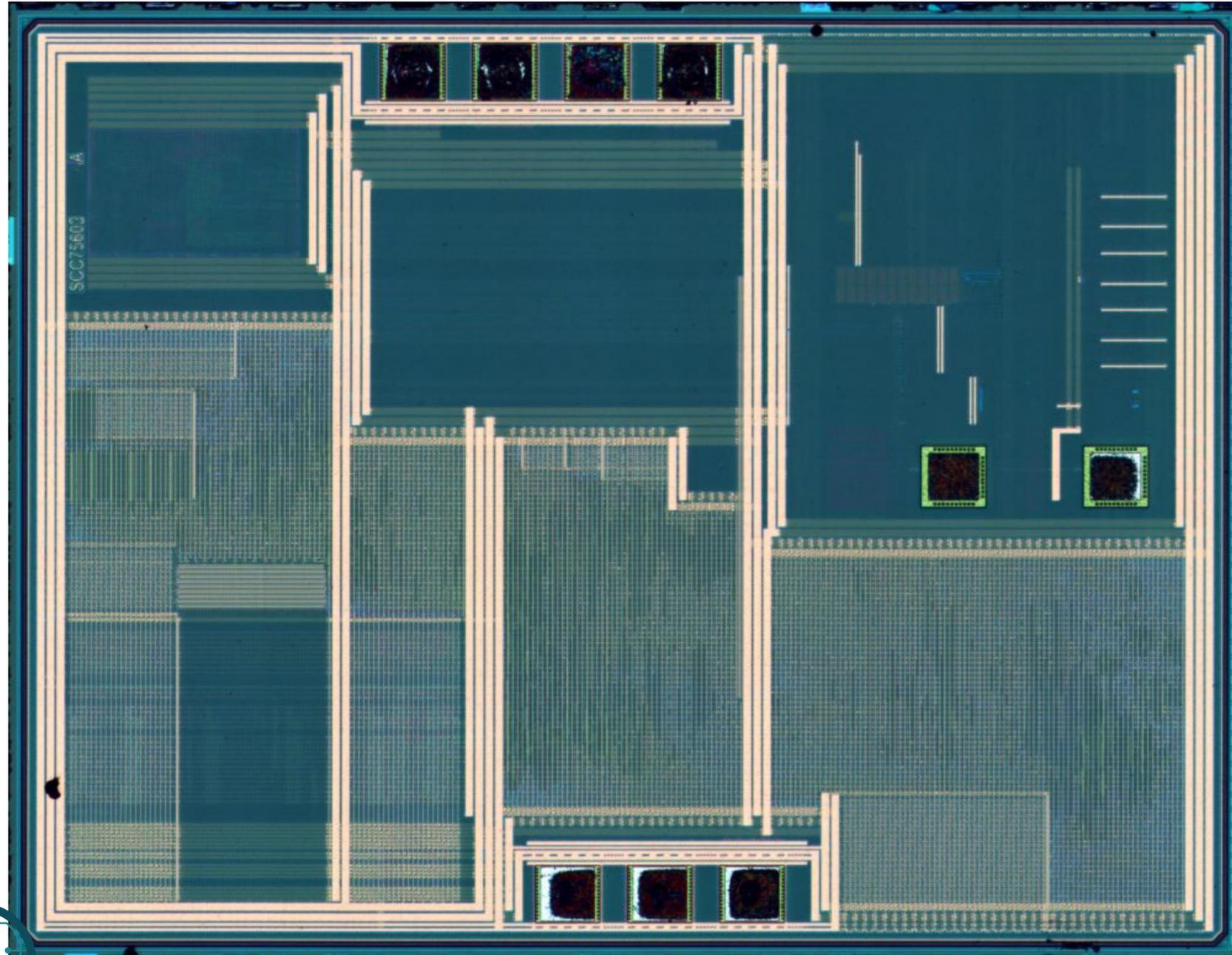
- Samples 1 to 7 had only one IC
- Samples 8 to 11 had two ICs. The origin of the second IC is unknown.

Cartridges	Chip 1		Chip 2
	Die Mark 1	Die Mark 2	Die Mark
1_Chip_Ninestar_NT_CHFM_Type_AA	SCC75603	—	—
2_Chip_Apus_CF361A_Type_AB	Sec-Chlp UM5012V20160715	SCC2016 HII790FS	—
3_Chip_Apus_CF226X_Type_AB	Sec-Chlp UM5012V20160715	SCC2016 HII790FS	—
4_Chip_Unismart_Blank_B73	SCC75603	—	—
5_Chip_Counterfeit_CF226X_Sample_9_Type_AB	Sec-Chlp UM5012V20160715	SCC2016 HII790FS	—
6_Chip_Counterfeit_CF226X_Sample_10_Type_AB	SCC75603	—	—
7_Chip_Counterfeit_CF361A_Type_AA	SCC75603	—	—
8_Chip_APEX_W1106A12_V3	SCC75605	SEC-CHIP SCC232V20190529	UM590 I
9_Chip_APEX_W1106AN22_V6	SCC75605	SEC-CHIP SCC232V20190529	UM590 I
10_Chip_Ninestar_W1106AN21_V4	SCC75605	SEC-CHIP SCC232V20190529	UM590 I
11_Chip_Counterfeit_W1106A12_V3	SCC75605	SEC-CHIP SCC232V20190529	UM590 I

Depackaging - Visible Die Marks



Decapping Chip Samples - SCC75603



Top Optical Imagery

1_Chip Ninestar_NT_CHFM_Type_AA

4_Chip UniSmart_Blank_B73

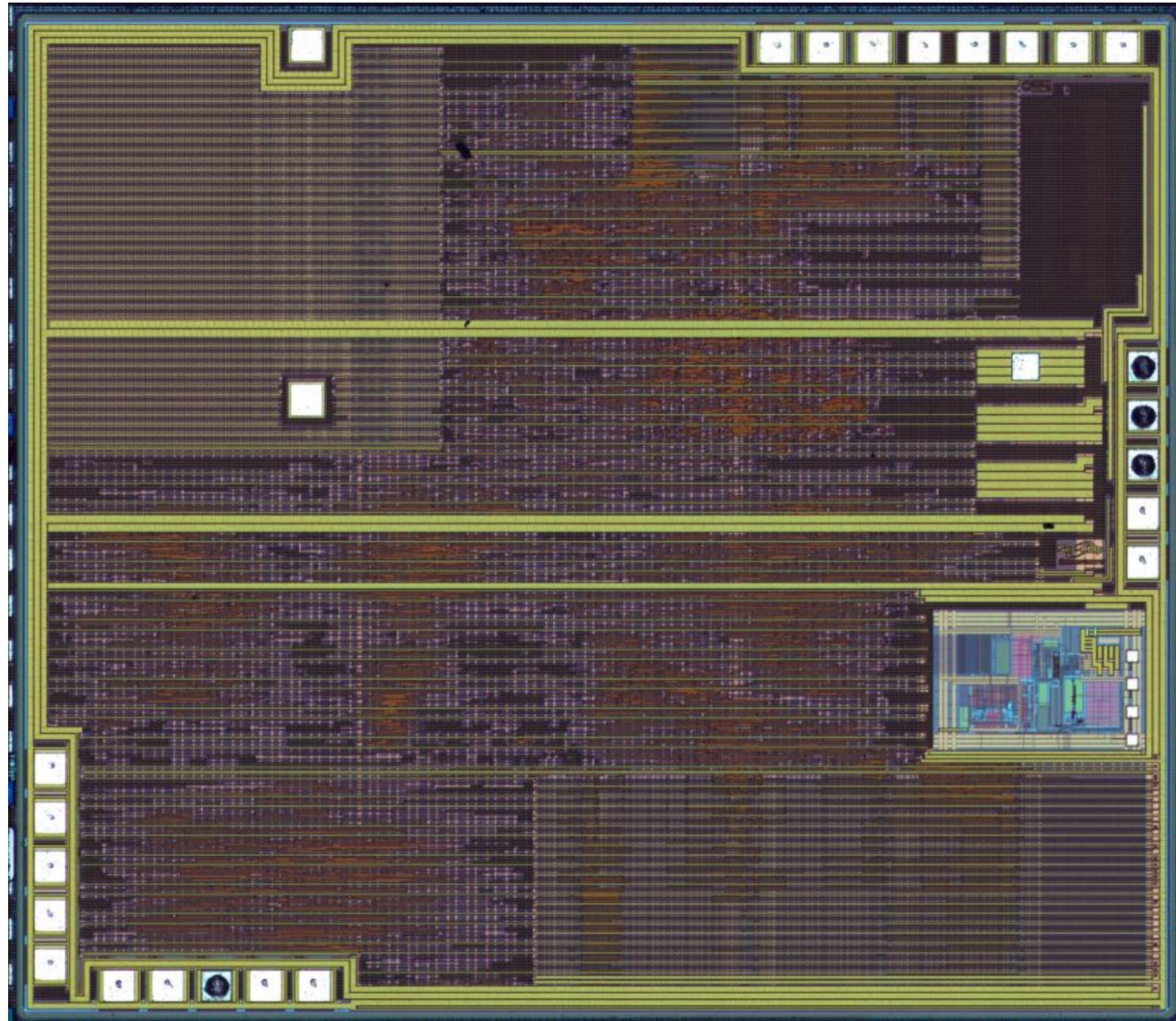
6_Chip Counterfeit_CF226X_Sample_10_Type_AB

7_Chip Counterfeit_CF361A_Type_AA



Die Marks - Close-up

Decapping Chip Samples - Sec-Chip UM5012V20160715

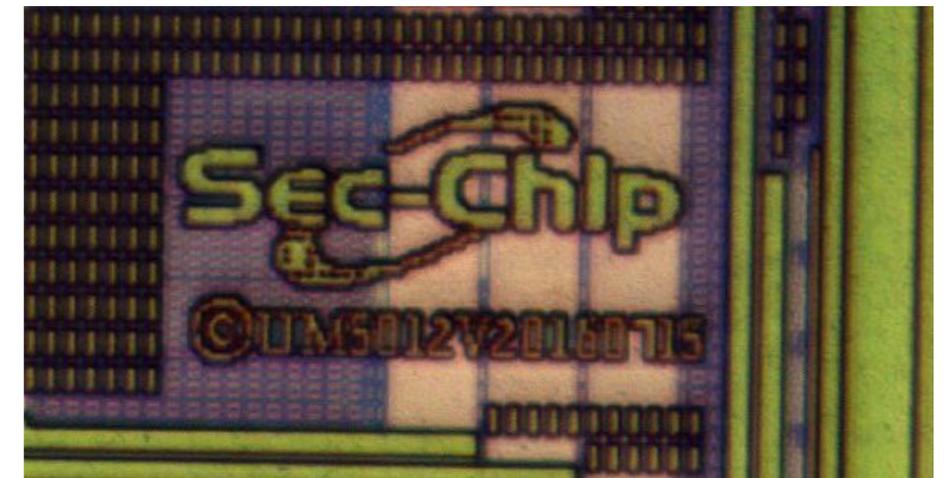


Top Optical Imagery

2_Chip APUS_CF361A_Type_AB

3_Chip APUS_CF226X_Type_AB

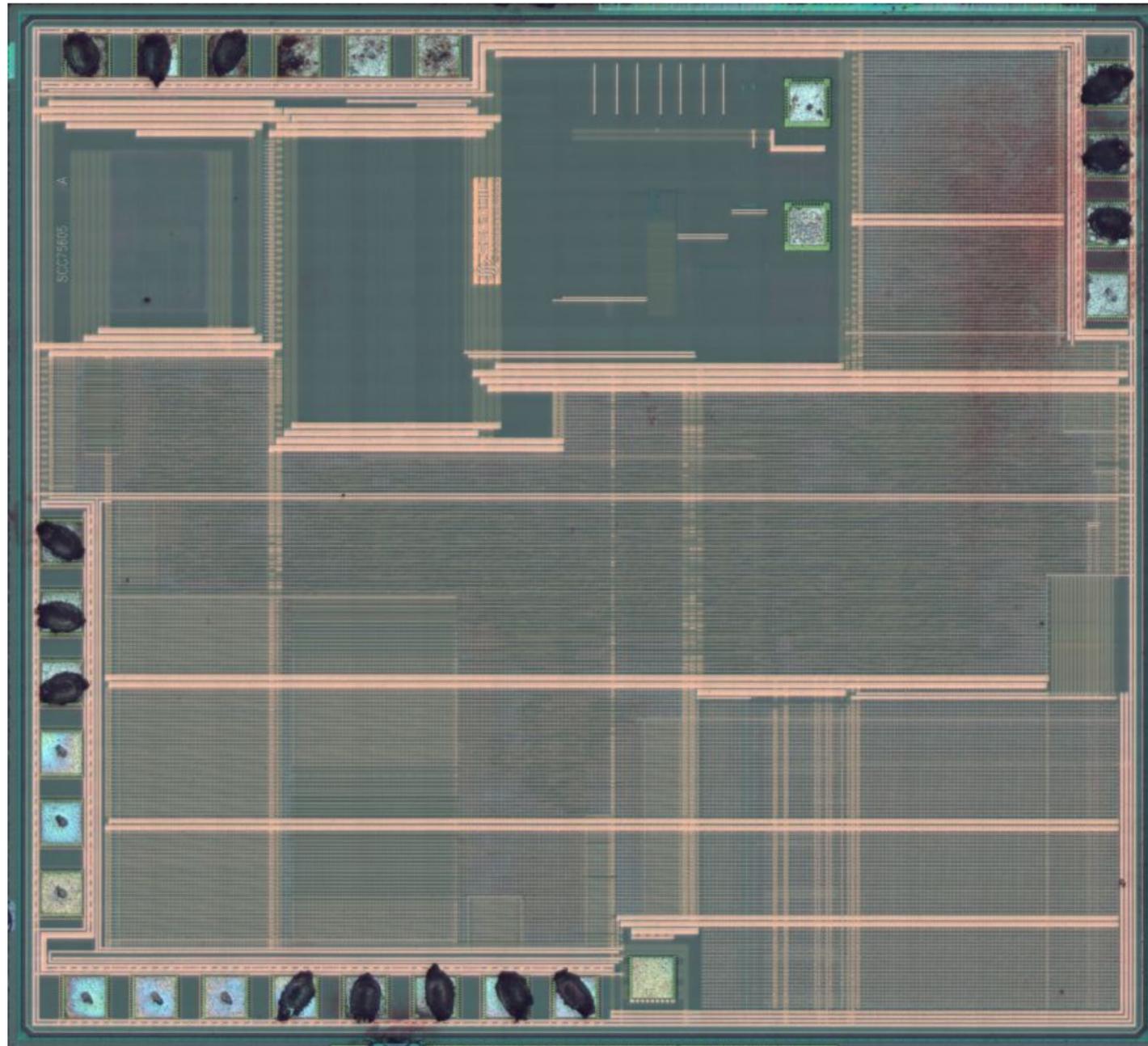
5_Chip Counterfeit_CF226X_Sample_9_Type_AB



