

**The RFID Crystagram, which combines a hologram and a contactless IC chip, wins the Excellence in Packaging award at The Excellence in Holography Awards 2008. Toppan Printing, Hitachi and Hitachi Chemical are the first Japanese companies to receive the award.**

The RFID Crystagram is a label that combines a hologram (\*1) and a contactless IC chip. It was jointly developed by Toppan Printing Co., Ltd. (hereafter Toppan Printing; Head office: Chiyoda Ward, Tokyo; President & CEO: Naoki Adachi), Hitachi, Ltd. (hereafter Hitachi; Head office: Chiyoda Ward, Tokyo; President and Chief Executive Officer: Kazuo Furukawa) and Hitachi Chemical Co., Ltd. (hereafter Hitachi Chemical; Head office: Shinjuku Ward, Tokyo; President and Chief Executive Officer: Yasuji Nagase). In a first for Japanese companies, the RFID Crystagram has received the Excellence in Packaging award (top award in the packaging category) at The Excellence in Holography Awards 2008 (sponsored by IHMA).

The Excellence in Holography Awards are held by IHMA (International Hologram Manufacturers Association) which is comprised of around 90 of the world's major hologram manufacturers. They began in 1993 and in 2008 were held for the 16<sup>th</sup> time. These awards recognize the year's most outstanding new hologram products and technologies.

Two new products and technologies are nominated in each of 7 categories - Security/Authentication, Packaging, Promotion/Illustration, Industrial Applications, New Holographic Product, New Holographic Technique and the Brian Monaghan Award For Business Innovation – and winners are selected by a panel of experts.

The winning RFID Crystagram was recognized for being a revolutionary product where an IC chip is embedded in a hologram. In addition to the traditional main use of holograms in security devices, it has become possible to use them for traceability in product distribution and manufacture. The RFID Crystagram also has high quality design and was praised for improving the package design of the products to which it is attached.

Toppan Printing and Hitachi will proactively pursue sales of the RFID Crystagram and related systems in fields that require traceability in the distribution and manufacture of products needing visual authentication such as luxury brand goods, medical products and foods in both domestic and overseas markets.

### **The RFID Crystagram**

The RFID Crystagram is a label with which one of the world's smallest contactless IC chips, the  $\mu$ -Chip (\*3) developed by Hitachi, has been incorporated into Toppan Printing's original "Crystagram" (\*2) hologram by employing Hitachi Chemical's mounting technology.

By affixing the RFID Crystagram to brand goods and various other products, a visual counterfeiting

check is possible with the Crystagram and it is also possible to trace products through production and distribution using the  $\mu$ -Chip. This means that prevention of counterfeiting and illegal distribution as well as effective management and traceability are possible with just a single RFID Crystagram. The use of de-metallization, whereby the Crystagram can be processed into a detailed form, enables the design of the RFID Crystagram to be freely devised. Additional components such as an antenna are not required since the Crystagram's aluminum deposition section acts as the  $\mu$ -Chip's receiving antenna for radio waves. Therefore, the RFID Crystagram has extremely high design quality and can be used to enhance a product's image.

## Notes

### \*1: Hologram

Holograms make use of the interference pattern created when two rays of light overlap to record and reproduce 3D images. They can give a unique luminance or sense of high-quality through images with a 3D effect and rainbow-like color changes, and are security devices which are extremely difficult to counterfeit or forge. Toppan Printing led the industry by starting hologram research and development in 1967. Holograms developed were quickly adopted for use on credit cards and currently the company's products are employed for a wide range of items such as product coupons, gift tokens, checks, and verification of authenticity for export goods.

### \*2: Crystagram

Electron beam technology used in semiconductor component manufacture is applied to create bright, high-definition images and achieve a unique visual effect. Since sales began in 1994, Crystagrams have been used predominantly for security applications such as for credit cards and securities.

### \*3: $\mu$ -Chip

This is a contactless IC chip developed by Hitachi. It is the world's smallest class of IC chip, measuring 0.4mm square and has a read-only ID with a memory capacity of 128 bits (38 digits in a decimal system). Due to its small size and thinness it has become possible to attach it to a wide range of materials and parts, including paper, to which attachment was previously difficult. Hitachi provides expansive business solutions, including optimization of the efficiency of corporate management or development of new businesses, centered on functions using the  $\mu$ -Chip such as data processing, determination of product authenticity and recycling of products and resources. The  $\mu$ -Chip is the ucode approved tag of the Ubiquitous ID Center (Chairman: Ken Sakamura, Professor of the University of Tokyo, Chairman of the T-Engine Forum and Chairman of the YRP Ubiquitous Networking Laboratory).

## Trademarks

-Crystagram is a registered trademark of Toppan Printing.

- $\mu$ -Chip and the  $\mu$ -Chip logo are trademarks or registered trademarks of Hitachi in Japan and other countries.

-Other company and product names are the trademarks and registered trademarks of the respective companies.

**Important Note: This item is not available for sale in the United States at this time. For more information, please contact Nori Fuji at 732 469 8400 ext 2501.**