Printing capabilities of thermal transfer coders

SmartDate® Series

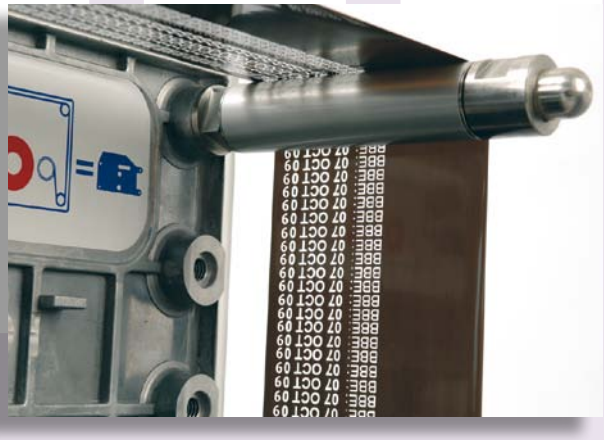
Marking and coding

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® 5/128:
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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the team to trust

Selection of the most suitable thermal transfer coder

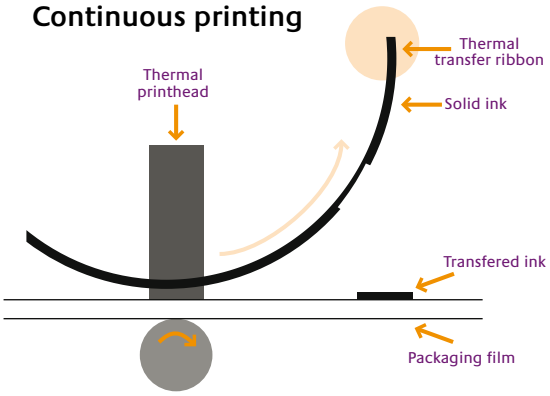
Thermal transfer technology

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.

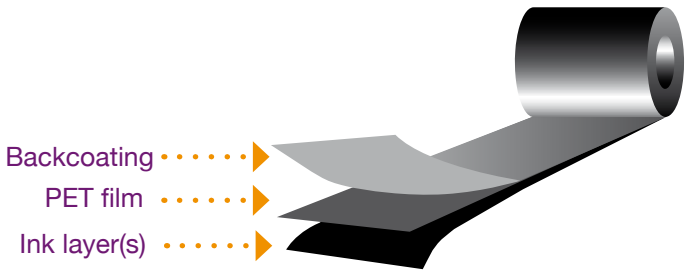
There are two types of thermal transfer coders depending on the application:

- 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.

Continuous printing



Ribbon



Product comparison

	SmartDate® X40	SmartDate® X60	SmartDate® X60s	SmartDate® 5 / 128
Print area 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.)
Print speed (mm/sec)* Normal	600 mm/sec	1000mm/sec (at full 300dpi resolution)	1000mm/sec (at full 300dpi resolution)	600 mm/sec
Hi-speed mode	N/A	1000 mm/sec	1200 mm/sec	N/A
Digital Ribbon Save Print Mode	N/A	1200 mm/sec	1800 mm/sec	N/A
Ribbon length	1100 m	1100 m	1100 m	600 m
Ribbon width (Min)	20 mm	20 mm	20 mm	80 mm
Ribbon width (Max)	55 mm	55 mm	55 mm	130 mm
Ribbon save options 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
Intermittent/Continuous	Intermittent or Continuous	Combined	Continuous only	Combined
Left/Right Hand	Easy change, no parts required	Easy change, no parts required	Easy change, no parts required	Easy change, no parts required
Minimum print speed	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

Ribbon comparison

SmartDate® TTR Grades:	Formula	Colors	Typical Speed [mm/s]	Notes
3410	Wax/resin	White, Red, Green, Blue - other colors on request	500	General purpose; color
3510	Wax/ higher resin	Black	600	General purpose: high mechanical resistance
7810	Wax/ higher resin	Metallic white	600	Requires less heat to transfer as compared to traditional whites
3710	Wax/resin	Black	300	Niche application: rough or porous substrates such as Kraft paper or Tyvek
3810	Wax/resin	Black	800 (1000 with X60)	General purpose
3820	Wax/resin	Black	800 (1000 with X60)	General purpose for increased uptime
5810	Wax/resin	Black	1000	General purpose: high speeds
3910	Resin	Black, White, Red, Green, Blue	300 (600 with X60)	Excellent mechanical resistance
6910	Resin	Black	200	Superior heat and solvent resistance
8810	Wax/resin	Black	600	Niche application: polyethylene printed in a cold environment