Die Marks - Close-up



Decapping Chip Samples - SCC75605



Top Optical Imagery

8_Chip APEX_W1106A12_V3

9_Chip APEX_W1106AN22_V6

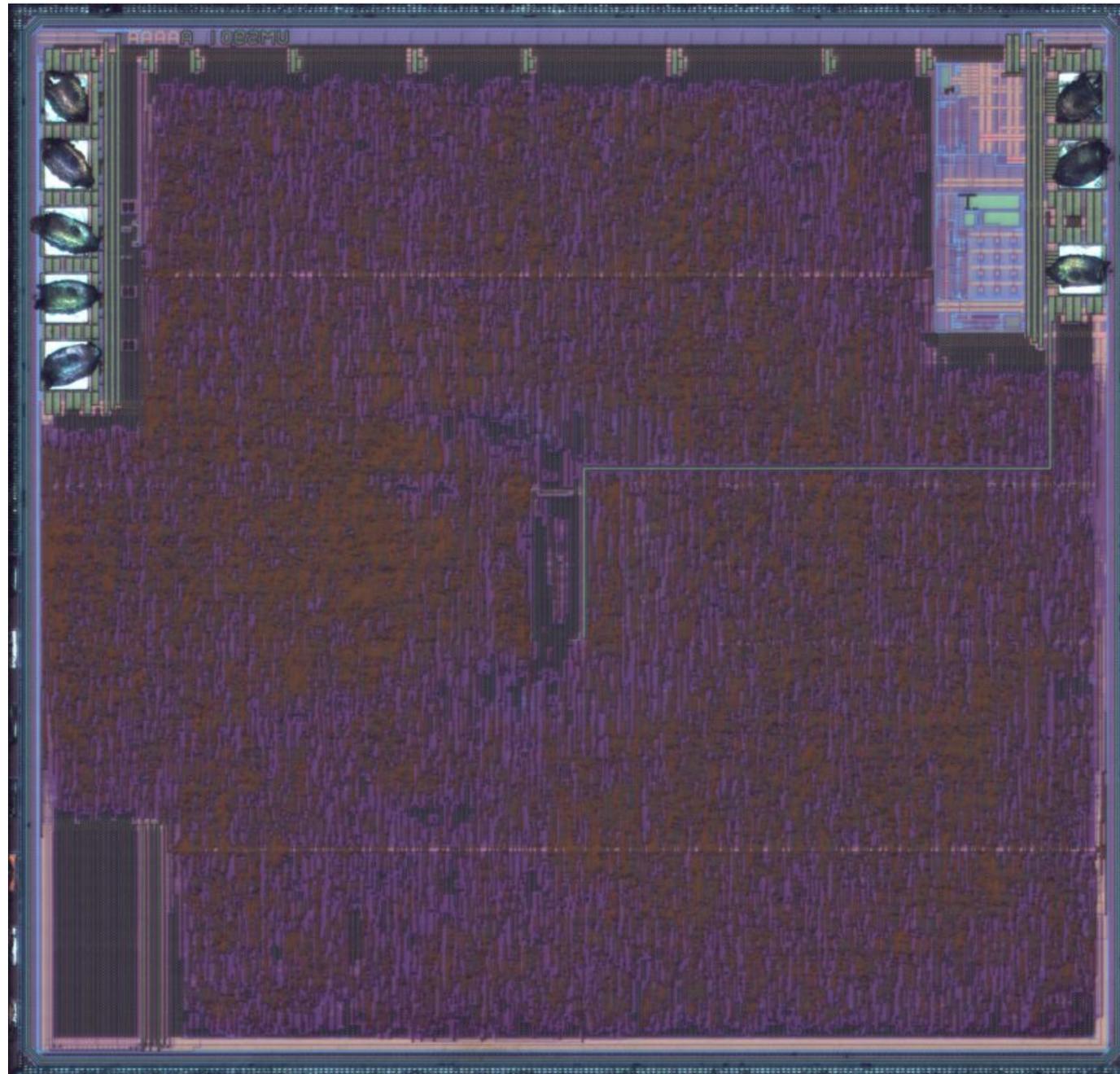
10_Chip NineStar_W1106AN21_V4

11_Chip Counterfeit_W1106A12_V3



Die Marks - Close-up

Decapping Chip Samples - UM590 I



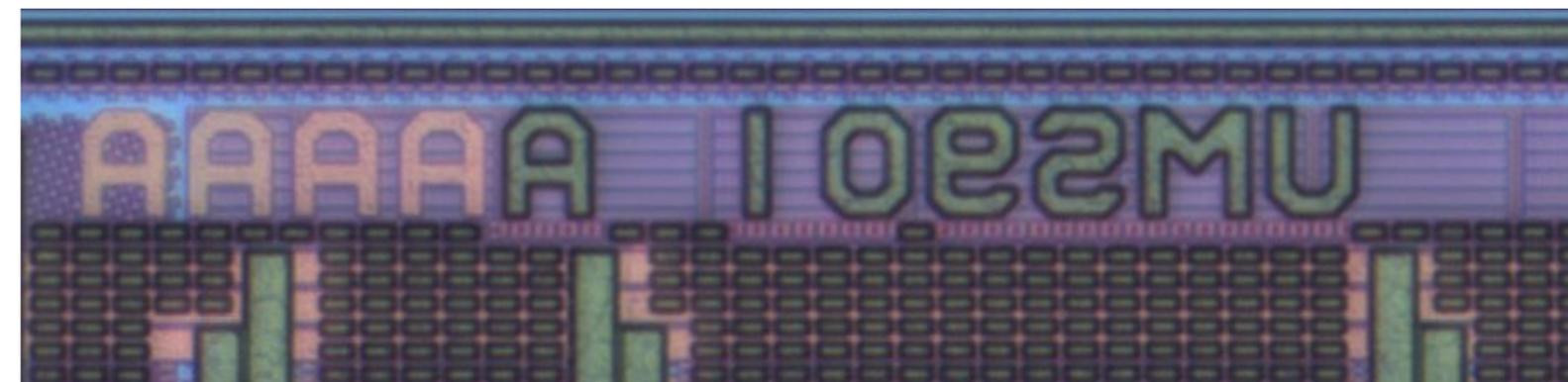
Top Optical Imagery

8_Chip APEX_W1106A12_V3

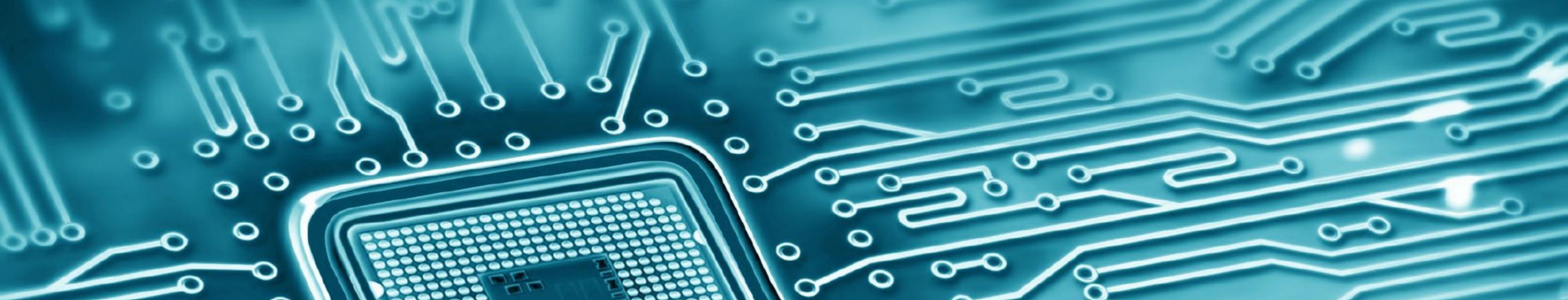
