

# Printing capabilities of thermal transfer coders

SmartDate® Series ■ ■ ■



## Marking and coding ■ ■ ■

For over a decade, Markem-Imaje has pioneered thermal transfer coding technology. Our comprehensive SmartDate® Series of coders provides the most reliable high quality codes on flow-wrappers, bags, tray seals, pouches, sachets, vacuum packs or labels.

## Performance ■ ■ ■

**Printer and Cassette** – Durable wear resistant design. Adaptable for intermittent or continuous line configuration. Left or right hand operation. Meets extreme production line speeds. Multiple ribbon save features. Industry leading 0.5 mm gap between prints. Capable of serialized 2D codes.

**Controller** – Multiple user interface options including color touch screen and web pages. Dedicated buttons for frequently used functions. USB for image and file data transport. Equipped with power save mode.

### Print Area –

#### SmartDate® X60:

Intermittent: 53 mm x 75 mm (2.1" x 3.0")

Continuous: 53 mm x 150 mm [(2.1" x 5.9") combined]

#### SmartDate® X40:

Intermittent: 32 or 53 mm x 75 mm (1.3" or 2.1" x 3.0")

Continuous: 32 or 53 mm x 100 mm (1.3" or 2.1" x 3.9")

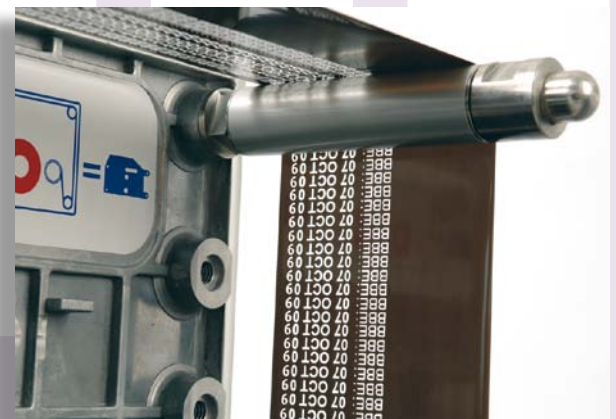
#### SmartDate® X60s (shuttled):

Continuous: 53 mm x 100 mm (2.1" x 3.9")

#### SmartDate® X60/128:

Intermittent: 128 mm x 75 mm (5.0" x 3.0")

Continuous: 128 mm x 150 mm (5.0" x 5.9")



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# Selection of the most suitable thermal transfer coder ■ ■ ■

