

TAGnology for your Future



Company Presentation *smart-TEC* GmbH & Co. KG



smart-TEC – A member of the RATHGEBER Group



The RATHGEBER-Group



Andreas Schrägle
Management

1948

RATHGEBER GmbH & Co. KG was founded

Group

RATHGEBER GmbH & Co. KG, *smart-TEC* GmbH & Co. KG,
RATHGEBER k.s., RATHGEBER Sp.z o.o.,



Andrea Schrägle
Management

Locations

Headquarter in Oberhaching / Munich
Production I (Mindelheim / Allgäu),
Production II (Bystrice / Czech Republic (nearby Brno))
Sales Office in Breslau, Poland



Klaus Dargahi
Management
smart-TEC

Employees

Approximately 350

Annual turnover in Euros

2023: 41,5 million, 2022: 41,7 million, 2021: 37,7 million, 2020: 31,8 million, 2019: 34,7 million,
2018: 35,5 million 2017: 34,8 million, 2016: 30,6 million, 2015: 30,1 million, 2014: 28 million;

smart-TEC Facts & Figures

- More than 20 years of experience in RFID and NFC technology
- Worldwide network (RFID reader manufacturer, RFID systems integrator, software etc.)
- Active membership in different professional associations (AIM, RFID-Competence Center, GS1, DDCC, IDTA etc.)
- All processes and products achieve high quality controls and environmental management (DIN EN ISO 9001:2015, DIN EN ISO 14001:2015)
- Strong focus on customized solutions
- Strong consultancy competence in processes, optimization potential, Industry 4.0 and Internet of Things (IoT)
- More than 30 different production technologies
- Over 25 million RFID and NFC transponder in successful use worldwide



smart-TEC Core Competencies

- Specialized in robust, durable and weatherproof industrial transponder as in RFID /NFC labels, printed, blank and showing different security features
- Materials, design, form, print, chip technology, chip programming, size and adhesive property are specifically customized to project requirements
- Full project support: customized consulting, creation of technical feasibility studies, project design, definition of suitable RFID hard and software components, project implementation and support



smart-TEC is expert in customized RFID and NFC technology.
In cooperation with our partner network, we increase the process efficiency of our customer projects.

Our vision:
„Fit for Industry 4.0 and IoT
because of *smart-TECs*
RFID and NFC competencies.“



Certified quality and environmental management

- Certified quality according to DIN EN ISO 9001:2015
- Environmental management according to DIN EN ISO 14001:2015

- The RATHGEBER Group has been carbon neutral since 2011

EU Declaration of Conformity

Company: smart-TEC GmbH & Co. KG
 Address: Kolpingring 3, 62541 Oberhasling

Product category: Passive LF (125 kHz) RFID Tag
 Passive HF (13.56 MHz) RFID Tag

Model name: smart-LABEL, smart-KEY, smart-PLATE, smart-PET, smart-CARD, smart-FLEXLINE, smart-CHROMOTION, smart-DOIME

The product is in compliance with the requirements of the following European harmonisation legislations:

Harmonisation legislation:	Title
2014/53/EU, 2014/04/18, 2011/65/EL, 2011/06/08	Radio equipment Directive (RED) Restriction of the use of hazardous substances Directive (RoHS)

The compliance with the requirements of the European harmonisation legislations was proved by the application of the following harmonised standards and technical specifications:

Essential requirements:	Reference:
Health and safety (article 3.1(a) RED)	EN 62368-1:2014+AC:2015
Electromagnetic compatibility (article 3.1(b) RED)	EN 62364:2010 EN 301 488-1 V2.2.3 EN 301 488-3 V2.1.1 EN 300 328 V2.1.1
Radio equipment (article 3.2 RED)	N/A
Equipment within certain categories or classes (article 3.3 RED)	N/A
Hazardous substances (RoHS)	EN 50581:2012

Additional information: —

The object of the declaration described above is in conformity with Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

Oberhasling, 16 April 2021

Klaus Dörig, General Manager

EU Declaration of Conformity

Company: smart-TEC GmbH & Co. KG
 Address: Kolpingring 3, 62541 Oberhasling

Product category: Passive LF (125 kHz) RFID Tag
 smart-LABEL, smart-KEY, smart-PLATE, smart-PET, smart-CARD, smart-FLEXLINE, smart-CHROMOTION, smart-DOIME

Model name: smart-LABEL, smart-KEY, smart-PLATE, smart-PET, smart-CARD, smart-FLEXLINE, smart-CHROMOTION, smart-DOIME

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Essential requirements:	Reference:
Health and safety (article 3.1(a) RED)	EN 62368-1:2014+AC:2015
Electromagnetic compatibility (article 3.1(b) RED)	EN 62311:2008 EN 301 488-1 V2.2.3 EN 301 488-3 V2.1.1 EN 300 328 V2.1.1
Radio equipment (article 3.2 RED)	N/A
Equipment within certain categories or classes (article 3.3 RED)	N/A
Hazardous substances (RoHS)	EN 50581:2012