9_Chip APEX_W1106AN22_V6

10_Chip NineStar_W1106AN21_V4

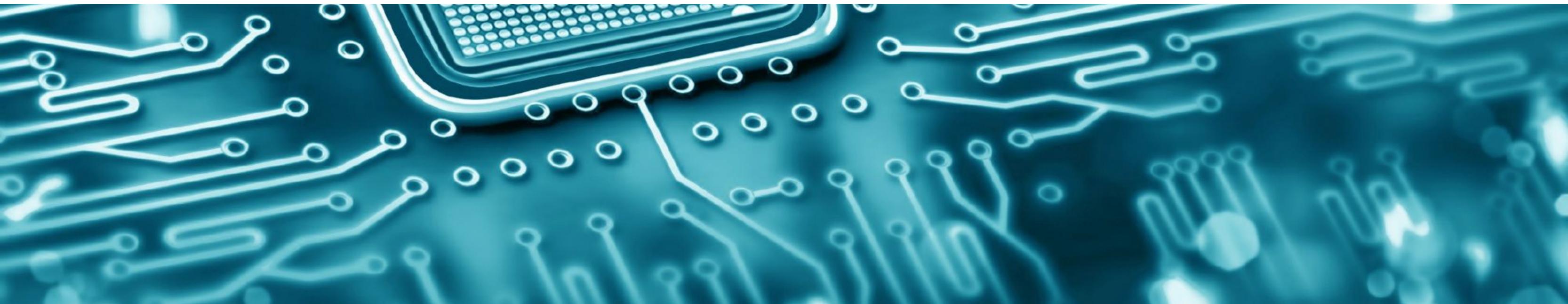
11_Chip Counterfeit_W1106A12_V3



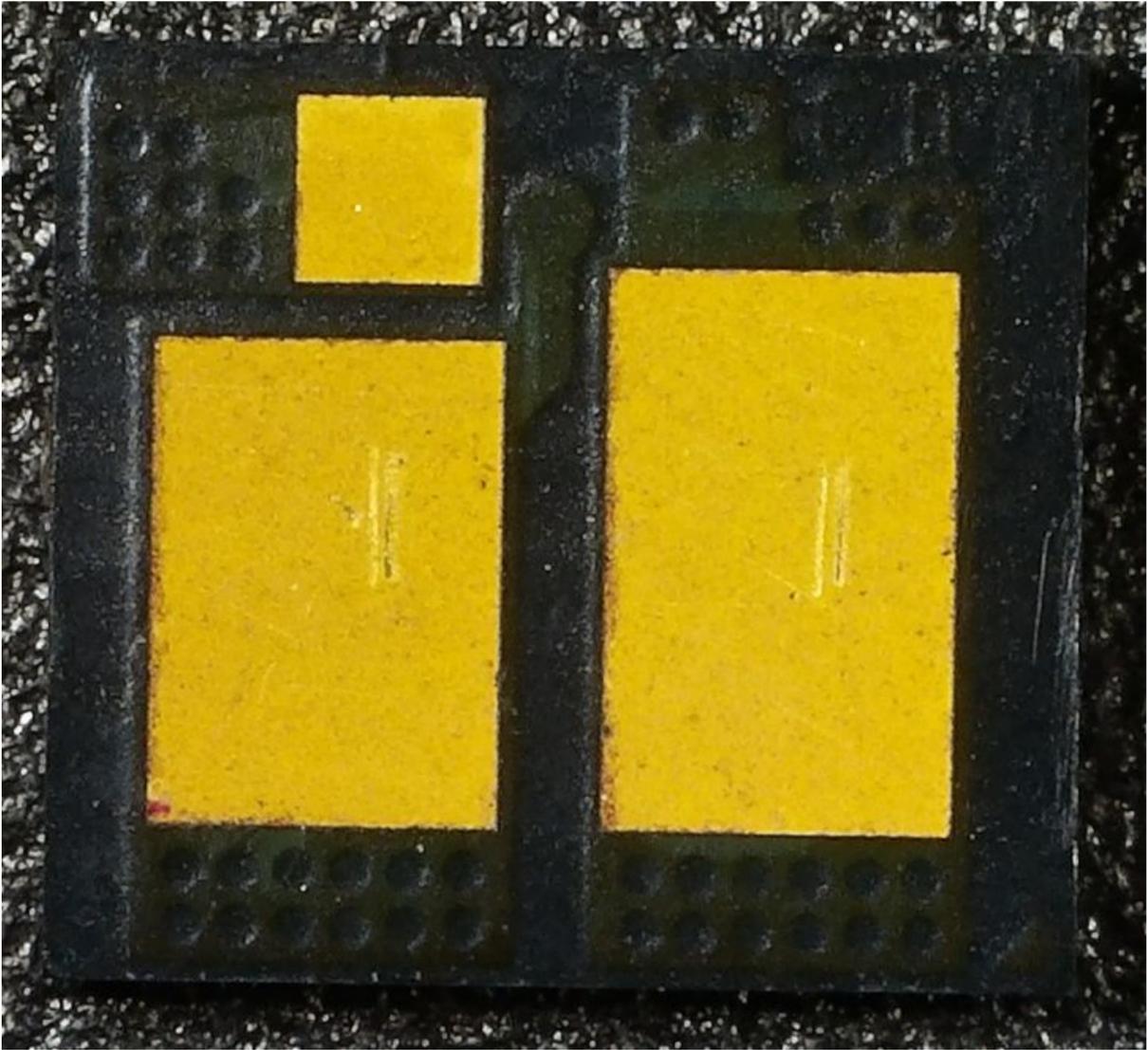
Die Marks - Close-up



ANNEX A - SAMPLE PICTURES

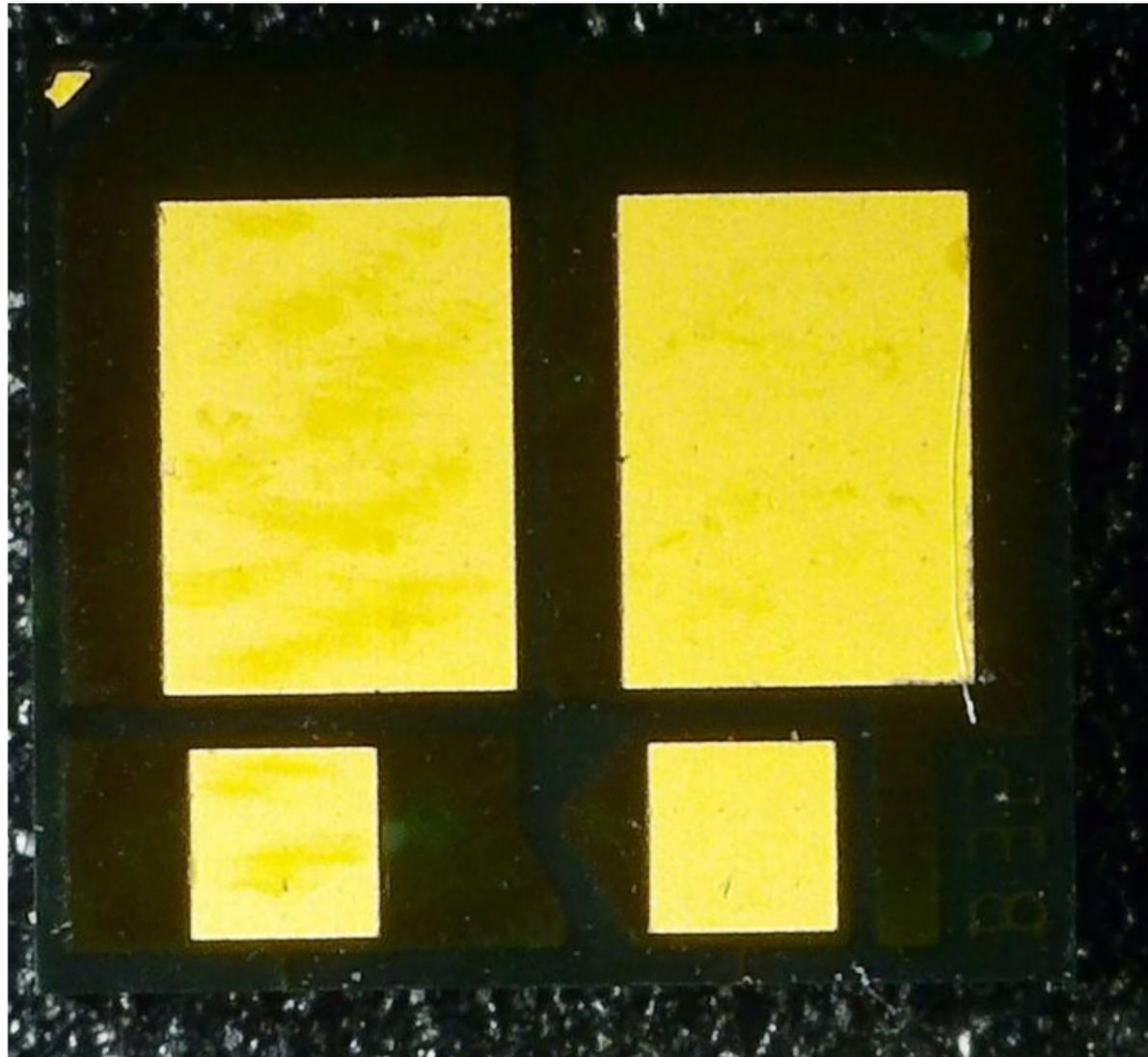


1. Ninestar NT_CHFM Type_AA



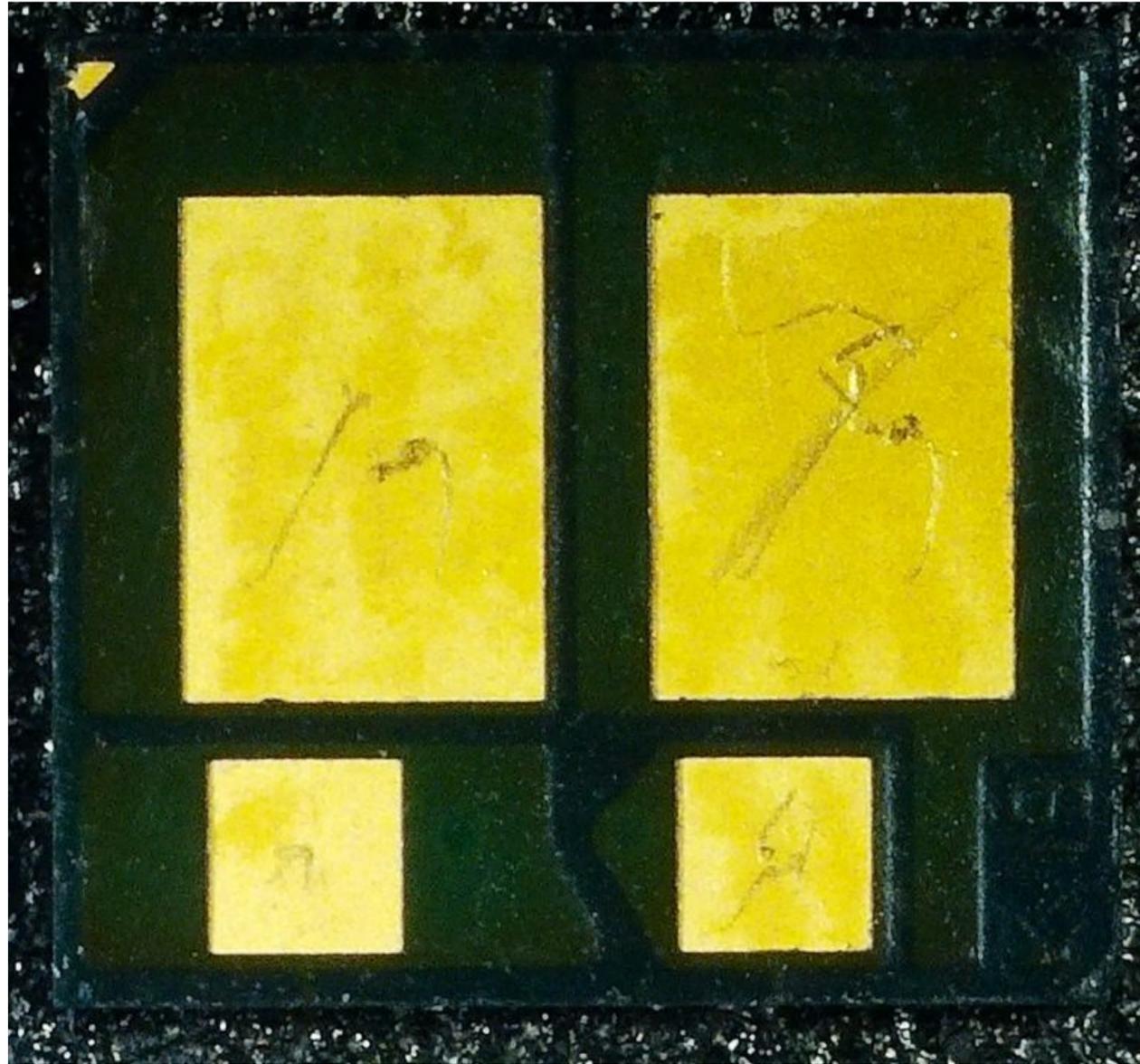
Sample Frontside & Backside

2. Apus CF361A Type AB



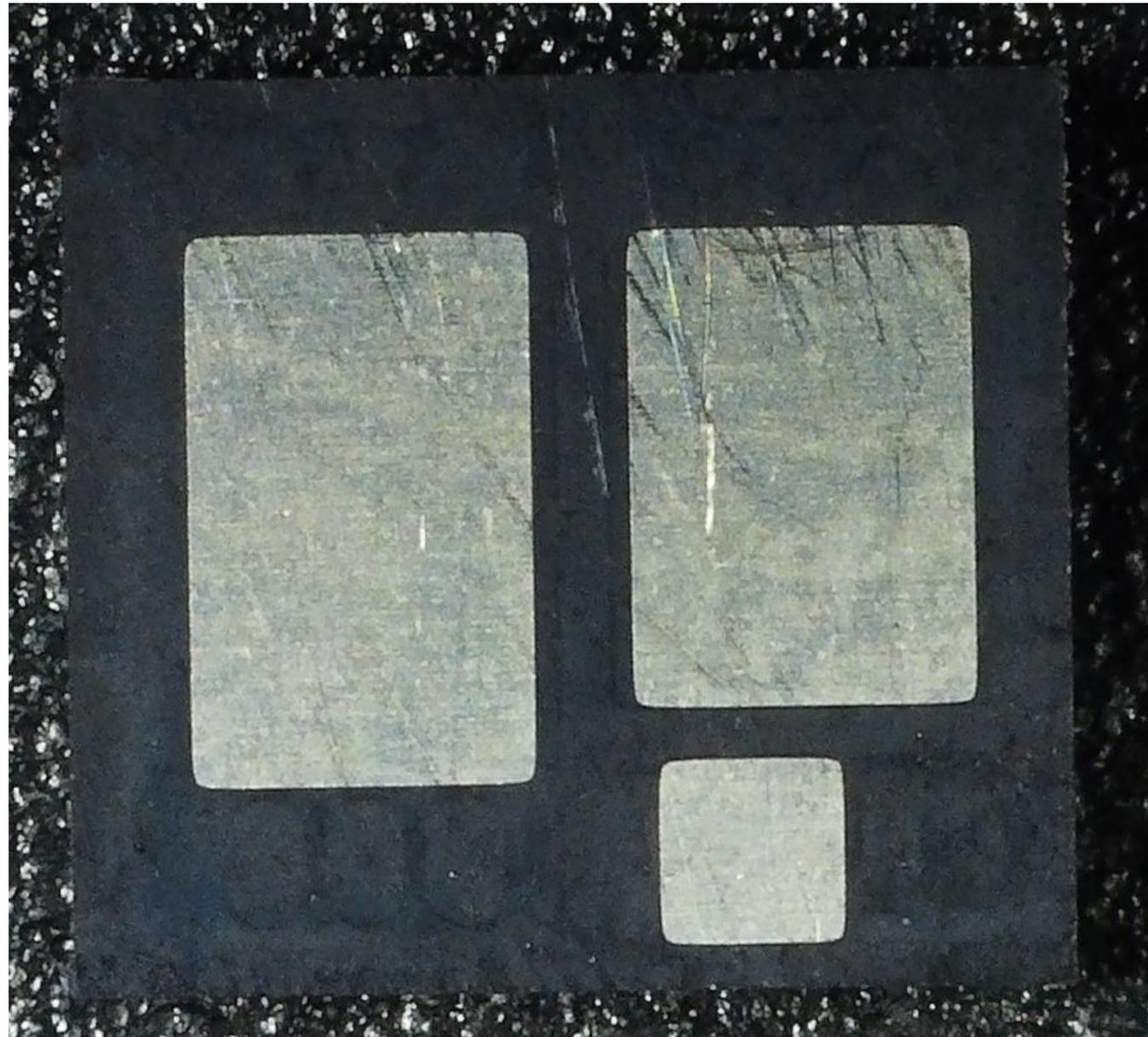
