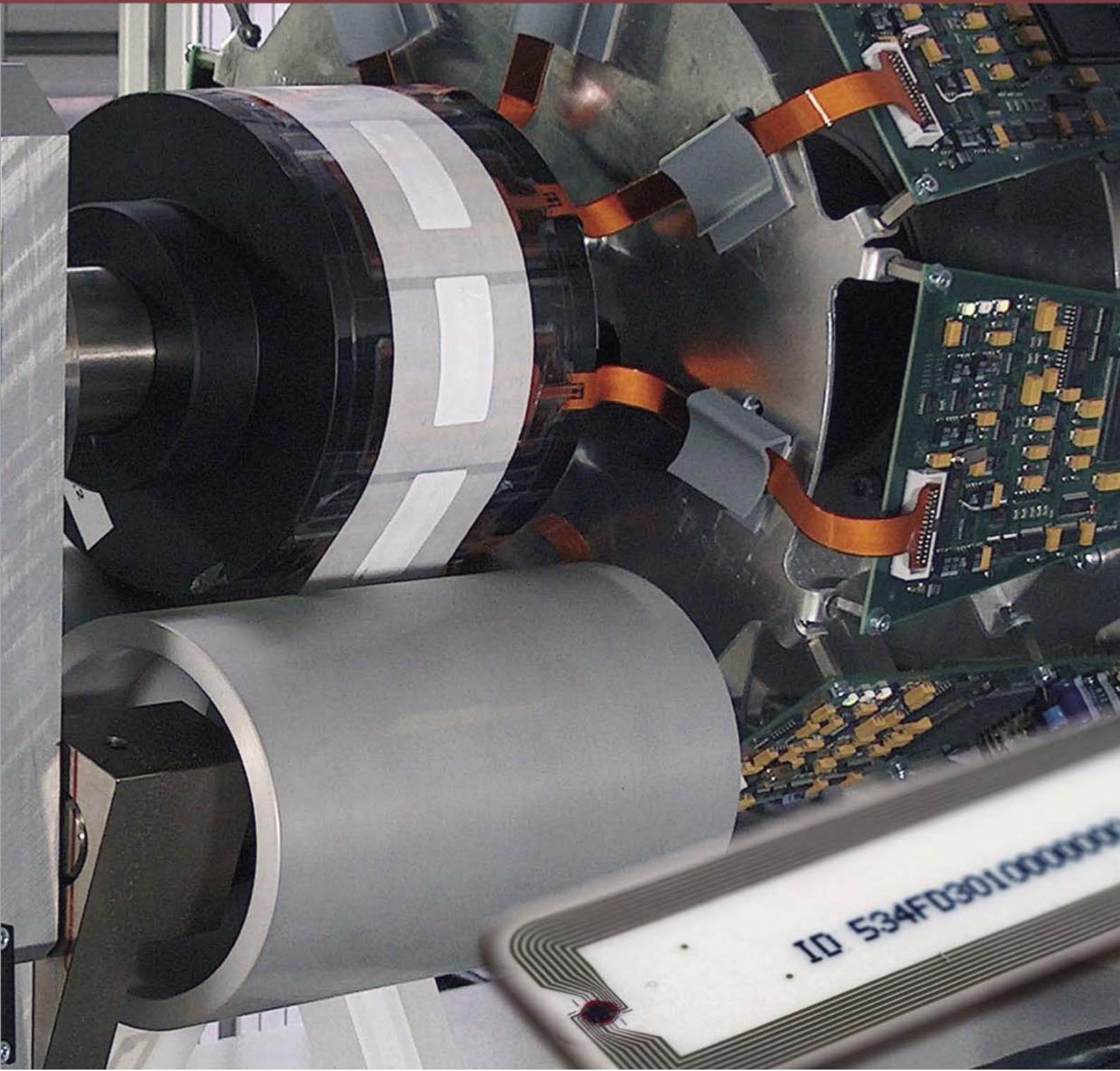


TAGLINE

High Speed Smart Label Encoding System



- CARD SYSTEMS ○
- DOCUMENT & PRODUCT IDENTITY ○
- IMPACT NUMBERING ○



RFID Encoding - Optimum Quality at Unrivalled Speed

With the introduction of RFID technology product labeling has entered a new dimension. New applications are the reason for the pharmaceutical industry and international trading chains working with large product ranges to consider the deployment of this trend-setting technology.

Quality and performance

Yet such considerations are directly related to strict specifications resulting from requirements of the industry sectors concerned. The pharmaceuticals industry, for instance, is looking for solutions capable of eliminating the health risks as well as the economic downside of counterfeit medical drugs.

