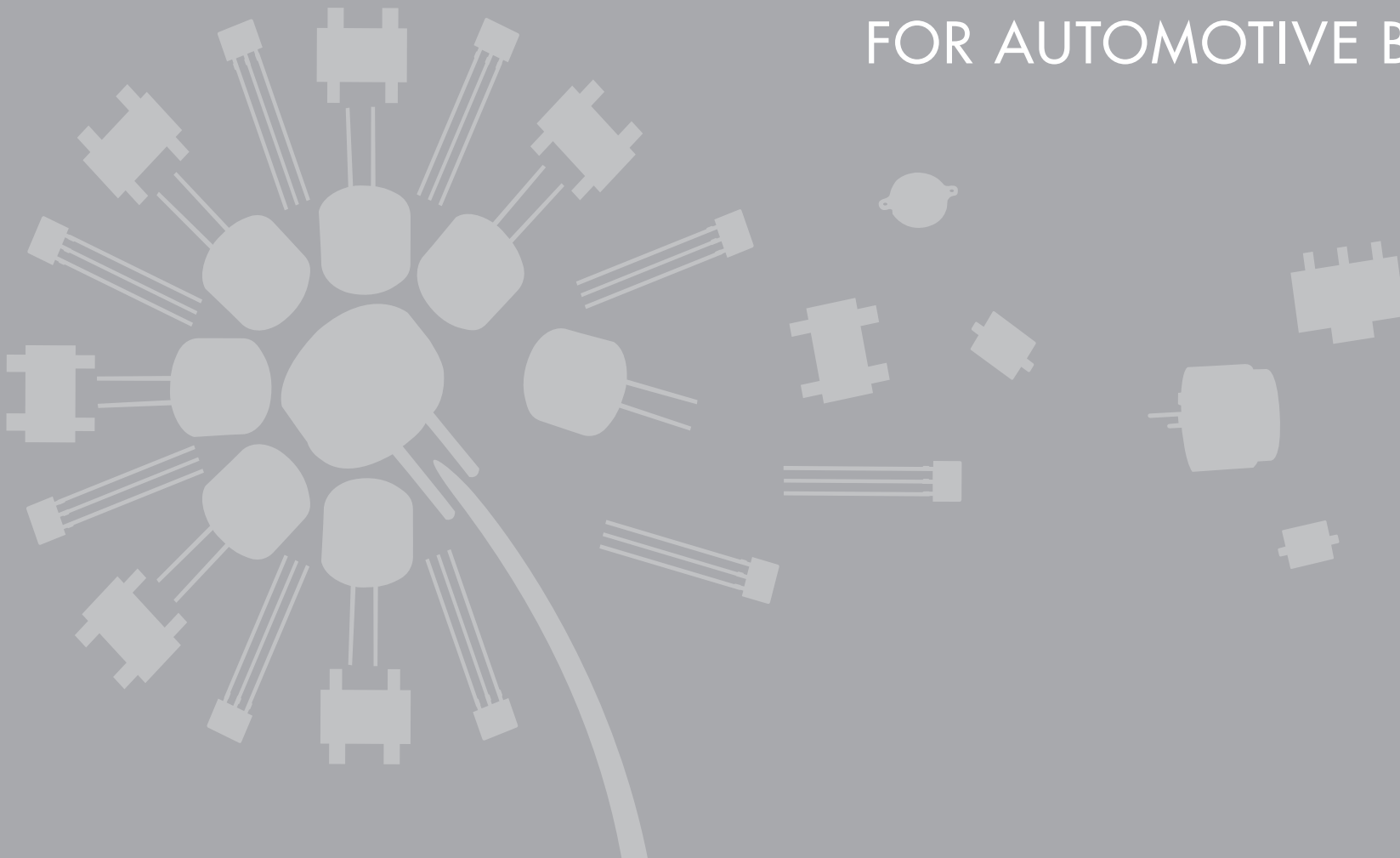


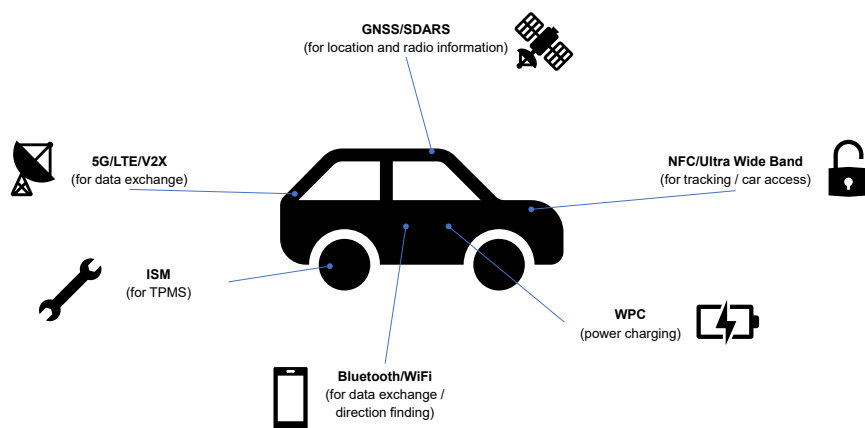
WIRELESS CONNECTIVITY PRODUCTS FOR AUTOMOTIVE BY ENDRICH



WIRELESS CONNECTIVITY PRODUCTS FOR AUTOMOTIVE COMMUNICATION

The increasing demand for connectivity in cars provides many benefits for Safety, Security Monitoring, Entertainment or Fleet management to cover today's requirements of the user. Our up-to-date RF product range perfectly supports these use cases.