Sample Frontside & Backside

3. Apus CF226X Type AB



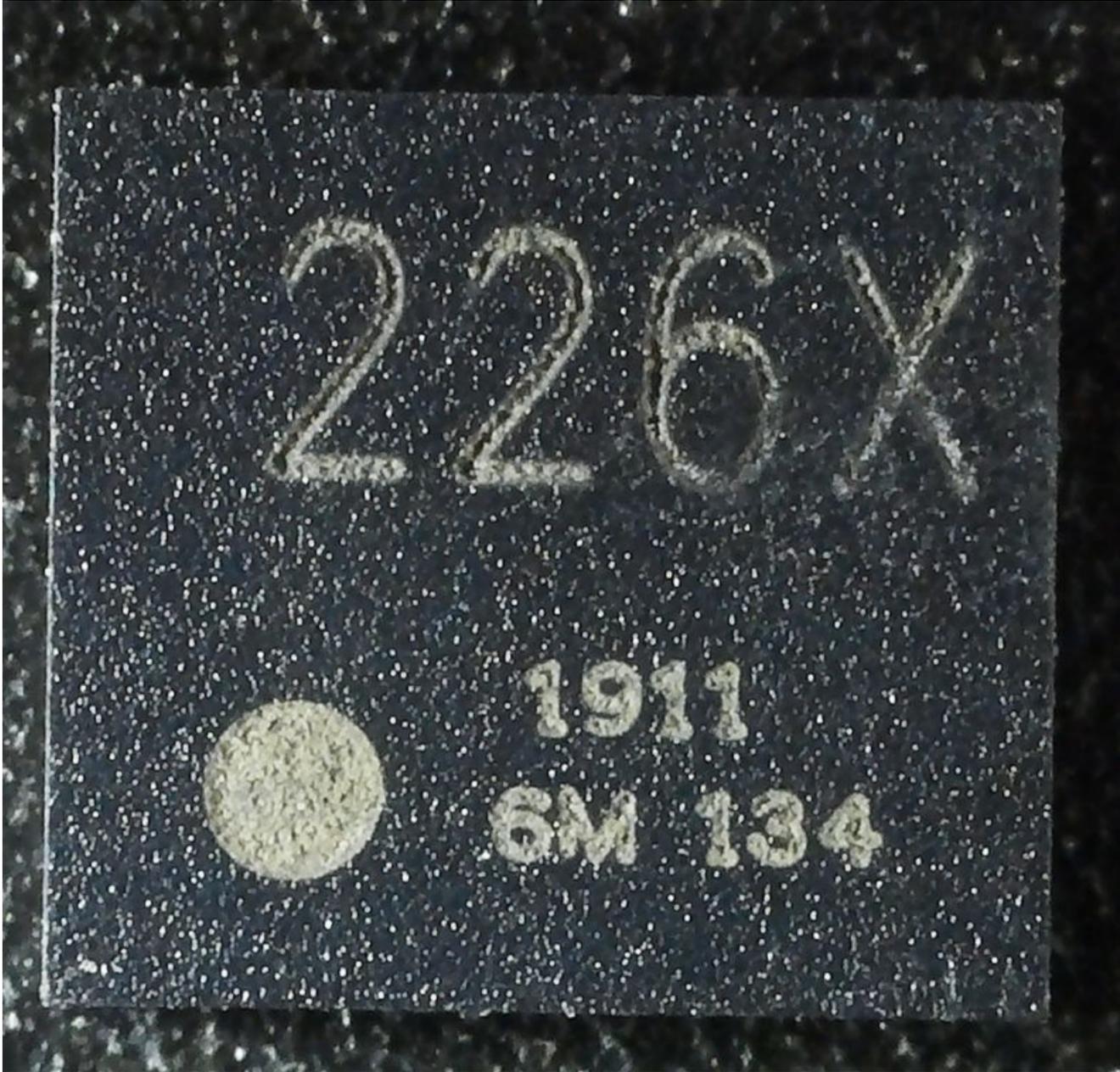
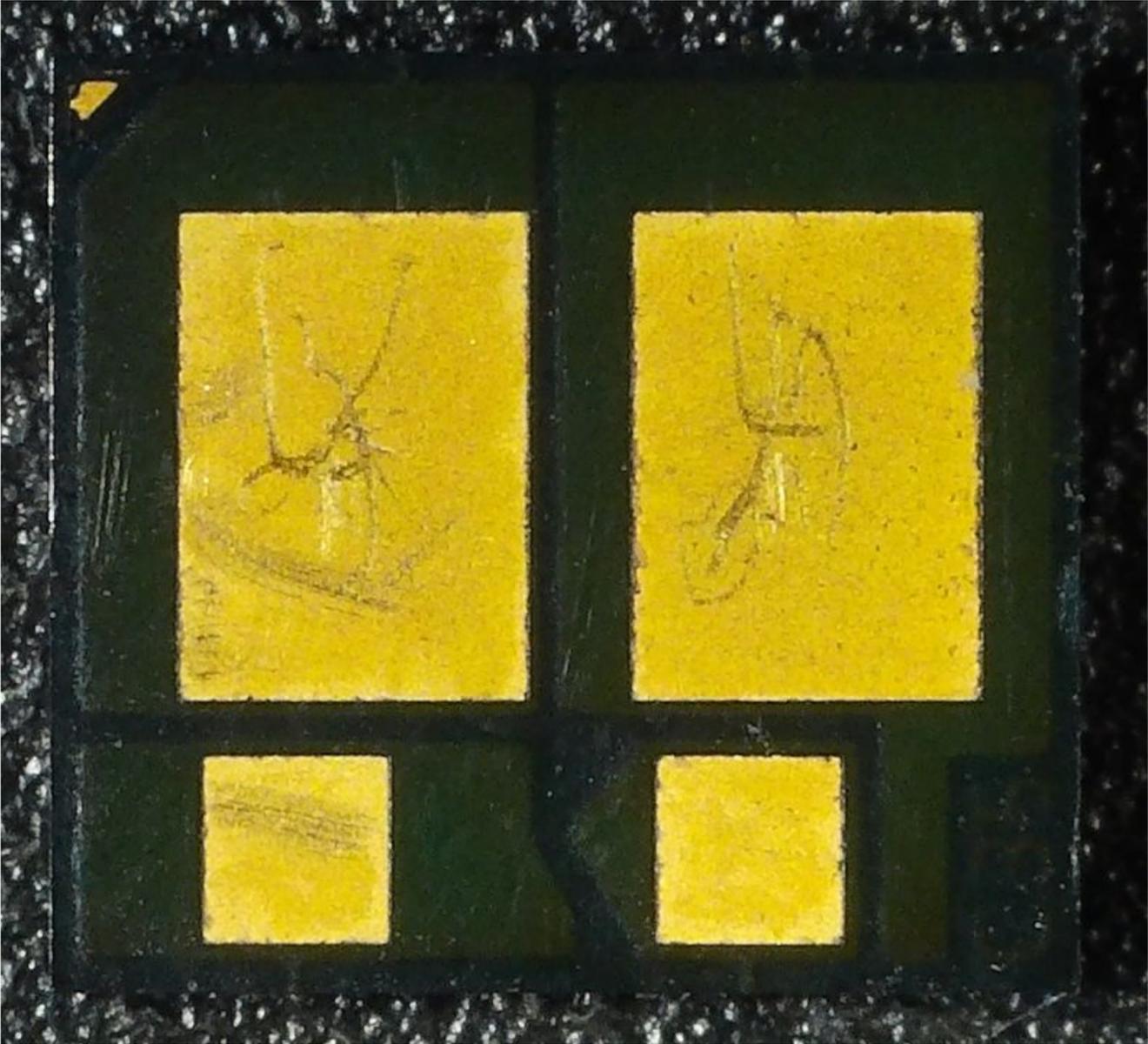
Sample Frontside & Backside

4. Unismart Blank B73



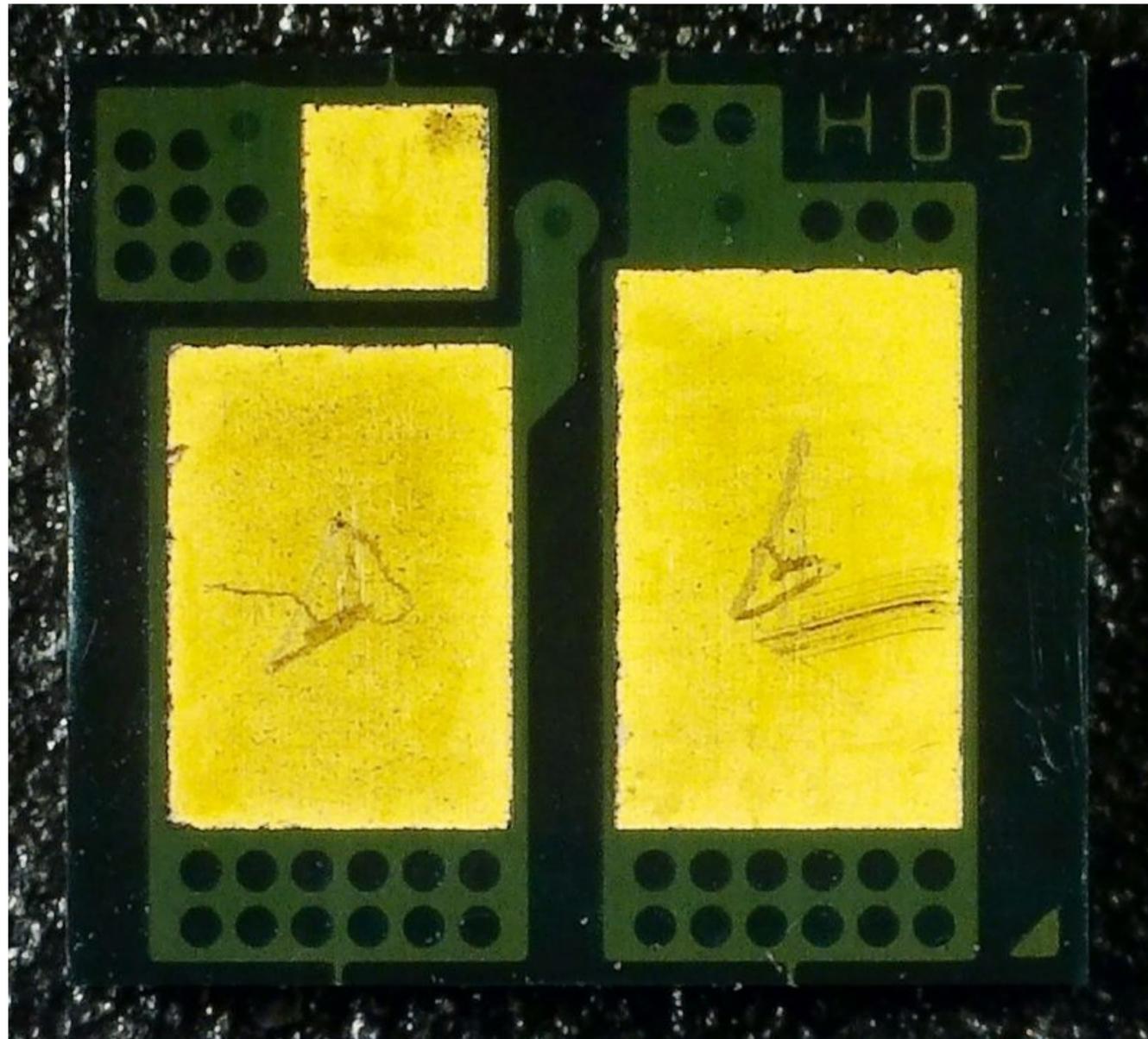
Sample Frontside & Backside

5. Counterfeit CF226X - Sample 9 - Type AB



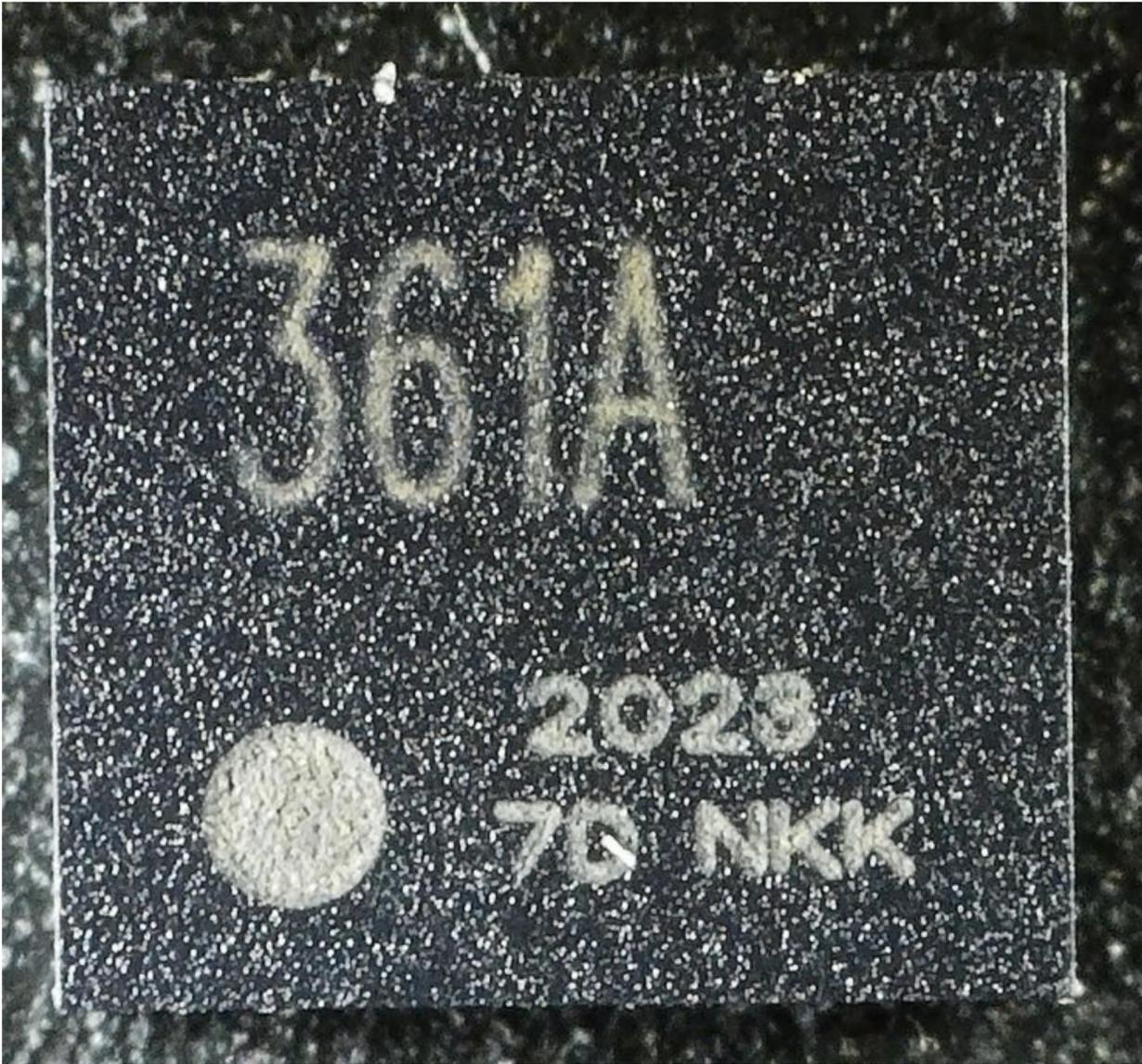
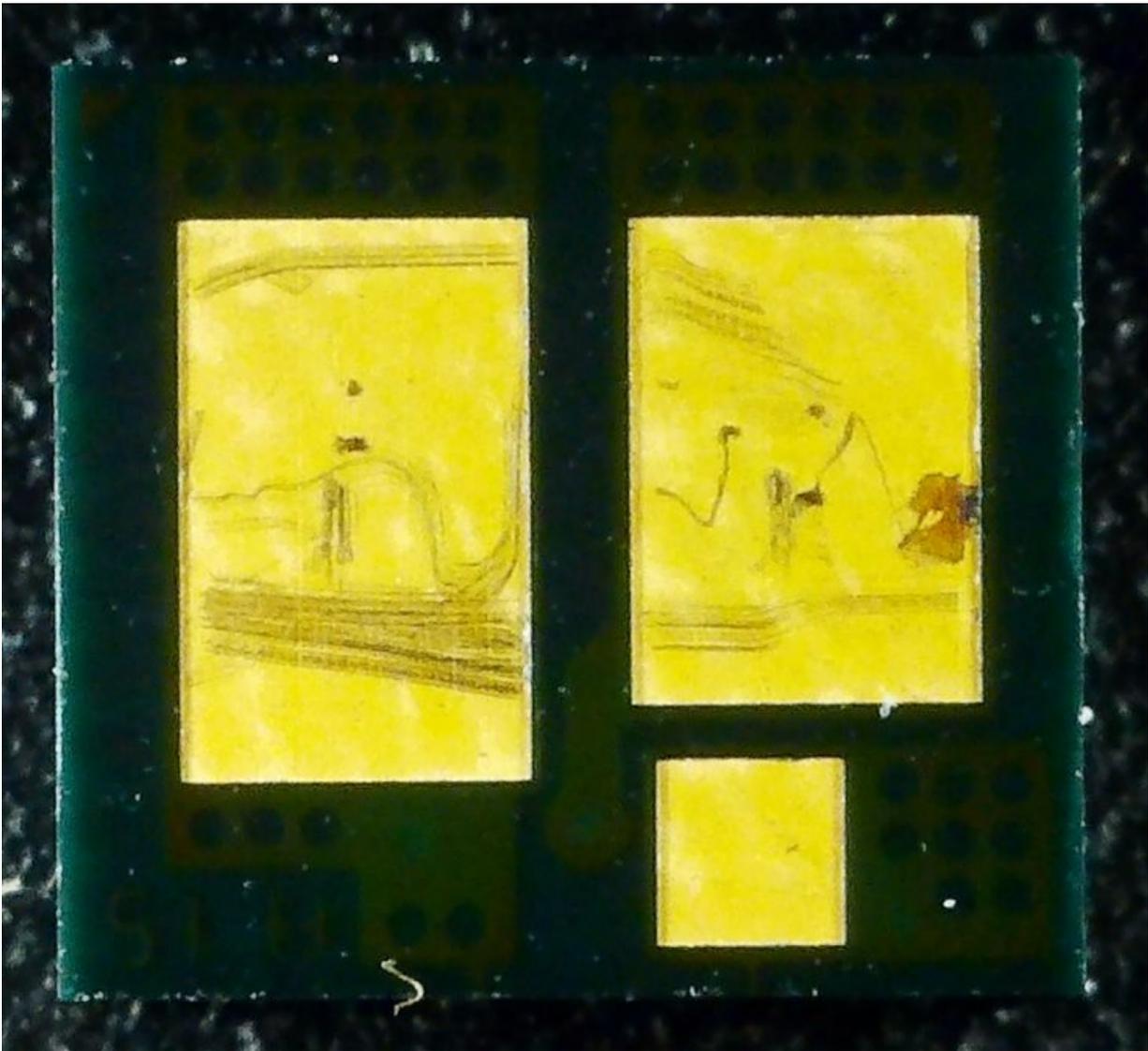
Sample Frontside & Backside