Interlaced mode

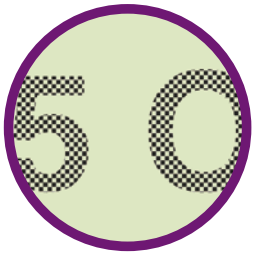
Maximize ribbon usage:

- 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

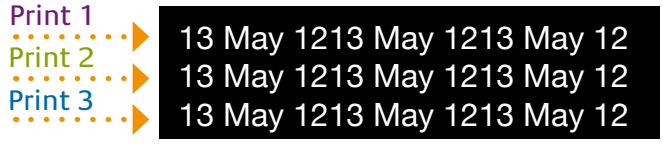
Ribbon - Second print

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 print

Ribbon Used | Printed Image

17 Nov 2013 12:45 0245 | 17 Nov 2013 12:45 0245

Digital Ribbon Save Print Mode

Ribbon Used | Printed Image

17 Nov 2013 12:45 0245 | 17 Nov 2013 12:45 0245

Normal printing mode

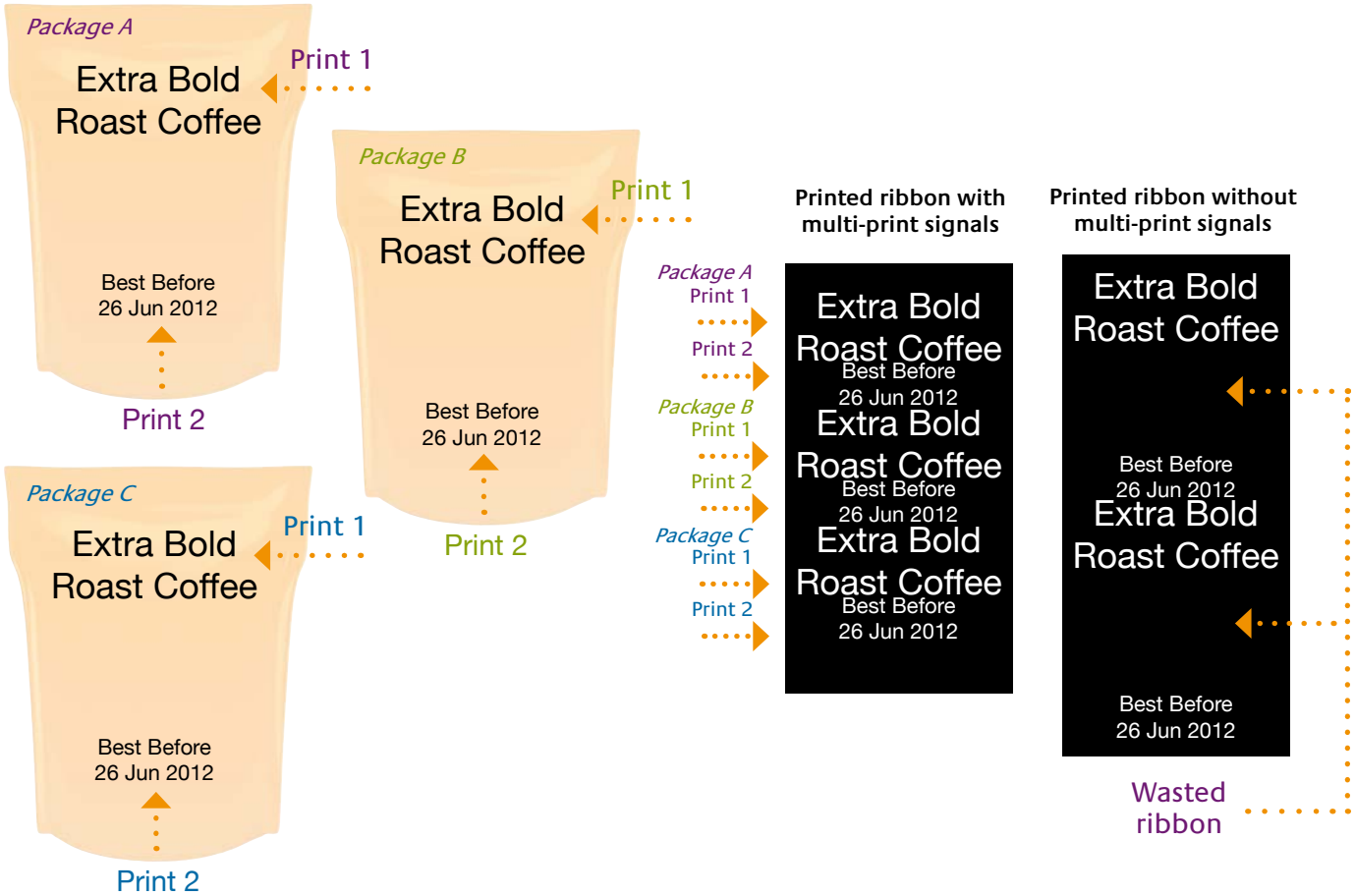
In Digital Ribbon Save Print Mode quality is equivalent to normal mode with a saving of up to 20%.