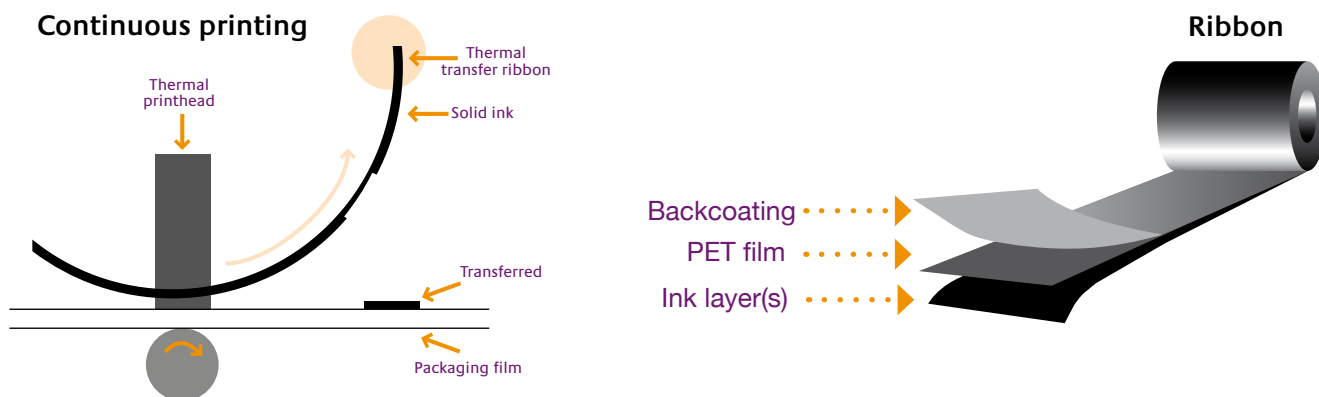
## Thermal transfer technology ■ ■ ■

Thermal transfer technology combines a thermal printhead and a polyester ribbon coated with ink on one side. Heat transfers the ink from the ribbon onto the packaging film that is marked as it passes under the thermal printhead. The thermal printhead is made up of a row of independent tiny resistors mounted on a ceramic support. These resistors are then activated based on the characters to be printed, melting the ink on the ribbon and “transferring” the selected characters to the packaging film.



### There are two types of thermal transfer coders depending on the application:

- Intermittent mode: Packaging film advances and then stops. The printhead lowers, moves along the packaging film and ribbon. The printhead prints. The printhead is raised, and returns to the home position, the ribbon advances and the process is repeated.
- Continuous mode: The packaging film is constantly moving. When triggered, the ribbon accelerates to the film speed, the printhead is lowered and printing begins. At the end of printing the printhead is raised to the home position and the ribbon stops moving.



## Product comparison ■ ■ ■

		SmartDate® X40	SmartDate® X60	SmartDate® X60s	SmartDate® X60/128
<b>Print area</b>	Width	32 mm or 53 mm	53 mm	53 mm	128 mm
	Length	100 mm (cont.) 75 mm (int.)	150 mm (cont.) 75 mm (int.)	100 mm	150 mm (cont.) 75 mm (int.)
<b>Print speed (mm/sec)*</b>	Normal	600 mm/sec	1,000mm/sec (at full 300dpi resolution)	1,000mm/sec (at full 300dpi resolution)	700 mm/sec
	Hi-speed mode	N/A	1,000 mm/sec	1,200 mm/sec	N/A
	Digital Ribbon Save Print Mode	N/A	1,200 mm/sec	1,800 mm/sec	N/A
<b>Ribbon length</b>		1,100 m	1,100 m	1,100 m	900 m
<b>Ribbon width (Min)</b>		20 mm	20 mm	20 mm	80 mm
<b>Ribbon width (Max)</b>		55 mm	55 mm	55 mm	130 mm
<b>Ribbon save options</b>	Interlace	Yes	Yes	Yes	Yes
	Radial Ribbon Save	Yes	Yes	Yes	Yes
	Multi-print signal	Yes	Yes	Yes	Yes
	Digital Ribbon Save Print Mode	N/A	Yes	Yes	N/A
	Negative ribbon advance	Yes	Yes	Yes	Yes
<b>Intermittent/Continuous</b>		Intermittent or Continuous	Combined	Continuous only	Combined
<b>Left/Right Hand</b>		Easy change, no parts required	Easy change, no parts required	Easy change, no parts required	Easy change, no parts required
<b>Minimum print speed</b>		20 mm/sec	10 mm/sec	10 mm/sec	20 mm/sec

\*Maximum, minimum print speeds and the suitability of ribbons and ribbon saving techniques are dependant on the individual application - if in doubt please contact your local presales team for further advice.

# Ribbon selection/savings ■ ■ ■

## SmartDate X series Ribbons

	Category	TTR Grade	Formula	Colors	Typical Speed (mm/s)	Notes
	Basic	Xceed 3610	Wax/resin	Black	700	Economy grade, up to 900 m length
		Xceed 3410	Wax/resin	White, Red, Green, Blue more colors on request	500	General purpose for colors, Opaque White ribbon with 650 m length
	Best Class	Xtra	Enhanced wax/resin	Black	900	General purpose OUTSTANDING PRICE-PERFORMANCE RATIO high level of versatility, high mechanical resistance, higher speed, less waste, less energy, up to 1,100 m length
		Xtra 7810	Enhanced wax/resin	Metallic White	600	Less energy compared traditional whites, up to 800 m length
	High End	Xpert 3910	Resin	Black, White, Red, Green, Blue	300	Excellent mechanical resistance, up to 800 m length
		Xpert 4910	Resin	Black	250	Superior mechanical and heat resistance, up to 800 m length
		Xpert 6910	Resin	Black	200	Superior heat and solvent resistance, up to 800 m length

