

Coil on Module Contactless

An ultra-thin module for your highly sophisticated ID documents

Our innovative Coil on Module Contactless (CoM CL) packaging technology has been developed for highly robust, flexible contactless government ID and passport documents where long-term reliability is key. This package solution uses a radio frequency link to connect the module to the antenna embedded into the document, functioning in a similar way to the connection between the card itself and a contactless card reader.

CoM CL featuring inductive coupling

Inductive coupling technology for contactless applications employs two antennas, one on the module and one on the card/passport inlay. These antennas connect electromagnetically, eliminating the need to attach the antenna directly to the module with a galvanic connection (e.g. welding). This improves the robustness and long-term reliability of ID documents, also enhancing the efficiency and speed of the manufacturing process and logistics relative to conventional contactless packaging technologies.

Ultra-thin module

Our FCOS™ (Flip Chip on Substrate) technology allows us to realize a module with only 125 µm thickness, which is up to 50% thinner compared to conventional contactless modules. This thin module design enables ultra-thin pre-laminated inlays including module (~200 µm) for passport eDatapages that are only around 500 µm thick.

Module with antenna including microcontroller chip

Antenna tuned to meet the contactless card requirements according to ISO 14443



Radio communication between card antenna and chip module antenna

Antenna inlay consisting typically of polycarbonate

Key features

- Total thickness of only 125 µm (up to 50% thinner compared to conventional modules)
- No galvanic connection between card antenna and module (inductive coupling)
- Small antenna implemented into the module
- Robust module design due to innovative flip chip on substrate technology (FCOS™)

Production benefits

- Package solution allows ultra-thin pre-laminated inlays including module (~200 µm) and eDatapages (~500 µm)
- Polycarbonate monoblock documents possible
- High yield during card production
- No antenna attachment process needed
- Less field rejects
- High robustness and reliability
- No new production equipment needed
- One antenna design for all basic types
- Generic lamination process
- High ESD robustness

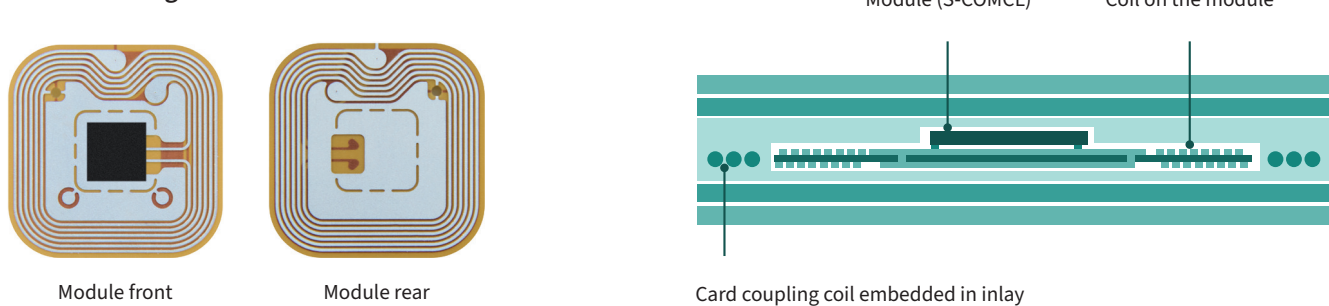


PRODUCT BRIEF

Coil design guide

We offer a coil design guide defining parameters for optimized card antenna layout. We have also evaluated and qualified reference antenna designs so that customers can easily switch to our CoM CL solution.

S-COMCL design



Overview technical details

Product features	S-COMCL1-0-1
Module technology	Flip chip on substrate (FCOS™)/ inductive coupling
Punching size	8 mm x 8 mm
Package thickness	125 µm
Pitch	9.5 mm
Interface to card antenna	Inductive coupling (contactless / no galvanic connection)
Application	Passports (eDatapage) / ID cards
Delivery forms	Tape on reel
ISO references	ISO 7816-1 ISO 10373-1/-6 ISO 14443
Manufacturing requirements	Standard contactless card manufacturing equipment can be used without additional investments in new equipment
Qualified chip types	SLE78, SLC52

Published by
Infineon Technologies AG
Am Campeon 1-15, 85579 Neubiberg
Germany

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Public

Document number:
B181-I1447-V1-7600-EU-EC-P
Date: 11/2023

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