

Cotton Interlaced



Premier Evolvics

Premier Evolvics Pvt. Ltd. is a leading Indian manufacturer of quality testing and online monitoring equipment for the textile industry. Premier's philosophy of "Intelligent Technology", "Intelligent Solutions" and "Intelligent Support" is designed to address the challenges, while at the same time making it easier for the textile producer to achieve his quality goals.



The Initial Situation: Automated Cotton Fiber Testing Machines



One of the fastest emerging worldwide economies, India is increasingly using digital machine vision-controlled automation as a consequence of higher quality standards and rising labor costs. The textile industry, one of the leading industries of the country, is at the forefront of this evolution: probably ahead of other industries in terms of automation, it is already conducting the next step: migrating from analog to fully digital image processing systems.

Cotton is one of the most commonly used fabrics in the textile industry and is part of everybody's everyday life. Yet it remains a natural material with a wide spectrum of varieties and quality grades. Assessing the quality of the raw fibers is a complex activity taking into account a large number of parameters such as the length, the strength, the elongation, the color (reflectance, yel-

lowness) or the number of trash modules (leaves, seeds, dirt,...) caught in the fibers.

The Premier ART (Automated Rapid Tester) from Premier Evolvics is an innovative machine designed to replace humans in these quality tests. The main advantages of this automated solution are that it operates faster (up to 150 samples per hour) and eliminates the subjectivity of human perception.

Critical measurements such as fiber length and length uniformity, color and trash rate are done using an optical solution. Cotton samples are placed in a special box with a transparent bottom and inspected by a built-in camera combined with the appropriate lighting. The images are processed by software modules evaluating the fiber length, color quality and the percentage of dark particles (trash). Other characteristics of the cotton are measured with non-optical methods (e.g. strength or micronaire, which describes both the maturity and fineness of the cotton fiber) using elongation and airflow.



The Challenge: Cost-Effective Migration from Analog to Digital

Previously, the camera used was an analog CCD camera with interlaced scan combined with a frame grabber and a licensed image processing system. An alternative solution was offered to Premier Evolvics by Lucid Imaging, a leading supplier of machine vision solutions in the Indian market and Allied Vision Technologies' distribution partner in India.

The Solution: AVT Guppy Digital Camera With Interlaced Sensor

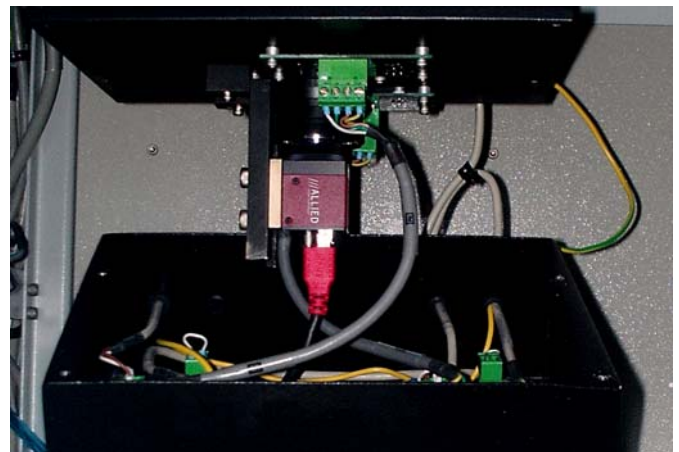
The package developed by Lucid Imaging included the migration from an analog to a digital interface and the replacement of the licensed image processing software with an open-source based application. This option offered both quality and cost benefits: the full digital data transmission increased the reliability of the system while cutting the frame grabber and the open source software helped save license costs. That way, Premier Evolvics could migrate to a full digital image processing system at a cost that was lower than the cost of their analog system.

This was made possible by the unique Guppy digital cameras with interlaced sensors from Allied Vision Technologies. With the Guppy interlaced digital cameras, Premier Evolvics found a digital alternative to their analog camera delivering the same resolution and the same interlaced readout technology. Instead of an analog connectivity, the AVT Guppy interlaced camera is equipped with a FireWire IEEE 1394a digital interface enabling up to 25 frames per second at full resolution.

"Because of the similar interlaced sensor technology, Premier Evolvics could take the benefits of a migration to a digital interface without having the drawbacks", explains Anand Chinnaswamy, Managing Director of Lucid Imaging. *"No significant changes had to be done to the system architecture such as lighting or software algorithms since the image data delivered by the AVT Guppy have the same specifications as those delivered by the analog camera".*

The Guppy family of digital machine vision cameras offers a combination of interlaced sensor with digital interface which is unique in the market. These entry-level cameras are equipped with the same sensors as the most common analog cameras still widely in

use in industrial image processing systems and are therefore specially designed to facilitate the migration from analog to digital data transmission. *"With the AVT Guppy interlaced cameras, changing the camera does not necessarily imply changing the whole architecture of the system, which is often a hurdle for users of an analog system",* explains Ingo Lowerendt, Product Manager of Allied Vision Technologies. *"These digital interlaced cameras make the migration easy and affordable, as Premier Evolvics' example perfectly demonstrates".*



Customer Satisfaction: Successful Migration and Cost Reduction

V. Srinivasan, Head – Business Unit Laboratory Testing and Machine Vision Systems of Premier Evolvics, is also delighted by the success of the migration. *"Thanks to the solution offered by Lucid Imaging using interlaced digital cameras from Allied Vision Technologies, we could achieve a smooth transition from analog to digital, offer our customers state-of-the-art digital technology and save costs at the same time",* he says.

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V. Srinivasan, Premier Evolvics

Allied Vision Technologies in India

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