6. Counterfeit CF226X - Sample 10 - Type AB



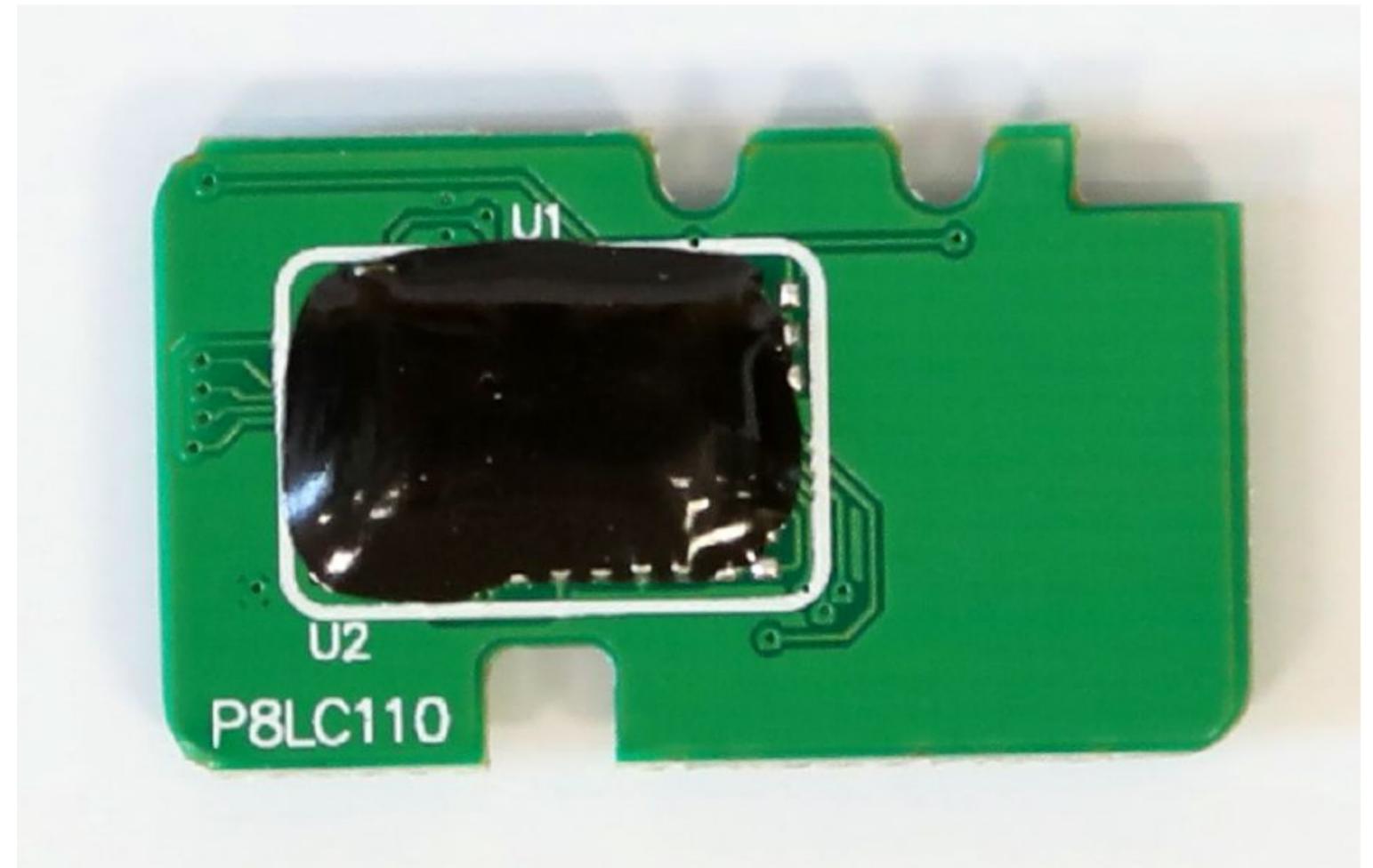
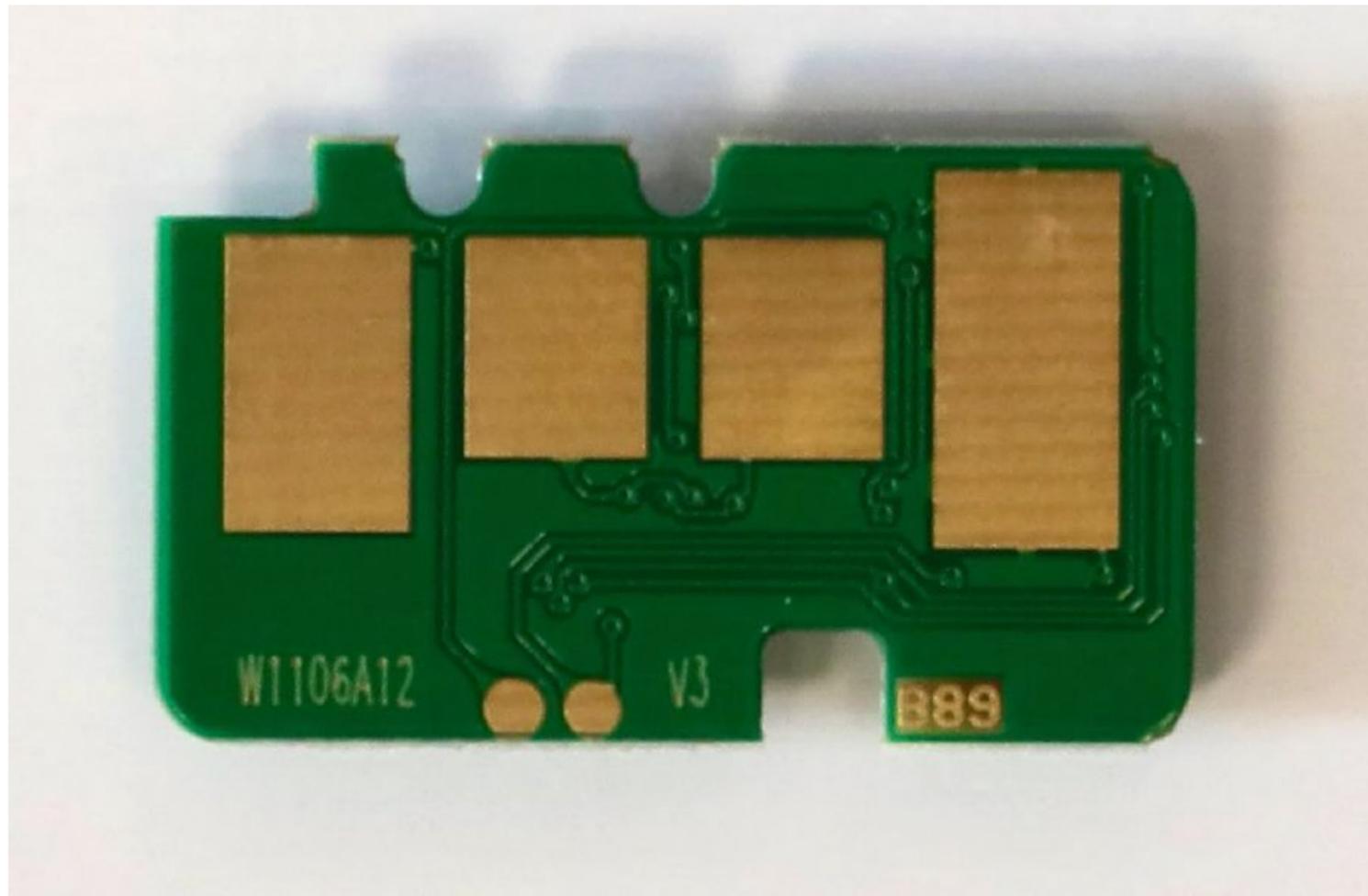
Sample Frontside & Backside

7. Counterfeit CF361A - Type AA



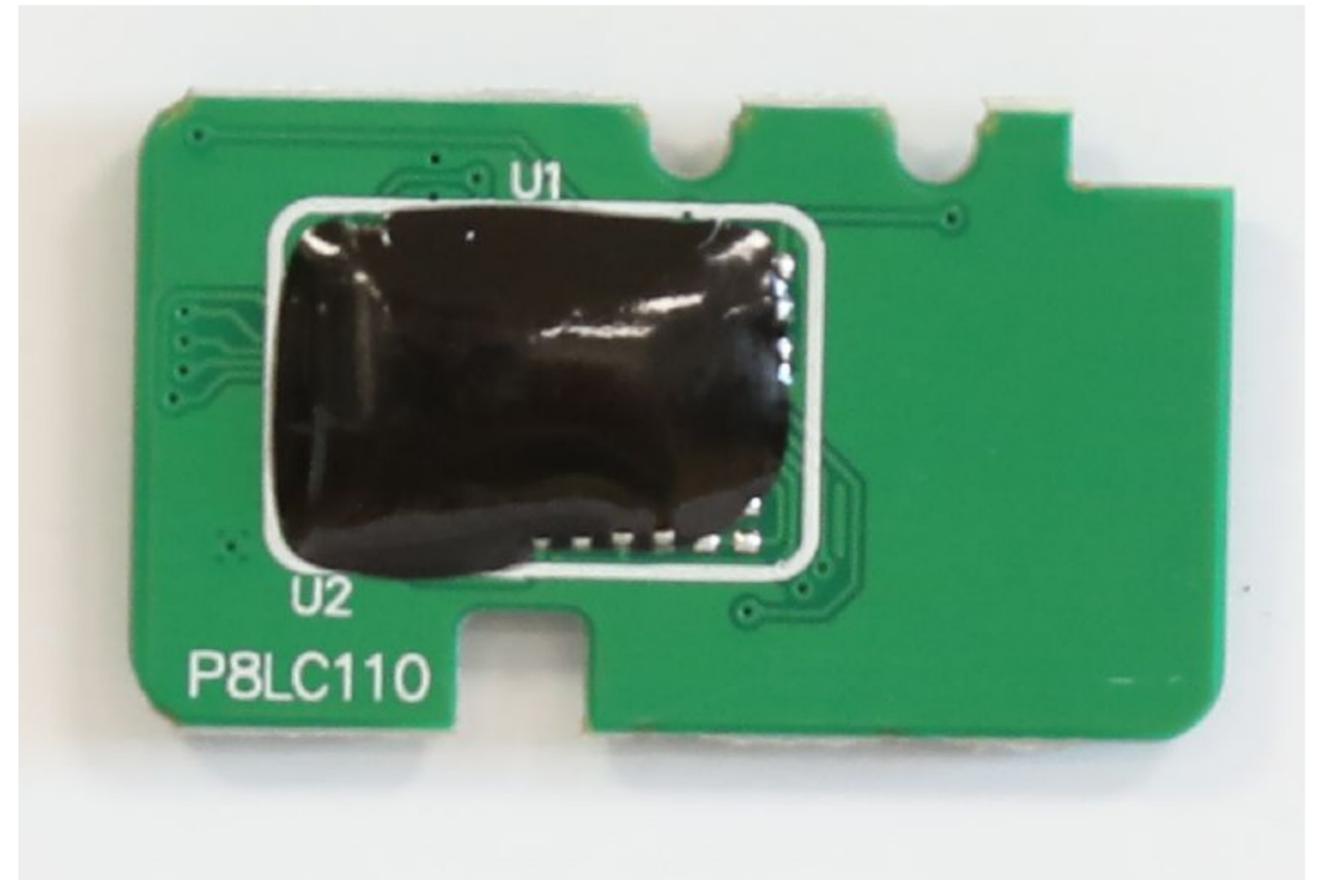
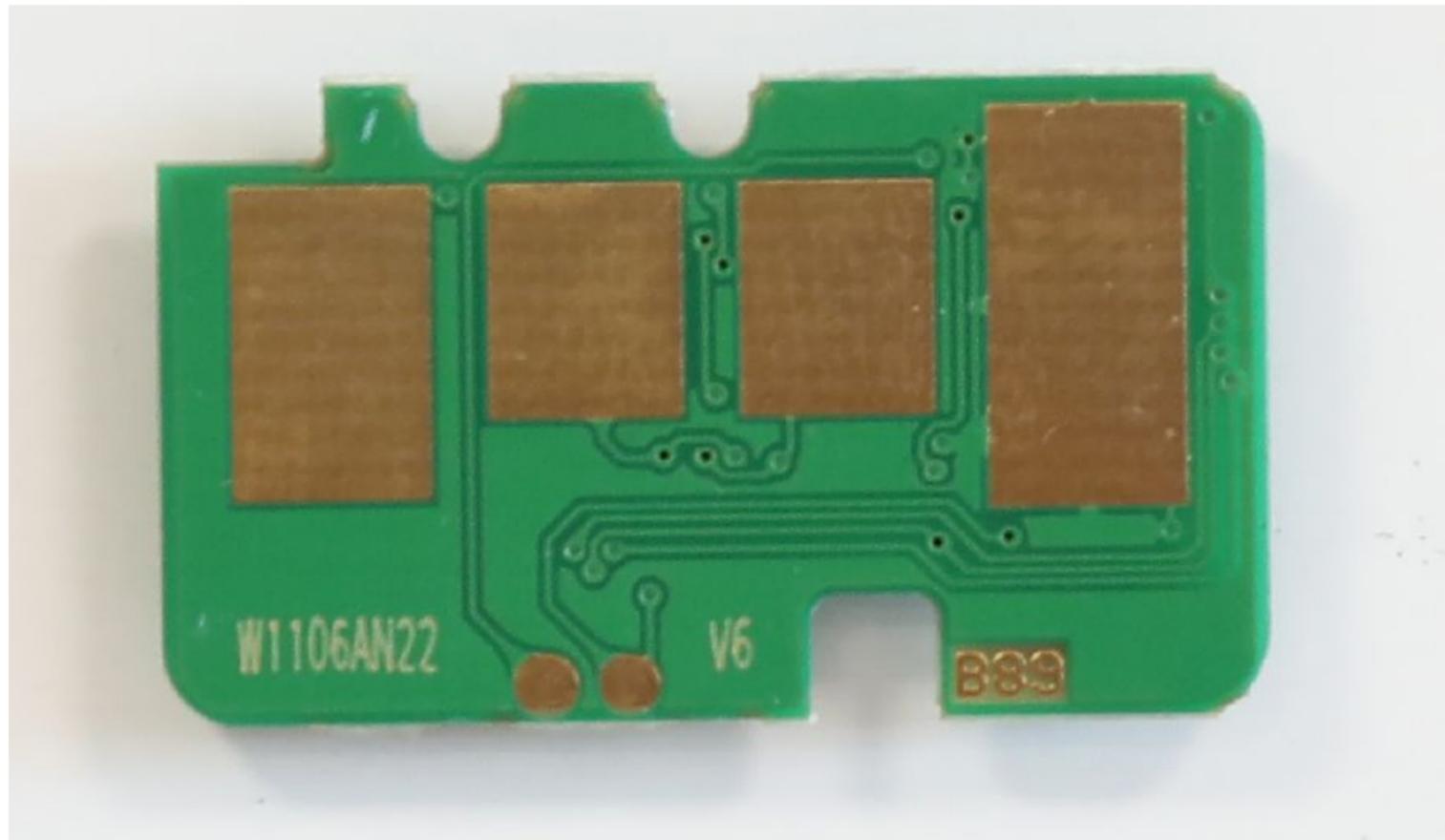
Sample Frontside & Backside

