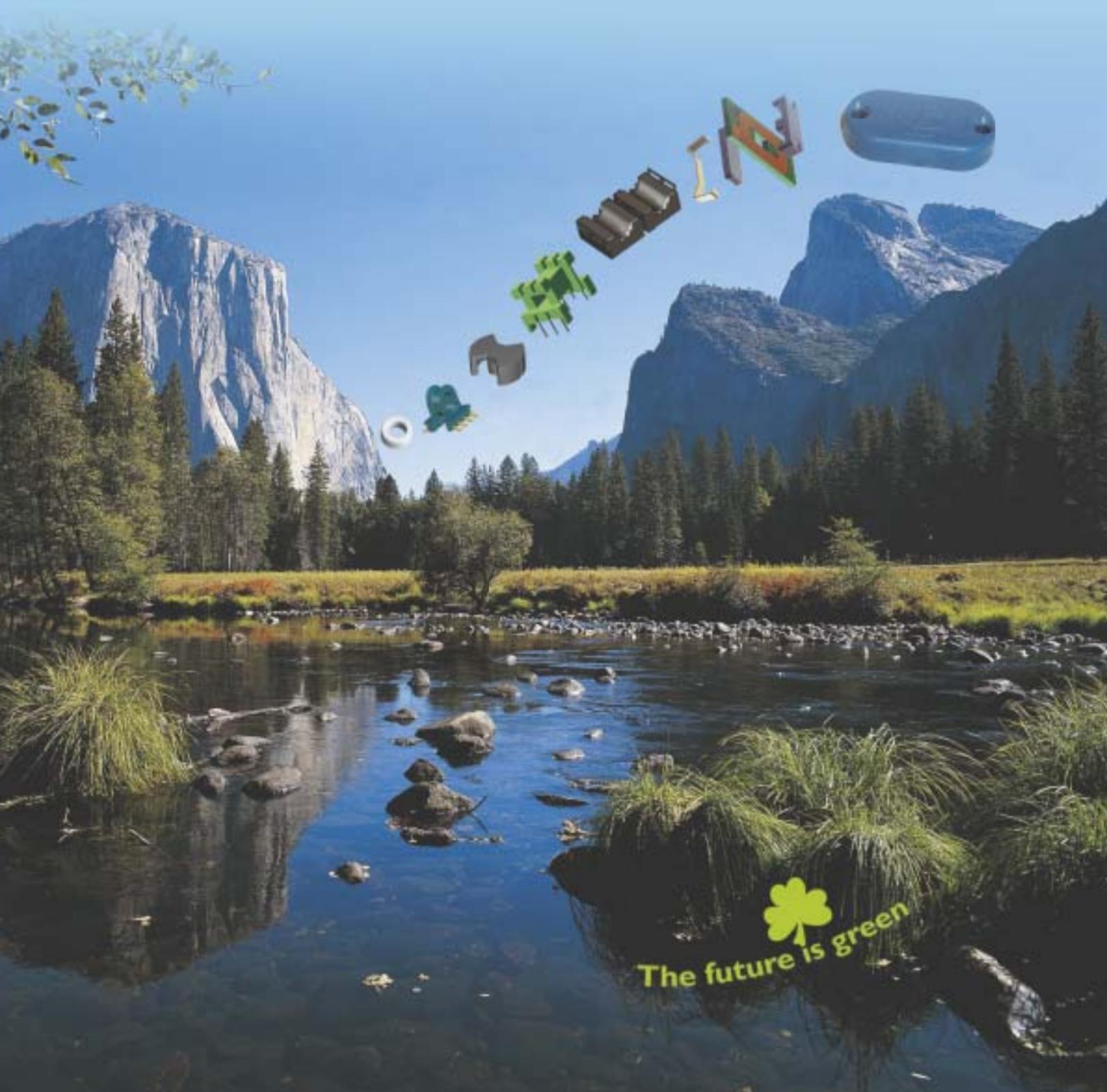


COMPANY PROFILE




The future is green



FERROXCUBE

A YAGEO COMPANY

WHO WE ARE.....