These risks have prompted the U.S. Food and Drug Administration (FDA) to mandate the introduction of unique and individual labeling of every prescription drug by 2007, so as to provide the means for continuous product tracking and proof of authenticity.

Off-line solution required

Until now, pharmaceutical companies considering the use of RFID tags for product

labeling have faced two main problems:

- the quality of existing RFID tags resulted in unacceptably high failure rate in the reading of individually labeled products
- the relatively low speed of conventional RFID encoding equipment, which was unable to match the high speeds of the packaging equipment (up to 600 products/min)

Up to now, a failure rate as high as 10 in 100 per cent of RFID tags is not uncommon.

In contrast, pharmaceuticals industry standards demand a failure rate of no more than one in 10'000 RFID tags.

Therefore any faulty tag directly results in unacceptable financial losses and a decrease in productivity.

High security standards

Some products require special security features. Depending on the amount of information required and on the particular chip protocol in use, encryption of RFID tags can increase programming time by up to one second or more for each RFID tag.

Since packaging lines run at speeds of more than 5 units per second, inline encryption would cause a dramatic slowdown of the packaging process.

Even without encryption, inline encoding reduces the speed of packaging lines by more than 50 per cent, since the encoding step simply cannot keep up with the high speed of the packaging process.

The solution - TAGLINE

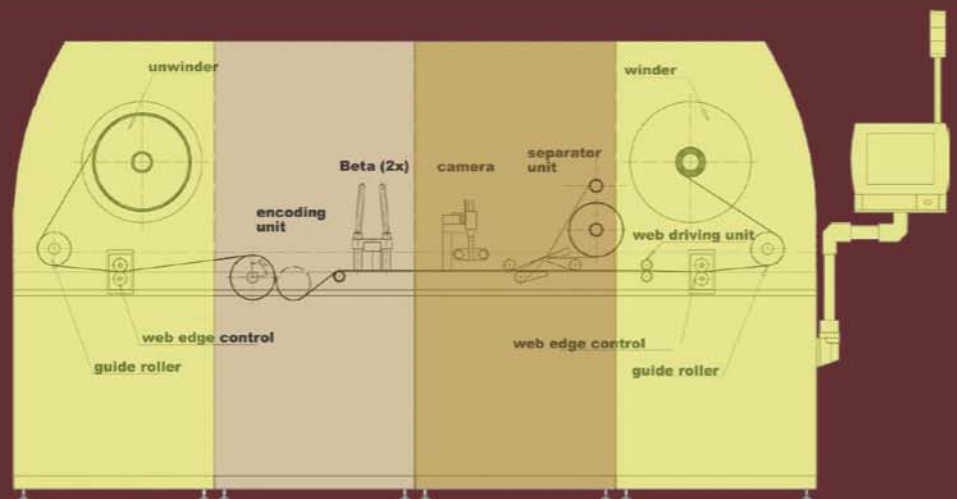
To meet both these challenges, Atlantic Zeiser has developed an innovative and compelling solution: the TAGLINE, the high-speed RFID Smart Label Personalization System, removes the steps of RFID tag encoding and quality control from the packaging process. Atlantic Zeiser has now created the technical means that allow manufacturers of various products to meet the market requirements through the use of RFID technology while maintaining maximum rates of production, and without compromising absolute quality control.

Radio Frequency Identification tags are used to identify and register products on a non-contact basis using radio-frequency queries from an RFID transceiver.



TAGLINE - up to 40'000 labels/h - the high-speed RFID Smart Label Personalization System from Atlantic Zeiser

- 100 % quality control of RFID tags
- more than 10 times the speed of existing encoding technologies
- simultaneous RFID high-speed encoding and optical OCR/bar code marking
- printing of information onto the label (for data back-up), optionally with security inks
- 100 % data consistency between bar code and RFID code
- faulty tags are identified and optionally removed and replaced
- option for encryption of RFID tags



The TAGLINE works on a reel-to-reel basis. The uncoded tags are placed on a carrier foil which runs through the machine and is wound when the tags have been processed, i.e. encoded, marked and tested (reader/camera).

TAGLINE - your entry to single item tagging

With the TAGLINE high-speed RFID Smart Label Personalization System, Atlantic Zeiser takes the steps of RFID tag encoding and quality control out of the packaging process. By using 8 read/write heads simultaneously, the TAGLINE is capable of carrying out full quality control at the same time as the encoding of the tags. And all this at more than 10 times the speed of the fastest of the existing encoding units! Labels can even be printed with variable data (numbers and/or bar codes) or with additional security features (invisible ink markings) without any loss in speed. Following the quality control, the rolls of encoded RFID tags can be inserted into the packaging process. This method ensures productivity gains combined with a guarantee of optimum quality.