8. APEX W1106A12 V3



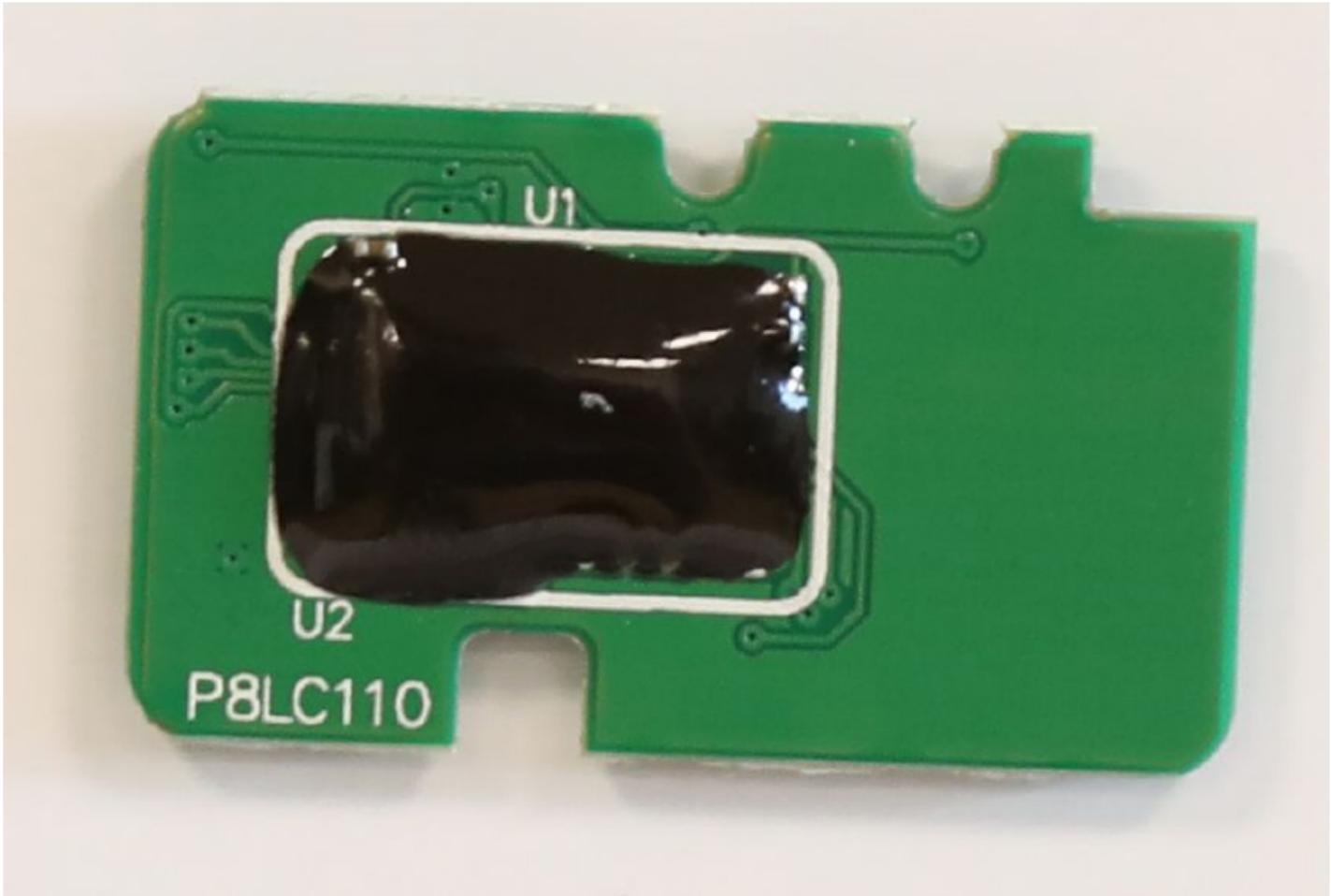
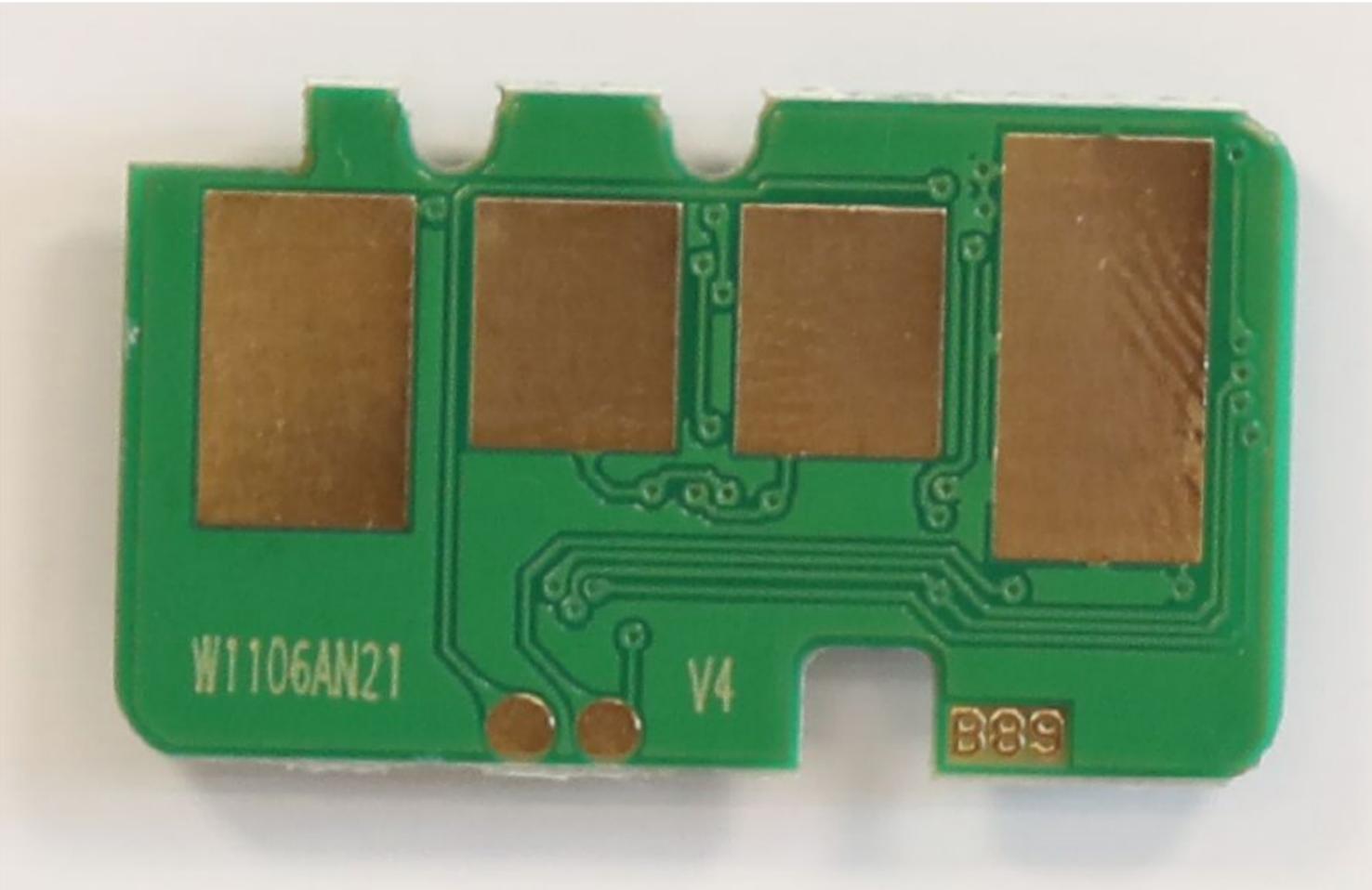
Sample Frontside & Backside