Company profile

Building on our Philips Magnetic Components heritage, FERROXCUBE can offer customers the highest level of support in the development of their new innovative designs. Our competencies cover soft ferrite products, accessories, metal alloy ring cores, RFID tags and measurement set-ups to characterize ferrite products. All developed to meet today's demanding product and material specifications and environmental requirements. As a leading innovator in ferrite-ceramic technology, we offer a broad range of soft ferrite cores, accessories and EMI suppression products to support equipment manufacturers in their drive for greater miniaturization, reduced power consumption and lower electromagnetic interference. We also offer extensive design-in support including application information and software to help designers optimize their new designs. Contact us to find out! FERROXCUBE, widely recognized as a leading supplier of ferrite components, has manufacturing operations, sales offices and customer service centers all over the world. Ferrite components and

accessories, and metal alloy ring cores from FERROXCUBE are used in a wide range of applications, from telecommunications through consumer electronics to automotive, EMI suppression and power supply.

Business excellence

All groups within our organization work to the standards of Business Excellence and are fully committed to the principle of consistent and continuous improvement at all levels of our organization. This involves everyone including our suppliers, and forms the basis for successful relationships.

Quality & environmental approach

We at FERROXCUBE regard complete customer satisfaction as our guiding principle. That's why we set and maintain absolutely the highest quality standards in our business. Not just in our products but in our service and customer relations as well. Within FERROXCUBE, quality is the way of life. In addition to assure outstanding quality in both products and services, all our production centers are certified to ISO 9001/9002 standards.

Our commitment towards excellence also applies to the environment. We strive for highest standards of health and safety for everyone. By developing clean processes, reducing industrial waste, eliminating hazardous substances from our products and reducing the environmental impact of our packaging, FERROXCUBE is taking care of the environment and health and safety of everyone. All our manufacturing sites meet or are set up to meet the ISO 14001 environmental standard. In line with worldwide lead-free legislation, FERROXCUBE has introduced lead-free plating on all of our formerly tin/lead containing products. In Europe, the directives on Waste Electrical & Electronic Equipment (WEEE, 2002/96/EC) and Restriction on Hazardous Substances (RoHS, 2002/95/EC) require electronic components to be lead-free since 1st of July 2006, which we comply strictly.

Business lines

As the world of electronics in which soft magnetic products are applied can roughly be divided into three main parts, we have named our business lines after them :

• **Power conversion**
Covering all the ferrite and

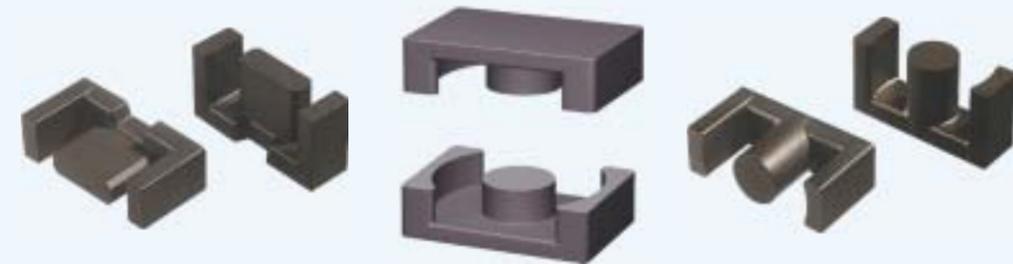
metal alloy cores and materials giving the best performance (e.g. lowest core losses in combination with small volumes) for power conversion in all kinds of applications. From low to high frequencies (10 MHz), low to high flux densities (1.5 T) and over a wide temperature range, we can supply you with the best solution. Soft magnetic cores of this business line are used in all types of modern electronic equipment in which switched mode power supplies are applied.