The new high-speed system for RFID smartlabel personalization offers a broad range of possible uses. It has been developed specifically for encoding, marking and selecting RFID transponders (tags). As a result, one obtains only those tags that are working, with 100 % verification.

1. Base Module

The system is based on a tape winding (single web) and control unit. The reliable mechanical design of this chassis permits a continuous and error-free tape winding, which is a precondition for the high speed at which the TAGLINE system operates.

The central PC control system monitors, controls and logs the entire production process of the installation. This allows fully automatic processing of the RFID labels. It guarantees that each RFID label is individually programmed, printed and checked and, if defective, automatically separated out – with all functions performed in real time. Integrated label and meter counters also ensure highest security.

2. RFID Encoding Module

The heart of the TAGLINE is the rotary RFID encoding module developed by Atlantic Zeiser. The module consists of 8 independent high frequency chip encoding units, which are mounted on a rotating shaft. The radio antennas of these encoding modules are placed around the rotating shaft.

The encoding is carried out by a read/write cycle, thus checking immediately whether the information that was sent to the tag is correctly stored. The „rotating“ reader design offers a solution capable of producing up to 40'000 labels/h.

3. Ink jet Marking

As an option, the TAGLINE can be fitted with an ink jet marking module using inks developed in-house by

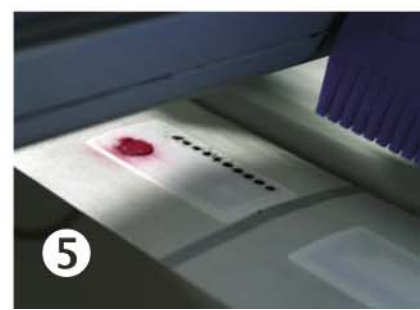
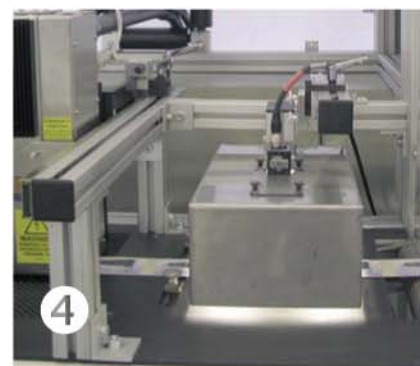
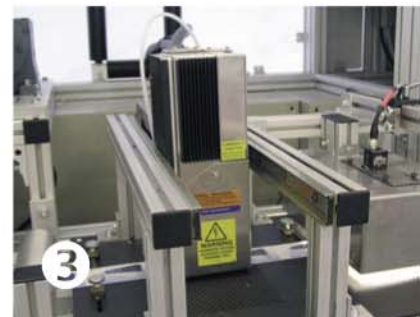
Atlantic Zeiser (standard and security inks). The inline control unit ensures 100 % data consistency of printed (OCR/bar code) and encoded (RFID) information.

4. Camera Control System

The Atlantic Zeiser Unique Vision camera control system verifies the printed data and checks for consistency with the electronic data.

5. Cancellation Unit

If a tag's programming is faulty for any reason, this information is logged and sent to a cancellation station. Tags that cannot be encoded correctly will be voided by marking them with ink spots.



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Technical specifications - System data

Dimensions	Length:	3'660 mm	144.1 inches
	Width:	869 mm	34.2 inches
	Height:	2'100 mm	82.7 inches
Weight	Approx. 700 kg		
Noise	≤ 75 dB (A)		
Power supply	400 VAC ± 5 % / 50...60 Hz / three phases + neutral + PE / 32 kVA		
Ambient temperature	5 - 30° C		
Relative humidity	20 - 80 % at 25° C not condensing		
Compressed air supply	6 bar		
Air consumption	Approx. 10 liters/min (with maximum configuration)		

Technical specifications - Production data

Label production rate	Up to 40'000 labels/h with CR80 format - paper, PET (50 - 150 g/m ²), encoding 64 characters at 106 kBit/s, mifare® ultralight, throughput of smaller labels sizes than CR80 will be higher, exact number to be determined.
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Technical specifications - Modules

Winder/unwinder	Diameter (max.):	550 mm
	Web width:	30 - 150 mm (only single web)
	Core diameter:	76 mm
	Format length:	30 - 220 mm
	Web speed:	up to 80 meters/min
HF reader (rotative)	Working frequency:	13.56 MHz (UHF optional)
	Compatible with ISO 15693, 14443, 18000, EPC Class2 - CE conform	
Cancellation unit	Control unit with marking head (80 µm jet diameter) 2 liter ink tank	
PC control system	Intel Pentium, 1 x Lan RJ45 (10/100 Mbps), Win XP Professional	