9. APEX W1106AN22 V6



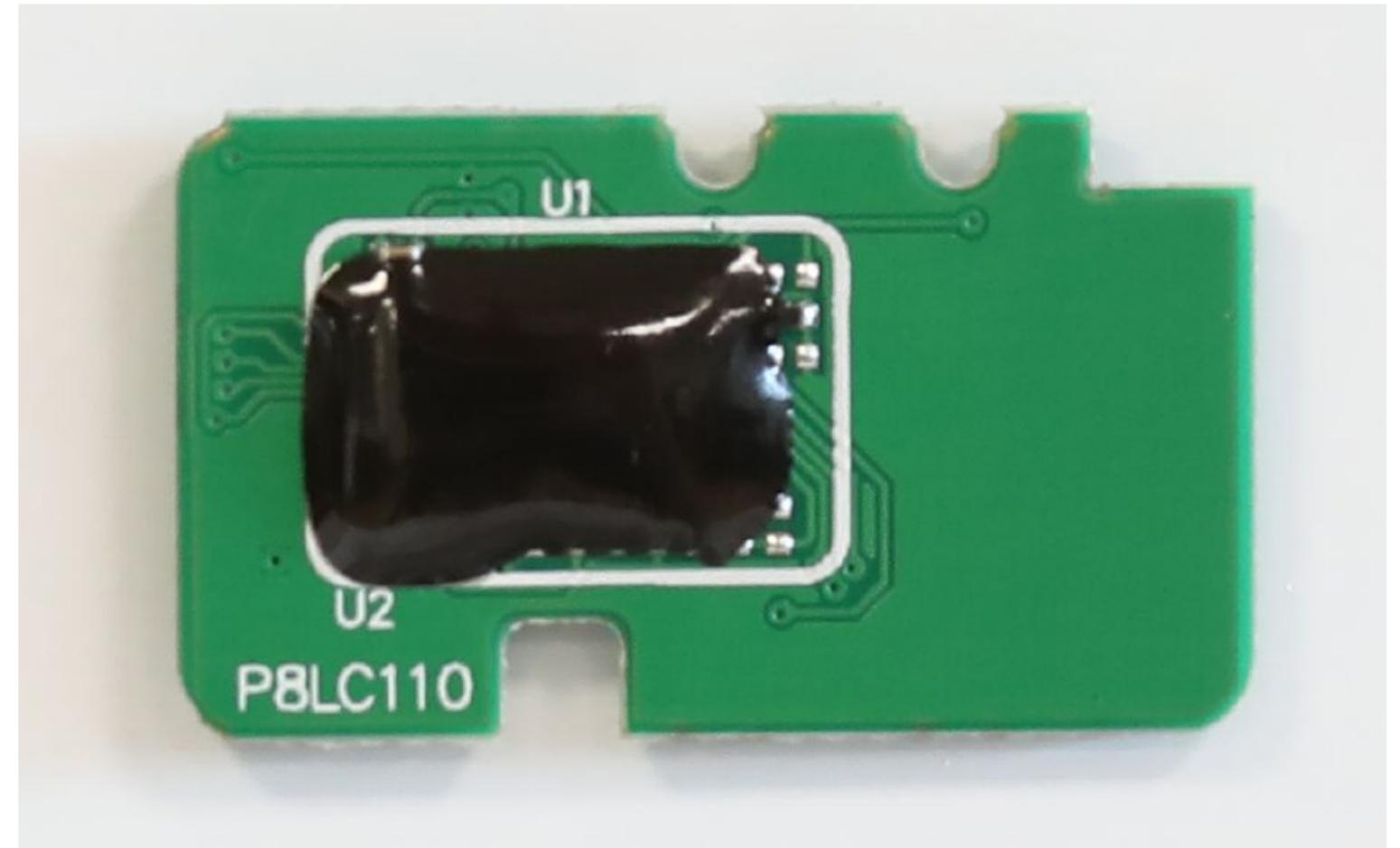
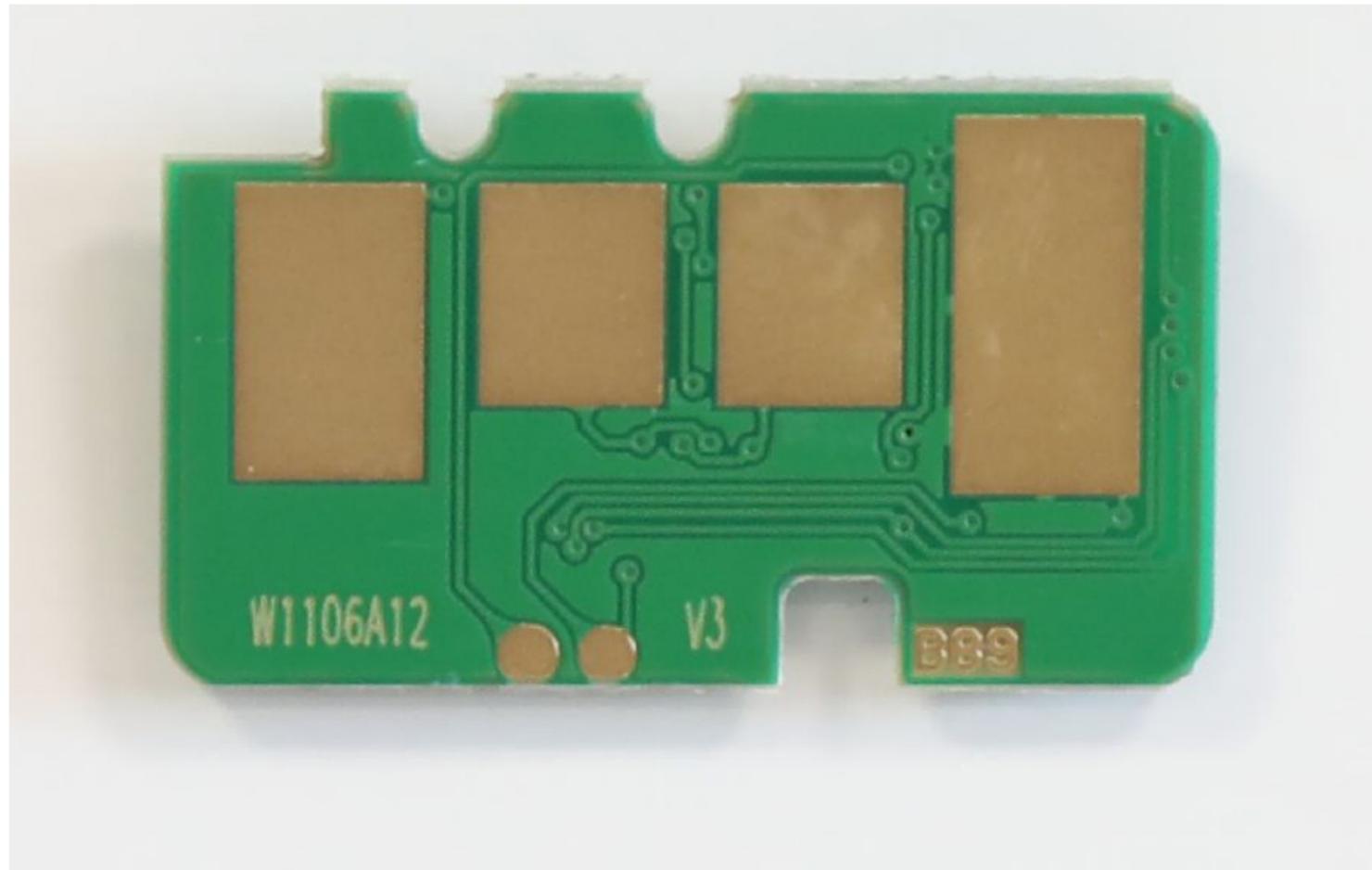
Sample Frontside & Backside

10. Ninestar W1106AN21 V4

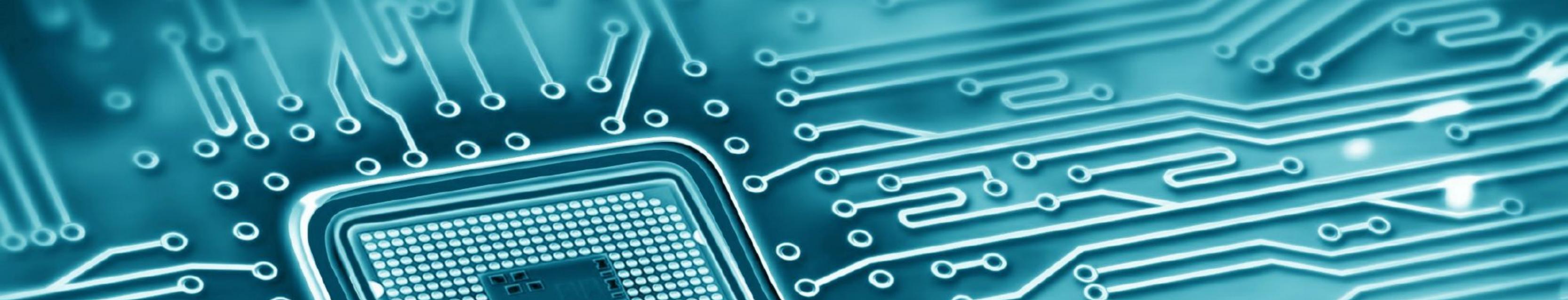


Sample Frontside & Backside

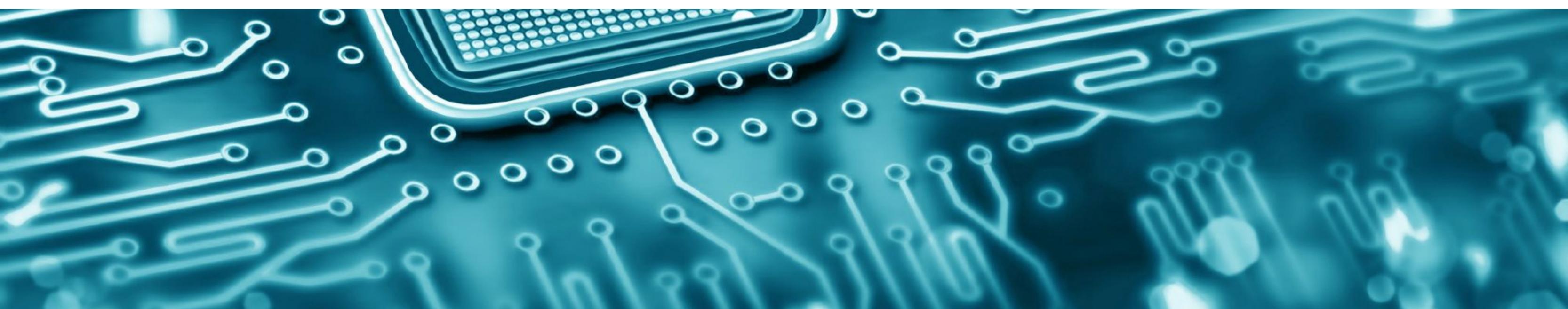
11. Counterfeit W1106A12 V3



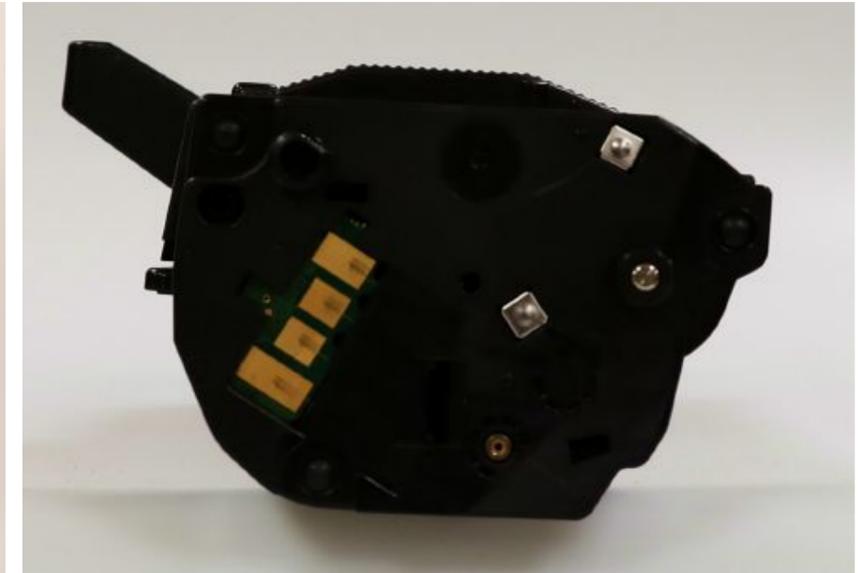
Sample Frontside & Backside



ANNEX B - CARTRIDGE PICTURES



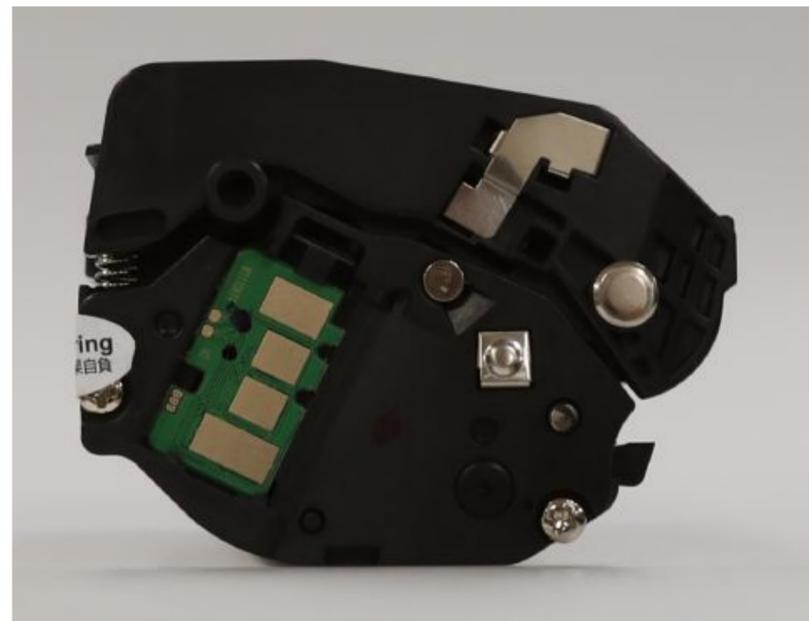
Inside Printer HP Laser 107w



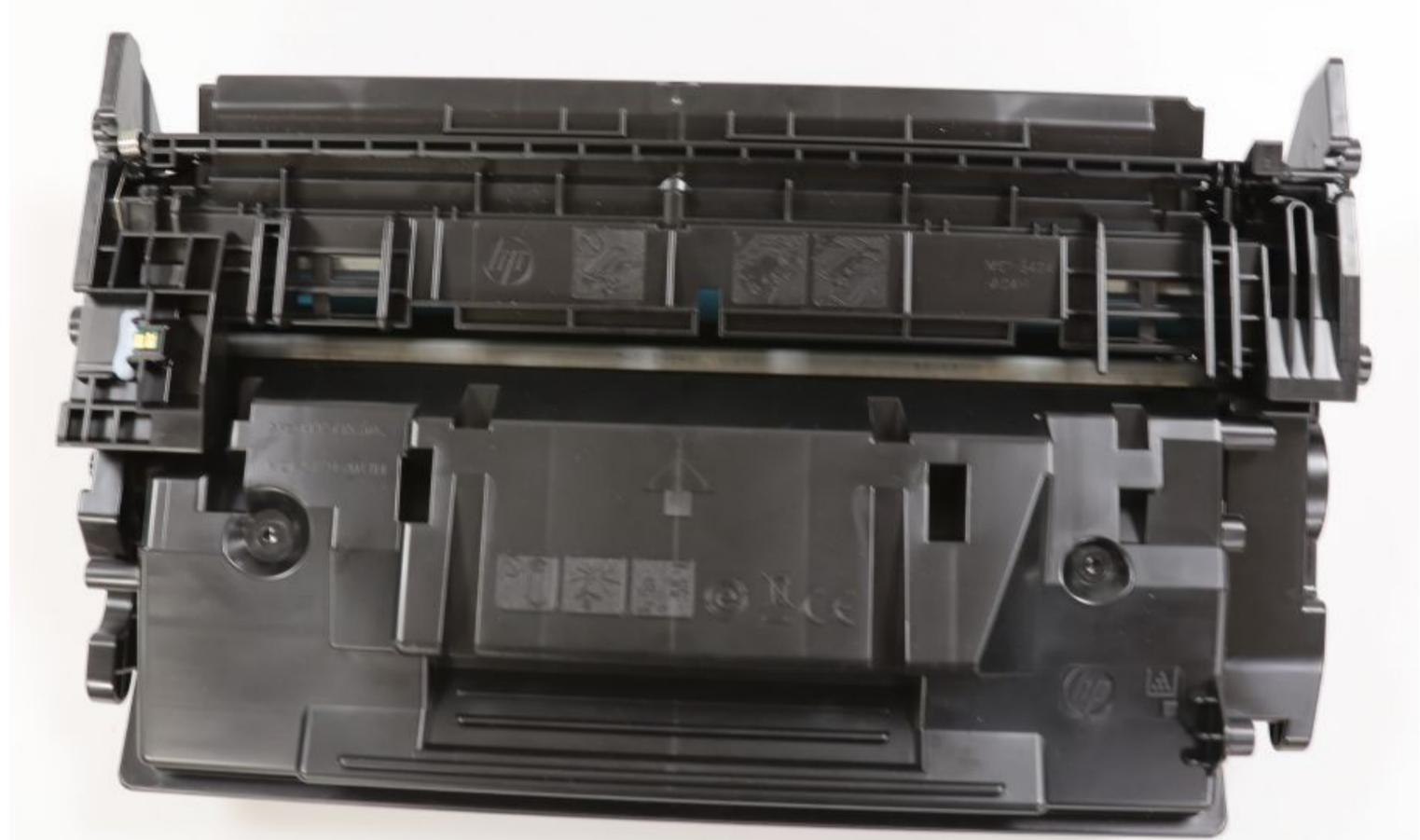
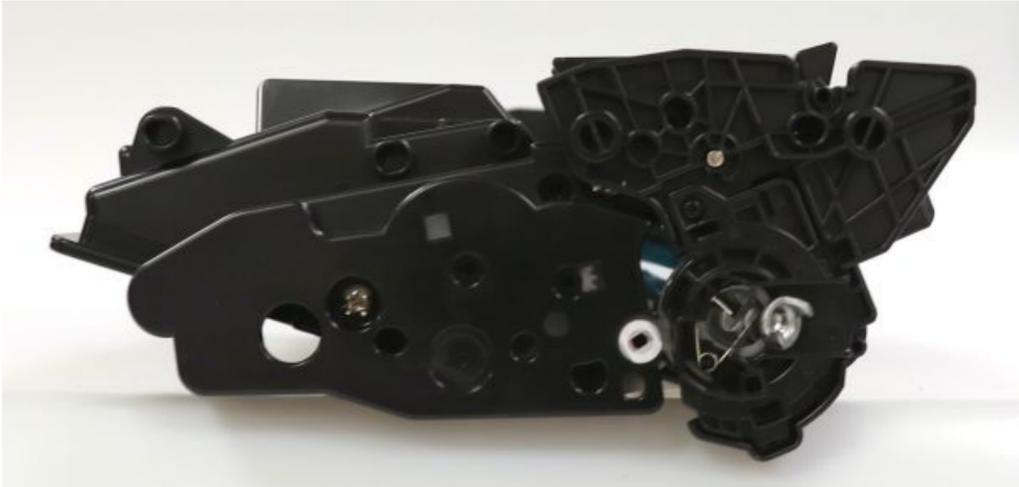
HP Laser 107w - Counterfeit W1106 Cartridge



