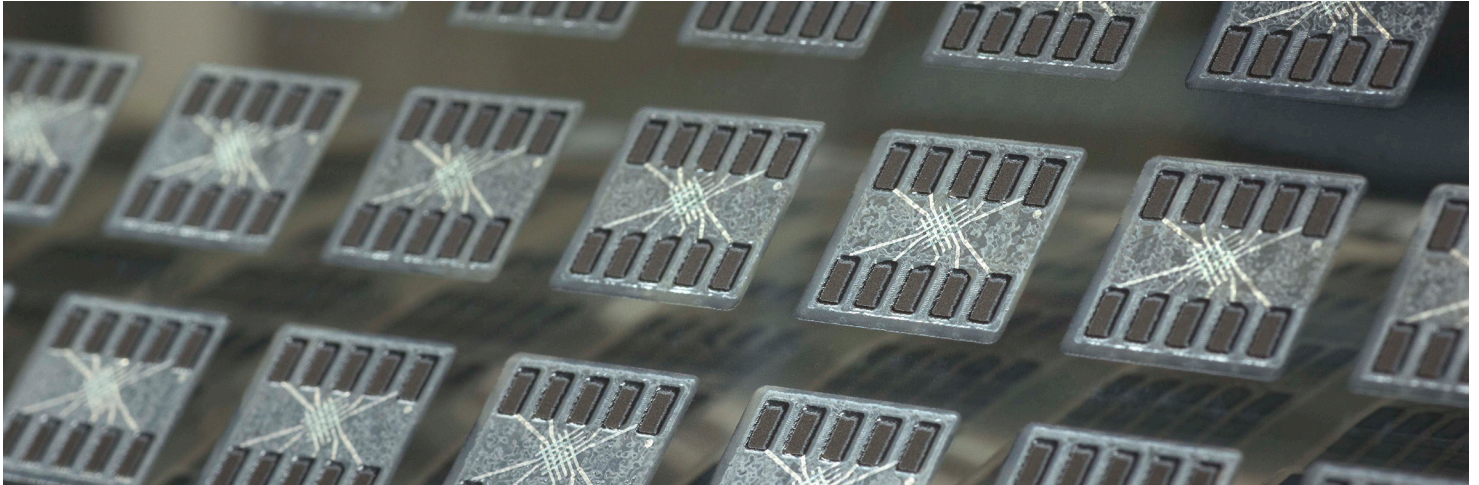


# Xerox® Printed Memory for Smart Consumables

## The Smart & Secure Choice to manage your refills

The most innovative way for Brand owners to collect effective usage data, read and write that information and get their devices connected.



Xerox® Printed Memory is a printed electronic that can enable connectivity, authenticate refills, and enable interaction with dispensing devices to improve refill management.

Xerox® Printed Memory offers unparalleled, multi-layer security/authentication through its unique analog signature and initialization protocols.

And it gets even better: Xerox® Printed Memory enables an enormous amount of design freedom for your product designs due to its form factor: it's small, it's flexible and fits into incredibly small spaces.

### What is Xerox® Printed Memory and how does it work?

- First commercially available Printed Memory;
- Manufactured using print processes to produce memory on a thin flexible substrate (e.g. a label);
- Low cost method of adding intelligence to objects (eg. consumables/refills/capsule/..);
- For Smart Consumables application, the reader would typically be built into the dispensing device and the refill (consumable/capsule/..) would carry the memory label;
- The memory is read/written/rewritten by a contact device, which could be built into the dispensing device;
- Non-volatile: data can be preserved until overwritten with 10-year data retention.

#### Available Storage Capacity

4-bits

10-bits

25-bits

36-bits

#### In short:

1. A breakthrough innovation when it comes to authenticating and adding intelligence to products/consumables.
2. Companies can now increment revenue streams by better managing their refill products
3. A Smart and innovative way of enabling customer loyalty.

## Making products Smarter.....

Xerox® Printed Memory labels can authenticate, measure, count, record time and keep calibration data. It can also hold product information such as lot codes, serial numbers, expiration dates and geographic codes.

Applications for Xerox Printed Memory can include:

- Medical diagnostic devices: blood glucose meter & its test strips
- Pharmaceutical dispensing devices: inhaler
- Imaging Industry: printers
- Fast moving consumer items: water filters, beauty/cosmetic dispensers, beverage dispensers, soap dispensers

## ... at Low Cost

Because the memory labels are manufactured by a printing process, the cost is dramatically lower than those technologies based on RFID or other silicon chip technologies.

Xerox® Printed Memory enables a high level of security which is now accessible to all budgets, products and industries.

## Connectivity & Possible Usage

Upon cartridge insertion, the reader embedded in the device would automatically read the memory label on the cartridge. A highly secure authentication can be performed to confirm the cartridge is not counterfeit. Expiration date and other information can be checked and communicated as desired on, for example, a Smartphone App.

Usage information can be recorded on the cartridge (eg. medicine adherence). Therefore, if a cartridge is removed and re-inserted, the system will recognize it as a used cartridge. This feature can also be used to prevent cartridge re-fills, or to send a reorder reminder to the consumer.

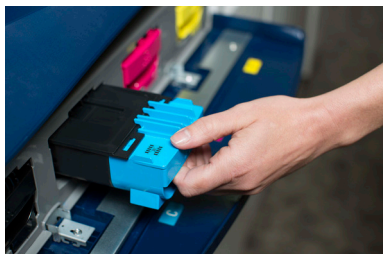
If the device has the appropriate connectivity, usage information can be also be shared with 3<sup>rd</sup> parties (eg. patients' healthcare provider or other healthcare proxy) if so desired.

## Add rewritable data to essentially any object to:

- Authenticate refill / consumables
- Update usage information (eg. count the number of days or times a refill has been in use)
- Provide calibration data



- Dispenser for pharma products
- Refills for health & beauty



- Ink jet and laser print cartridges
- Air or water filters
- Coffee refill capsules

Ready to learn more?

Please contact [PrintedMemory@xerox.com](mailto:PrintedMemory@xerox.com)