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



Printing capabilities

Examples of prints created in CoLOS® Professional

Capability to mix different character heights
(Including bold, italics or underline)

Date & Time Formats
(Automated, calculated, offset and linked dates)

Produced
FEB 19 12
14:15:20
Shift 3

26 03 2013
10:50:19
A

26 03 09
10:50:19
A
Coffee Company
Product of Columbia
French Vanilla

True Type Fonts

Best By
19 02 12

Best By
19 02 12

最好的
ベスト
Best By
2013 02 25

Best By
26/03/12
1,25€

Logos

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USDA

Barcodes
(Code 128, code 39, EAN 128, EAN 8 & 13, ITF, UPCA, UPCE)

UPCA

EAN 128

EAN 13

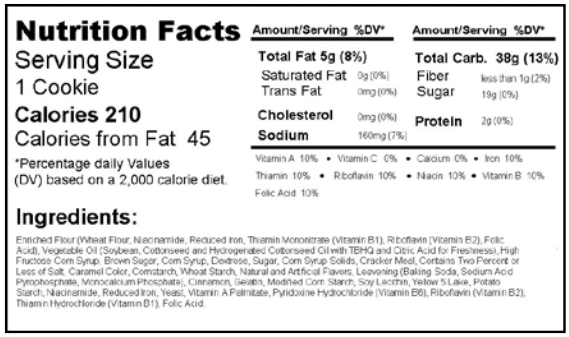
2D barcodes
(Datamatrix, GS1 Datamatrix, GS1 DataBar™ (formerly RSS), QR, PDF 417)


Datamatrix or GS1 Datamatrix


GS1 DataBar
Expanded Stacked


QR

Unlimited Text Fields



Nutrition Facts

Serving Size
1 Cookie

Calories 210
Calories from Fat 45

*Percentage daily Values (DV) based on a 2,000 calorie diet.

Amount/Serving	%DV*	Amount/Serving	%DV*
Total Fat 5g	(8%)	Total Carb. 38g	(13%)
Saturated Fat 0g	(0%)	Fiber less than 1g	(2%)
Trans Fat 0mg	(0%)	Sugar 19g	(0%)
Cholesterol 0mg	(0%)	Protein 2g	(0%)
Sodium 160mg	(7%)		

Vitamin A 10% • Vitamin C 0% • Calcium 0% • Iron 10%
Thiamin 10% • Riboflavin 10% • Niacin 10% • Vitamin B 10%
Folic Acid 10%

Ingredients:

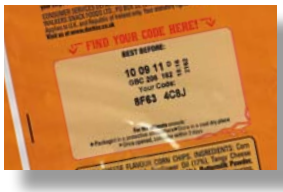
Enriched Flour (Wheat Flour, Niacinamide, Reduced Iron, Thiamin Mononitrate (Vitamin B1), Riboflavin (Vitamin B2), Folic Acid), Vegetable Oil (Soybean, Cottonseed and Hydrogenated Cottonseed Oil (with TBHQ and Citric Acid for Freshness)), High Fructose Corn Syrup, Brown Sugar, Corn Syrup, Dextrose, Sugar, Corn Syrup Solids, Cracker Meal, Contains Two Percent or Less of Salt, Caramel Color, Cornstarch, Wheat Starch, Natural and Artificial Flavors, Leavening (Baking Soda, Sodium Acid Pyrophosphate, Monocalcium Phosphate), Cinnamon, Gelatin, Modified Corn Starch, Soy Lecithin, Yellow 5 Lake, Potato Starch, Niacinamide, Reduced Iron, Yeast, Vitamin A Palmitate, Pyridoxine Hydrochloride (Vitamin B6), Riboflavin (Vitamin B2), Thiamin Hydrochloride (Vitamin B1), Folic Acid.

Applications

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.com

Photos: Al Karevy Photography, Ginko
Printed in France on recycled paper - A39863 - F1

nefton
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