Additional information: —

The object of the declaration described above is in conformity with Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

Oberhasling, 19 April 2021

Klaus Dörig, General Manager

UK Declaration of Conformity

Company: smart-TEC GmbH & Co. KG
 Address: Kolpingring 3, 62541 Oberhasling

Product category: Passive LF (125 kHz) RFID Tag
 Passive HF (13.56 MHz) RFID Tag

Model name: smart-LABEL, smart-KEY, smart-PLATE, smart-PET, smart-CARD, smart-FLEXLINE, smart-CHROMOTION, smart-DOIME, smart-VRIST

The product is in conformity with the following United Kingdom Regulations:

Designation legislation:	Title
SI 2017 No. 1296, as amended by SI 2019 No. 698, SI 2012 No. 3032, as amended	Radio Equipment Regulation 2017 The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 (RoHS)

The compliance with the requirements of the United Kingdom Regulations was proved by the application of the following designated standards:

Essential requirements:	Reference:
Health and safety (Regulation 6.1(a))	BS EN 62368-1:2014+AC:2015 BS EN 62311:2008
Electromagnetic compatibility (Regulation 6.1(b))	ETSI EN 301 488-1 V2.2.3 ETSI EN 301 488-3 V2.1.1 ETSI EN 300 328 V2.1.1
Radio equipment (Regulation 6.2)	ETSI EN 302 208 V2.1.1
Hazardous substances (RoHS)	BS EN IEC 63000:2018

Additional information: —

The object of the declaration described above is in conformity with UK legislation Radio Equipment Regulation 2017 and SI 2012 No. 3032, on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

Oberhasling, 1 July 2022

Klaus Dörig, General Manager

UK Declaration of Conformity

Company: smart-TEC GmbH & Co. KG
 Address: Kolpingring 3, 62541 Oberhasling

Product category: Passive HF (855 MHz) RFID Tag

Model name: smart-LABEL, smart-KEY, smart-PLATE, smart-PET, smart-CARD, smart-FLEXLINE, smart-CHROMOTION, smart-DOIME, smart-VRIST

The product is in conformity with the following United Kingdom Regulations:

Designation legislation:	Title
SI 2017 No. 1296, as amended by SI 2019 No. 698, SI 2012 No. 3032, as amended	Radio Equipment Regulation 2017 The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 (RoHS)

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Radio equipment (Regulation 6.2)	ETSI EN 302 208 V2.1.1
Hazardous substances (RoHS)	BS EN IEC 63000:2018

Additional information: —

The object of the declaration described above is in conformity with UK legislation Radio Equipment Regulation 2017 and SI 2012 No. 3032, on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

Oberhasling, 1 July 2022

Klaus Dörig, General Manager

Urkunde Partner im Klimaschutz

ClimatePartner

Die smart-TEC GmbH & Co. KG setzt sich als Kunde von ClimatePartner aktiv mit folgenden Maßnahmen für den Klimaschutz ein:

- Erstellung der CO₂-Bilanz des Unternehmens
- Berechnung des CO₂-Fußabdrucks von Produkten
- Ausgleich der CO₂-Emissionen des gesamten Unternehmens inklusive Produktion und der eingesetzten Rohmaterialien durch die Unterstützung zertifizierter Klimaschutzprojekte

Reisepassnummer: 01.01.2021
 Gültig bis: 31.12.2021

Klaus Dörig
 Geschäftsführer
 (Bescheinigung Nr. 1241)

Selected references



and many more...

Competency and Service



RFID/NFC-Know-How

- All frequencies
- All types of chips



Printing technologies

- Flexographic printing
- Silkscreen printing
- TTR printing
- Digital printing



Material and finishing technologies

- Brushing
- Embossing
- Top coats
- Textured coats
- Lamination



Security features

- Hologram foil
- Security cuts
- Void foil
- 4D security



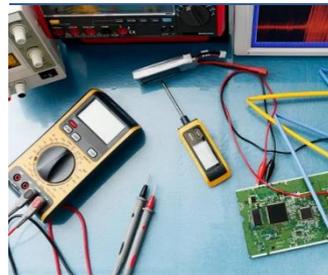
Customizing

- Individual shapes
- Printing and encoding
- Doming



System-integration

- Process analysis
- Cost-benefit analysis



Performance Measurements

- Performance analysis
- Measurements in the laboratory and at the customer's site

Discover the diversity of our products...

