



Customised RFID and NFC labels

Solutions for complex requirements

Oberhaching, December 2019

RFID and NFC technology has become an integral part of our everyday lives. Be it for mobile payment, access control in companies or at the turnstile of a ski lift station - almost everyone uses RFID and NFC technology quite naturally and usually without even knowing it.

In the industrial sector, production, storage and logistics processes as well as maintenance, servicing and inventory processes have been implemented faster, more securely, traceably and cost-effectively for many years now thanks to RFID and NFC technology. RFID and NFC technology is the most important cross-sectoral technology in the context of the IoT and Industry 4.0.

The more complex the processes to be optimized in a company become, the higher the demands on the RFID/NFC transponder to be used. smart-TEC GmbH meets these challenges. Consequently, not only the shape, size, type of attachment and materials used for the RFID/NFC transponder are optimally adapted to the respective project requirements. The chemical, thermal and mechanical resistances required for the project are also taken into account in the development of the customer-specific RFID/NFC transponders. Performance measurements are carried out at our in-house measurement laboratory to ensure that the RFID/NFC transponders and readers work together seamlessly.

In addition to the above-mentioned requirements for RFID/NFC transponders, the market increasingly demands highly specialised printing and chip coding. This applies mainly to the RFID and NFC label area. Together with a respected machine manufacturer in this field, smart-TEC has developed a fully automatic printing and coding machine. "This machine enables us to perform even complex chip coding and printing such as logos, barcodes, 2D barcodes and plain text numbers fully automatically. Since printing and chip coding are carried out in an integrated production process, we can also ensure that the printing and chip content match 100%," says Gerhard Hölzl, RFID developer at the RATHGEBER Group.

In addition, incorrect and duplicate numbers are avoided - features that are extremely important for many applications. This is the only way to ensure that an RFID project can be rolled out quickly and smoothly.

Production of RFID and NFC labels. An article by Gerhard Hölzl, Head of RFID Development: [YouTube](#)



RFID metal nameplate from smart-TEC according to GS1 standard



RFID metal type plate from smart-TEC for Deutsche Bahn AG



RFID metal nameplate from smart-TEC according to GS1 standard

About smart-TEC:

smart-TEC GmbH & Co. KG is a company of the RATHGEBER Group in Oberhaching. For 20 years we have been developing and manufactured customer-specific RFID and NFC transponders. The spectrum ranges from self-adhesive, printed RFID and NFC labels to towards robust, durable, weather and temperature resistant transponders for the industrial sector. The majority of RFID transponders are certified for use in explosion-proof areas. In cooperation with system partners, *smart-TEC* also offers comprehensive project support.

Core competencies:

- Robuste, langlebige, industrietaugliche, witterungs- und temperaturbeständige RFID- und NFC-Transponder- auch für den Ex-geschützten Bereich
- Customized RFID and NFC labels, printed or blank, with various chip technologies, frequency ranges and forgery-proof or tamper-proof features
- Comprehensive NFC know-how in the Competence Center
- Competent project consulting and support

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