## Interlaced mode ■ ■ ■

### Maximize ribbon usage:

- First print uses every other pixel; the second print utilizes the unused ink leftover from the first print

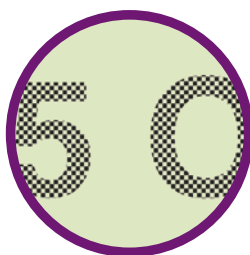
Without interlaced print



With interlaced print



Interlaced print



Enlarged

Ribbon - First print



Ribbon - Second print

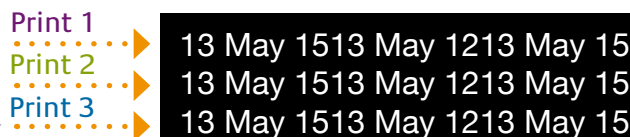


## Radial ribbon save ■ ■ ■

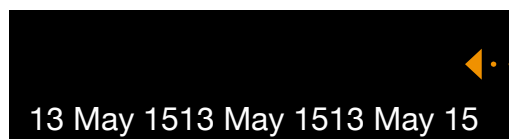
### Maximize ribbon usage:

- Moves image across ribbon in radial direction using the entire width of the ribbon

Printed ribbon with ribbon save



Printed ribbon without ribbon save

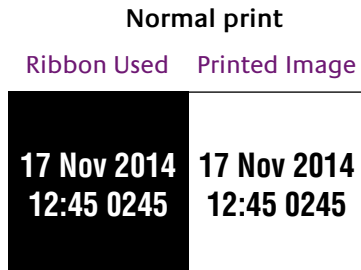


Wasted ribbon

## Digital Ribbon Save Print Mode ■ ■ ■

### Maximize ribbon usage:

- Save on ribbon usage by assigning the Digital Ribbon Save Print Mode in advanced settings.



Normal printing mode

In Digital Ribbon Save Print Mode quality is equivalent to normal mode with a saving of up to 20%.

Advantages of the Digital Ribbon Save Print Mode :