Product groups

RFID/NFC
Industrial transponder

RFID/NFC
Labels

RFID/NFC
Metal plates

RFID/NFC
Emblems

ATEX approved
transponder

RFID/NFC
Cards/Tickets
Key fobs

IDconnect
Software Solution



RFID/NFC Industrial Transponder



smart-DOME Classic / smart-DOME Freestyle:

- Robust, durable and weatherproof
- Printable and customizable according to customer requirements
- Available with different types of chips for all frequencies
- Free decision regarding shape, color and design
- Different types of mounting
- Also for high temperature applications
- Mount-on-Metal version for metallic surfaces

References:

1. *Berliner Wasserbetriebe*: maintenance and service
2. *Daimler*: maintenance tracking at single-lane hanging systems
3. *SpanSet*: identification of strap and lash belts for „life cycle“
4. *Stuttgarter Straßenbahn*: automated maintenance tracking at ÖPNV

RFID/NFC Labels



smart-LABEL

smart-LABEL:

- Very thin and self-adhesive
- Available with different types of chips for all frequencies
- Printed or blank
- Encoded and personalized

Reference:

1. *Continental*: controlling and lending of toll equipment
2. *Böhringer Ingelheim*: shipping optimization through bulk reading



smart-LABEL Security

smart-LABEL Security:

- Hologram
- Security cuts
- Micro printing
- Special chip encoding and programming
- Tamper protection

References:

1. *Tönnjes*: third license plate for windshield
2. *AUDI Stuttgart GmbH*: automated check of employees' driving licenses

RFID/NFC Metal Plates



smart-PLATE :

- Combination of metal plates and RFID technology
- Visual data lasered or printed
- Available with different types of chips for all frequencies
- Individual shapes
- Durable aluminum or V2A stainless steel
- Different mounting possibilities

References:

1. *Sulo*: identification of waste container for maintenance tracking
2. *BAYER*: service and maintenance tracking for machinery
3. *NisTech*: service and maintenance tracking for soundproofing walls
4. *Schweizerische Bundesbahn*: identification of safety-relevant components for maintenance tracking purposes

RFID/NFC Emblems



smart-CHROMOTION:

- High quality and robust plastic foil composite
- Highlights through micro prints, embossing and structures
- Available with different types of chips for all frequencies
- RFID / NFC technology integrated directly into the emblem

Referencies:

1. Haberkorn: Labeling of security equipment and assignment of functionality
2. AIREX: Intelligent sports mats with integrated NFC technology



RFID/NFC Cards, Tickets and Key Fobs



smart-CARD
(ISO standardized)



smart-CARD
(customized)



smart-KEY Logo



smart-KEY
Standard



smart-KEY Hybrid

smart-CARD:

- ISO standard or customized size and shape
- Available with different types of chips for all frequencies
- Printed or blank, programmed and personalized

References:

1. *Engel*: Control of authorizations for the calibration of injection molding machines
2. *SecuSuisse*: Hotel locking systems

smart-KEY:

- Customized, with a pleasant look and feel
- Different designs and colors, robust and durable
- Available with different types of chips for all frequencies (RFID and NFC technology in one smart-KEY)
- Long-term printing protected against abrasion and yellowing
- suitable for applications in an industrial environment

References:

1. *Jungheinrich*: Identification of drivers of forklifts
2. *DHL*: Locking system of the parcel boxes
3. *emz Hanauer*: Waste billing for private households using RFID technology
4. *PLAYMOBIL*: Access control and canteen billing

ATEX RFID transponder



ATEX / IECEx

II 2G Ex ia IIC T6/T4 Gb

II 2D Ex ia IIIC T80°C/T130°C Db

Benefits:

- Very good resistance to chemicals
- High heat resistance
- High resistance to environmental and weather influences
- Excellent suitability for metallic surfaces
- Customized design in terms of shape and color
- Personalization (printing or laser engraving of logos, barcodes, plain text etc.)

Application:

- Service & Maintenance
- Component labeling
- High-temperature processes
- production control
- Inventory systems
- Storage location labeling



IDconnect Software Solution



„The first step into the age of IoT (Internet of Things) and Industry 4.0 is the **digital labeling of a product or machine.**“

Your benefits at a glance:

- Information on a unique level (each product / machine is unique)
- Security and originality protection
- Access / data / customer evaluations via Google Analytics
- Quick adaptation to your corporate design
- Geo-based automatic adjustment of content
- No app necessary
- Flexible management and adaptation of information
- Easy upload and download function (texts, documents, images & videos)
- Time-controlled distribution of product and marketing news
- Links to websites and social media
- Data protection according to German law and GDPR

Performance Measurements



„**The range** of electrotechnical and physical parameters and influencing factors that must be taken into account for successful project implementation **is very extensive.**“



Offered performance measurements:

- Sensitivity of RFID transponders for the RF and UHF bands
- Read and write range of RFID transponders
- Optimization-dependent range/response field strength for alignment optimization of RFID transponders and RFID readers
- Measurements directly on site in the customer's working environment



Thank you for your attention