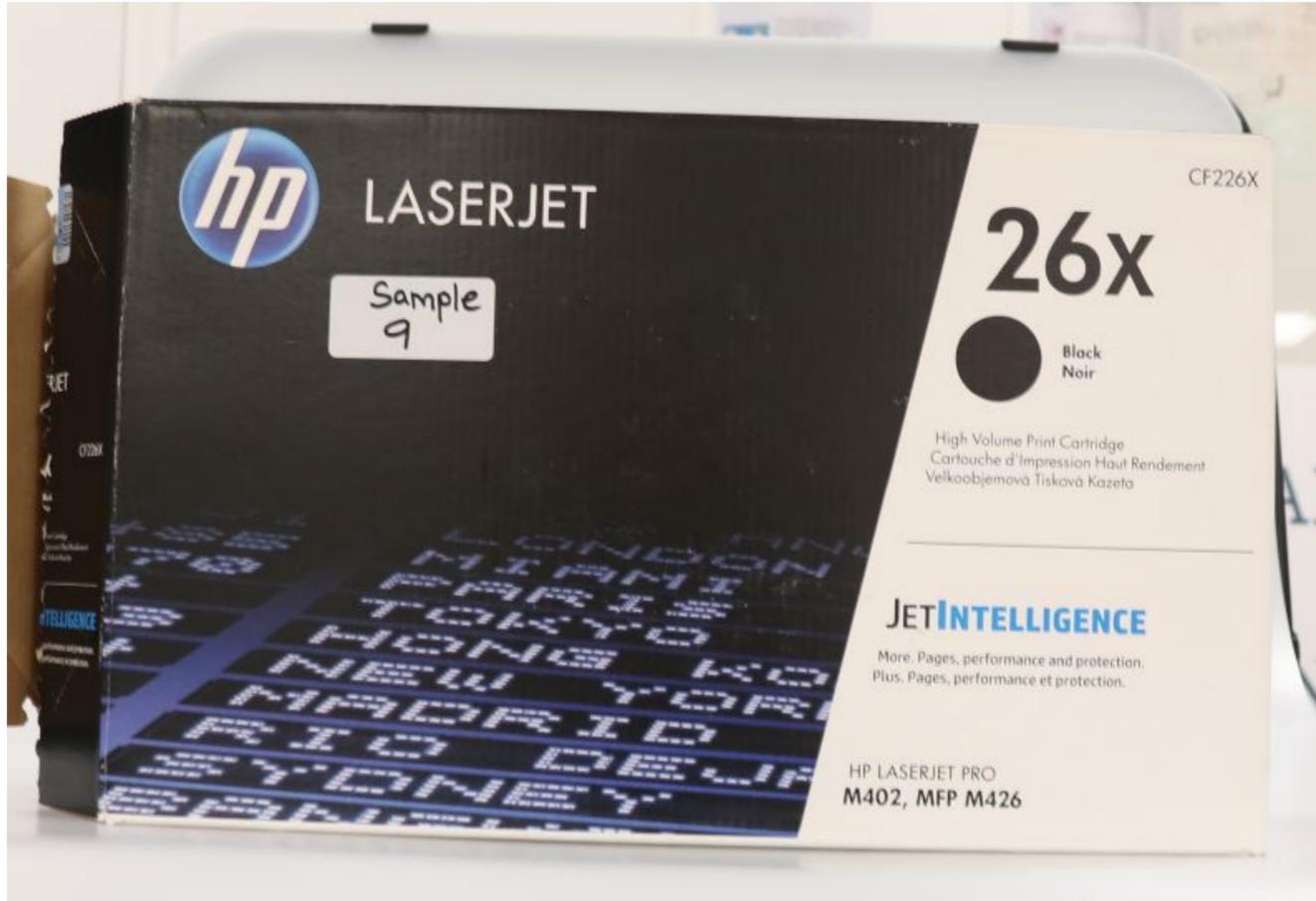
HP Laser 107w - AfterMarket W1106A Cartridge



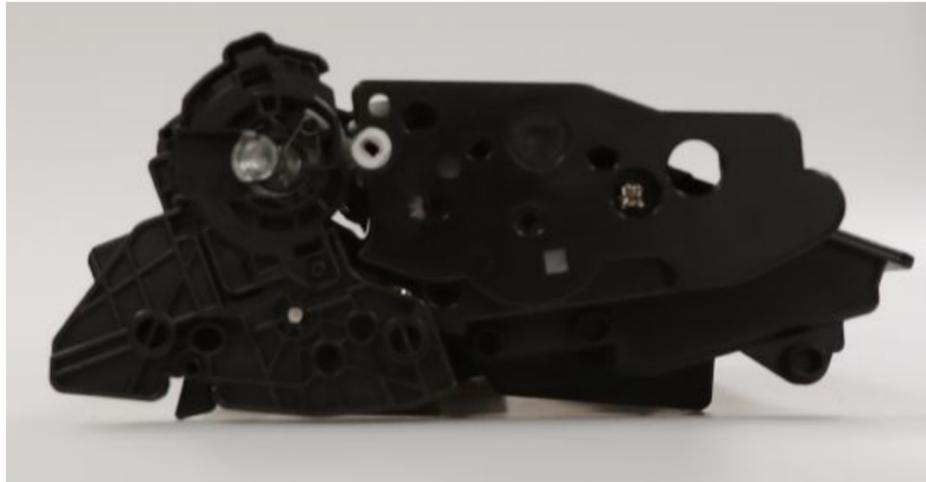
Inside Printer HP LaserJet Pro M402dn



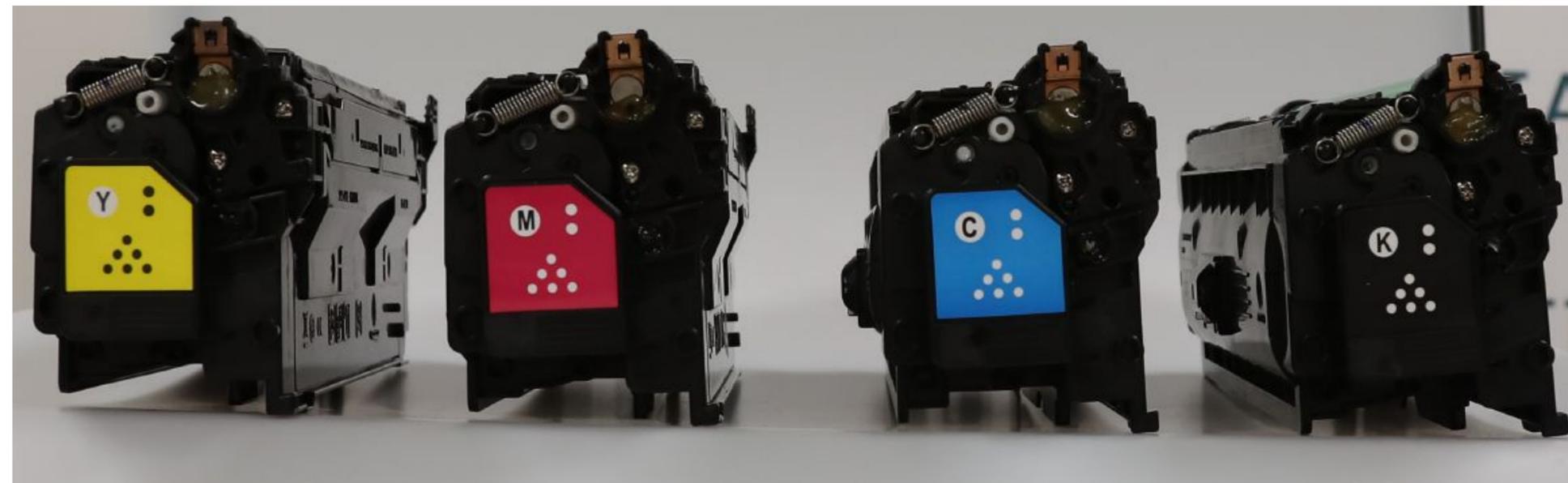
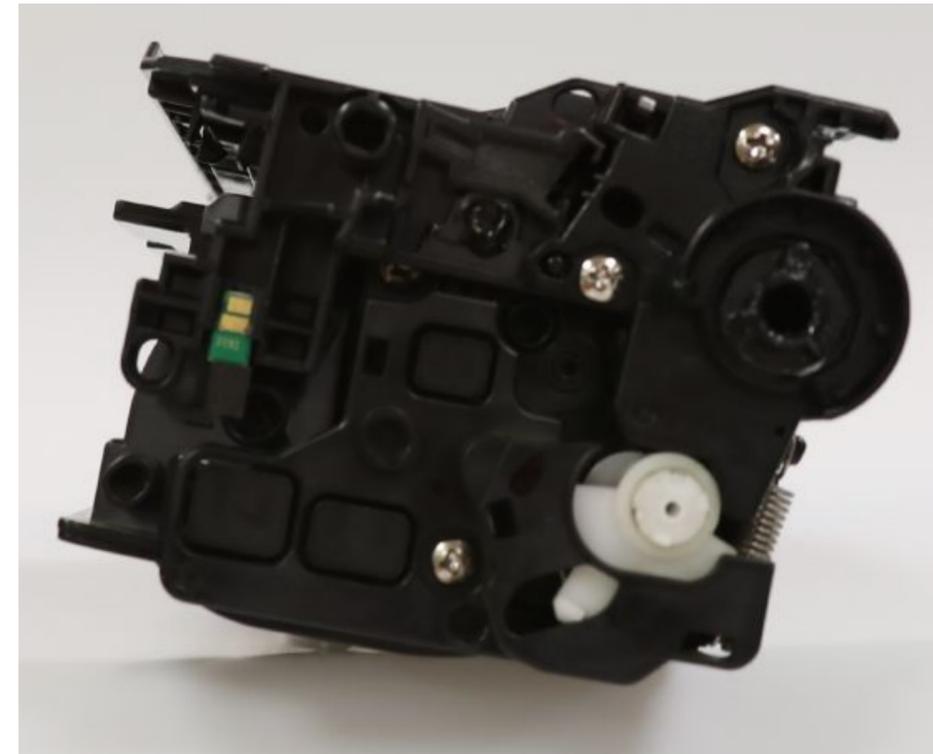
HP LaserJet Pro M402dn - CF226X - Sample_9



HP LaserJet Pro M402dn - CF226X - Sample_10



Inside Printer HP LaserJet Enterprise M553dn

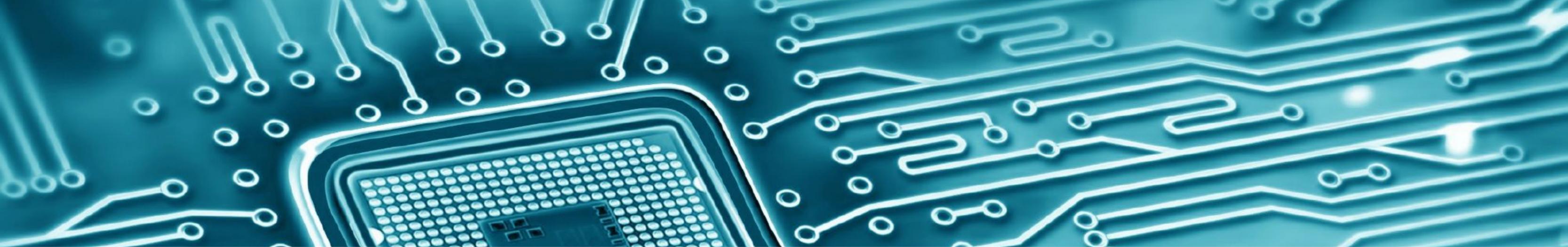


HP LaserJet Enterprise M553dn - Counterfeit CF361 Cartridge - Sample 1064



HP LaserJet Enterprise M553dn - Ninestar NT-CH363FM





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