Wireless connectivity in vehicles is growing in many applications. We offer our demanding automotive customers standard products but also fully customized product- as well as logistics solutions. In close collaboration with our suppliers, our solutions are not just products, it starts with the idea and finishes in after sales support. Our solutions take the load of your back so you can focus on your core business.



APPLICATIONS:

- Navigation
- Telematics/ ECU
- Infotainment
- Battery management
- Car access

OUR BENEFITS:

- Local support
- Antenna selection and layout design review
- Rapid prototyping and measurements
- Standard products vs. customized solutions including housing
- Our suppliers are certified (ISO 9001, ISO 14001, IATF 16949)
- Various logistics arrangements possible
- Long lifecycles and high-quality standards

Endrich is a trusted partner in Automotive since 1976



ENDRICH AUTOMOTIVE CONNECTIVITY ANTENNA SUPPLIERS

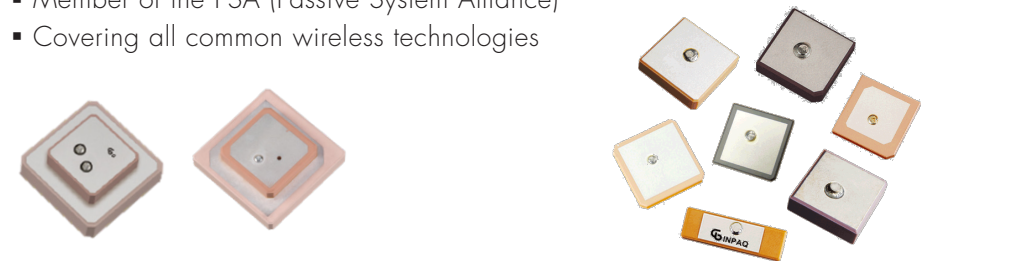
2J ANTENNAS, S.R.O.:

- Founded in 2002 - all made in EU
- Based in Slovakia including R&D & manufacturing
- Up-to-date production facility and measurement chambers
- Competitive pricing & short delivery time
- Covering all common wireless technologies



INPAQ TECHNOLOGY CO., LTD.:

- Established in 1998
- Based in Taiwan
- More than 5 Factories and 22 measurement chambers
- Member of the PSA (Passive System Alliance)
- Covering all common wireless technologies



ANTENNA TYPES:

- Ceramic Patch
- Helix
- SMD type (Ceramic, LDS, FR4)
- External antennas (Screw mount, adhesive mount, magnetic mount, ...)
- Metal stamp
- Flexible PCB type
- LDS customized with multiple technologies



ENDRICH AUTOMOTIVE TIMING SUPPLIER FOR AUTOMOTIVE

SiTime, TaiSaw & Citizen

Due to increasing networking and electrification in the automotive sector, timing components such as quartz crystals and oscillators are becoming more and more important. Without precise timing, navigation via GPS would not be possible or assistance systems would intervene too late in an emergency. Endrich and its manufacturers with automotive experience will help you find the right component for your application.

APPLICATION FOR TIMING

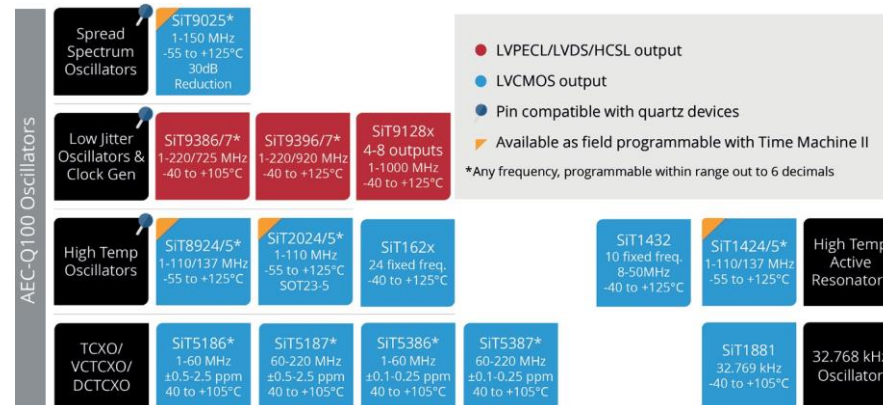
- ADAS
- camera-Systems
- Infotainment
- LIDAR system
- CAN bus
- ECU
- Automotive electronics, Digital radio
- Cellular (GSM, LTE)
- GNSS, RF modules
- Wi-Fi & Bluetooth®
- V2X application



ENDRICH AUTOMOTIVE TIMING SUPPLIER FOR AUTOMOTIVE

SiTime

- biggest MEMS-oscillator-manufacturer in the world
- AEC-Q100-certified
- Headquarters in the USA
- Worldwide support
- <1 DPPM – 25 x lower than quartz
- 1,96 B hrsMTBF – 50 x better than quartz
- FIT rate < 1



Citizen Finedevice

- Tuning fork quartz (clock frequency) for automotive applications

Tuning for quartz unit (SMD · ceramic housing) CM315H



- Frequency range: 32.768 kHz
- external dimensions (mm) L 32 x B 1,5 x H 0,9
- AEC-Q200 qualified High reliable performance
- Applikation Automotive / Medical (non-essential)

Tai-Saw

- quartz crystals MHz
- clock crystals kHz
- Oscillators
- MCF-filters
- SAW-filters
- Dielectric filters