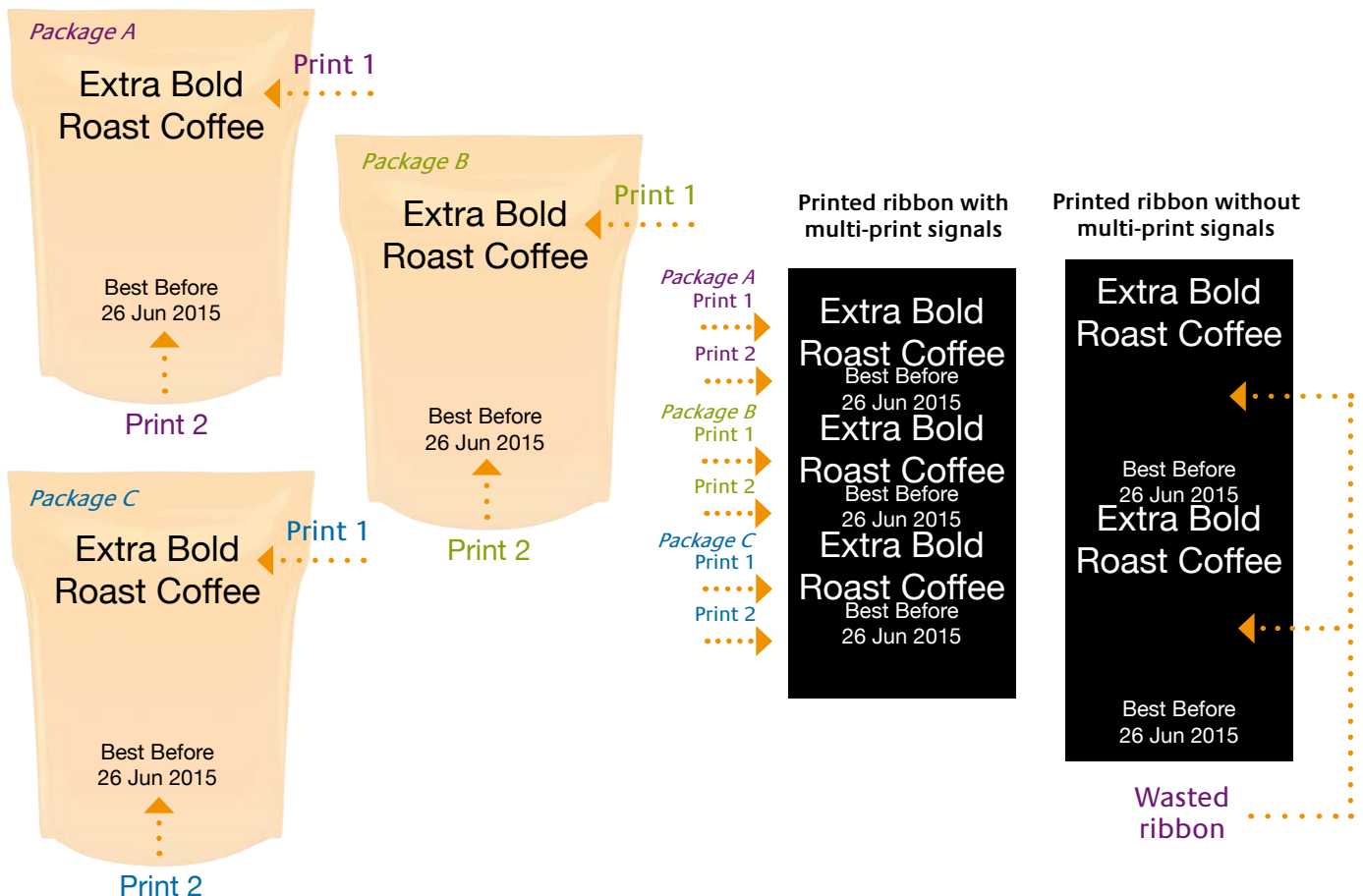
- Up to 20% ribbon saving
- Printing on higher material speeds



## Multi-print signals ■ ■ ■

### Maximize ribbon usage:

- Print different images on same substrate without additional adjustments



## Examples of prints created in CoLOS® Professional ■ ■ ■

<p><b>Capability to mix different character heights</b> (Including bold, italics or underline)</p> <p><b>Date &amp; Time Formats</b> (Automated, calculated, offset and linked dates)</p>	
<p><b>True Type Fonts</b></p>	
<p><b>Logos</b></p>	
<p><b>Barcodes</b> (Code 128, code 39, EAN 128, EAN 8 &amp; 13, ITF, UPCA, UPCE)</p>	
<p><b>2D barcodes</b> (Datamatrix, GS1 Datamatrix, GS1 DataBar™ (formerly RSS), QR, PDF 417)</p>	
<p><b>Unlimited Text Fields</b></p>	

The Markem-Imaje SmartDate® Series offers the versatility you expect at a lower cost of ownership for coding on flexible packaging films, foils and labels. Reliability combined with unique ribbon saving options ensure significant savings in consumables and maintenance costs. Use Markem-Imaje CoLOS® Enterprise software to network and manage your coders remotely.

## Food

Designed to print crisp, clean codes on a variety of substrates used in retail food and food service – even on packaging lines that run around the clock.



## Pharmaceutical

High quality, permanent codes on pharmaceutical packaging materials such as labels, blister packs and films.



## Other

Whether you're producing trial sizes or family packages, SmartDate® thermal transfer coders are ideal for printing directly on labels or flexible film.



## OEM

Markem-Imaje works closely with the leading OEM's in the packaging industry to ensure our products are designed for easy installation. Our products include an option to connect via a web browser as to integrate the coder controls to host packaging machines.



To learn more, visit [www.markem-imaje.co.uk](http://www.markem-imaje.co.uk)

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