• Signal processing

This business line incorporates the typical cores and ferrite materials for signal processing e.g. in filters and transformers in modems for telecom technologies like cable & xDSL. Stable ferrite properties for various application conditions are important here to keep the transmitted signals undistorted, and getting the best performance.

• EMI suppression

To reduce EMI to a minimum, we have a broad range of products available, all with their typical shapes and frequency ranges of suppression. This business line is not covering ferrites cores only, as we also deliver small suppression chokes and absorber sheet.



Power conversion



Signal processing



EMI suppression

 **FERROXCUBE**
A YAGEO COMPANY

GLOBAL SERVICE & TECHNOLOGY

WHO WE ARE.....

Radio frequency identification (RFID) is a technique of contactless identification finding rapidly increasing employment. Ferrite antennas in HF materials improve the working distance greatly, thus opening new applications. We supply metallized antenna cores in a variety of custom shapes and in materials with very good temperature stability. A special product is the Ferroxtag, a complete RFID transponder with IC and ferrite antenna. It's capable of operating when attached on metallic subjects due to a special antenna design.

Besides these three main business lines, we have two special lines .

• Accessories

Having bobbins, clips and caps covering a major part of our ferrite core range, we offer a complete solution for our customers in designing inductive components. All coil formers meet the UL94 V-0 standard and all mounting pins are already lead-free.

• Special Ferrites

Supporting the scientific and industrial world, Special Ferrites can deliver dedicated products, e.g. large cores for particle accelerators, meeting their specific demands. Special Ferrites can also be used for

fast prototyping. An important tool for any designer who quickly wants to test a new core shape, without investing in a tool.

In the USA, we have access to fast prototyping facilities via third parties. Our local R&D center in Taiwan is also capable of producing machined prototypes. As a result, FERROXCUBE can support the customer everywhere with a fast service, tailored to his needs for totally new designs.



Special Ferrites



Accessories

On top of this, FERROXCUBE can supply you with complete measuring equipment capable of measuring all the parameters like power loss density over both a wide frequency and temperature range, like we specify in our data handbook or website and needed as input of a customer's application.

Note that with our long experience in soft ferrites, we also produce our own ferrite powder – the basis for creating excellent ferrites – optimized for any end-application area.

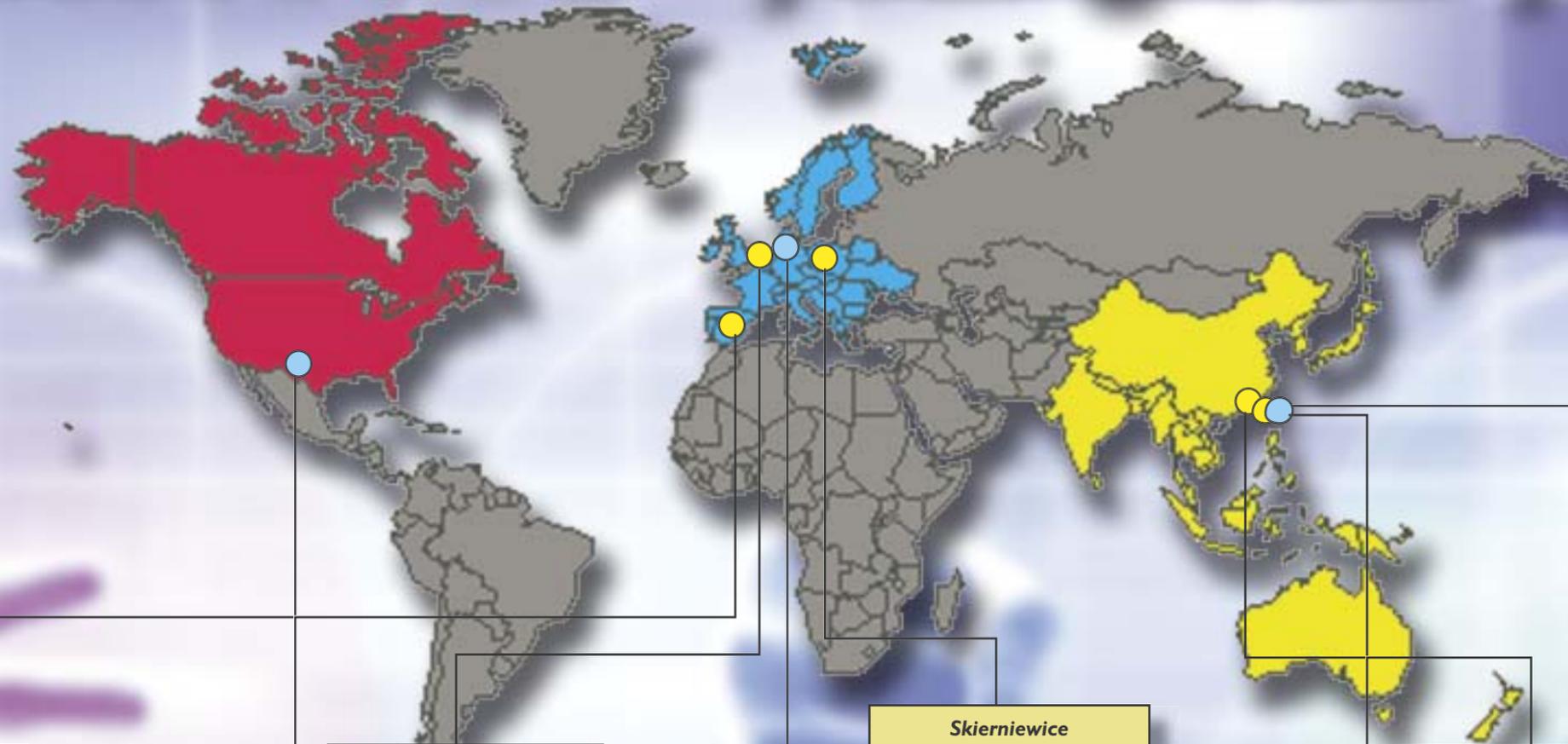
Our Global Representation

I. Development and Application centers

The research and development for soft ferrite products and bobbins and accessories can build on more than 50 years of experience in ferrite technology, the longest track record in industry. The R & D activities take place in several directions and teams.



FERROXCUBE - your global partner



**Guadalajara
Spain**
Manufacturing plant
Product ranges

- Toroids
- EMI-suppression products
- RFID transponder tags

Markets: Global

**Eindhoven
Netherlands**
R&D center

- Electronic engineering & Measurement technology

Markets: Global

**Skierniewice
Poland**
Manufacturing plant
Product ranges

- Advanced material design
- MnZn ferrite powders
- NiZn ferrite powders
- Ferrite cores for Power, Signal and EMI applications
- Special Ferrites
- Bobbins and Accessories

Markets: Global

**Dongguan
China**
Manufacturing plant
Product ranges

- Ferrite cores for Power, Signal and EMI applications

Markets: AP

**Hsinchu
Taiwan**
R & D center

- Product design
- Local application & design-in support

El Paso, USA
Regional sales office NAFTA

Branch offices Europe :
Hamburg, Germany
Nanterre, France
Sesto S. Giovanni, Italy
Skierniewice, Poland
Guadalajara, Spain
Uppsala, Sweden
Leatherhead, UK

Branch offices AP :
Hsinchu, Taiwan
Dongguan, China
Suzhou, China
Singapore, Singapore

WHERE WE ARE.....

WHO WE ARE.....

Eindhoven, The Netherlands

The headquarters of FERROXCUBE are located in Eindhoven. Apart from staff functions there is also the research in electronic engineering & measurement technology.

Marketing communications

We deliver application and product information, available in our publications and tools:

- Data handbook and a CD with electronic tools to simulate the magnetic functions and helping to find the best magnetic solution for a specific application.
- Application notes explaining how magnetic components can be applied for dedicated and advanced applications.
- Product brochures highlighting the availability of new products and explaining the intended applications
- Material leaflets making the customers aware of new innovated advanced materials with improved specifications for optimizing the magnetic designs.

Hsinchu, Taiwan

To be in the region where the world for electronics is expanding, we have a strong local advanced product design and application center located at the Science Based

Industrial Park in Hsinchu. A team of development engineers deploys the latest technologies for soft ferrite cores. The application team fully supports customers with design-in activities and is giving technical advice as well. To make optimal use of our global capabilities, they stay in close contact with the engineering teams in our factories. They are experts creating new ideas and innovations in order to meet market requirements. The Hsinchu team is capable to provide custom-made ferrite cores on short notice to meet the customer's specification.

Additionally, there is an application engineering support in all factories, set up to introduce new products within the standard factory capabilities. With the closest contact possible to the production site, it ensures that such products are smoothly and quickly transferred from development to mass production.

2. Factories

Skierniewice, Poland

FERROXCUBE in Poland, also named Ferpol, started operations at the end of 1998 and hasn't stopped growing yet.

Having an output of 4.5 kilotons of ferrite products – clearly the largest ferrite core production site in Europe – Ferpol is delivering the full range of soft ferrite cores for power, signal and EMI applications to its customers.

Soft ferrite materials

As we produce our own powders we have a special team designing new, high-end materials by inventing the best raw material compositions in relation to their specific and optimized processing steps. Because of the extremely critical nature of the specifications, these materials are designed in close interaction with our product design and application teams.



Skierniewice

Product design

If your requirements cannot be met with ferrite cores from our standard ranges, this team is at your service to make the necessary core calculations and the entry to machine first prototypes from solid blocks or press and sinter small series.

Ferpol produces manganese-zinc ferrite powders for the company. With a powder production capacity of 12..14 kilotons, Ferpol can supply all our factories with high-end ferrite powders to fulfil today's most demanding specifications. Additionally, it produces nickel-zinc ferrite powders, primarily for Hispafer and Special Ferrites.



Guadalajara

The activities of the business lines Accessories and Special Ferrites are also located in Skierniewice.

Guadalajara, Spain

Widely known as Hispafer, this ferrite factory produces a complete range of toroids, antenna rods, EMI-suppression products and Ferroxtag RFID tags with a total capacity of 2..3 kilotons.

It was established in 1970. Over more than 30 years of experience has led to a worldwide-recognized capability from which entrepreneurial spirit is visible in their new high-end technologies, processes and products.

Our design and application oriented development process gives Hispafer the ability to convert new technologies into new products. The close relationship with all other competence centers within FERROXCUBE, as well as partnerships with key-customers make it possible to guide all initiatives towards their goal : to be the customers first choice.

Dongguan, China

FERROXCUBE in Dongguan started mass production in July 2001. The production capacity has been growing rapidly over the last years – the current output is around 6..7 kilotons –

and is still expanding. The production site is located in Dongguan city, Qingxi town and close to our customers in the Guangdong province and Hong Kong. This enables us to deliver our ferrites by truck within hours, making a very short door-to-door leadtime possible.

3. Regional sales offices and customer service centers

Dedicated sales teams globally represent FERROXCUBE. In all three regions – America, Europe and Asia/Pacific – we have a regional sales office or scattered strategically over the area a number of customer service centers.

Details can be found in the map on pages 6 and 7.

These offices and centers are close to and in regular contact with all our customers for the best support. The sales and product engineers from the sales offices and customer service centers are in direct contact with our teams in the factories and development/application centers. In this way, actual information on (new) products, application and design-in support, but also samples, can immediately be arranged for customers.



Dongguan



GLOBAL SERVICE & TECHNOLOGY

FERROXCUBE - a full range of ferrite products



WHAT WE MAKE.....