



Product Brief

Coil on Module – the innovative dual-interface chip packaging technology

The innovative Coil on Module (CoM) packaging technology from Infineon uses a radio frequency link instead of the mechanical/electrical connection typically used between the card antenna and the module. This improves the robustness and long-term reliability of dual-interface (DIF) payment cards as well as ID documents and simplifies card design, manufacturing and logistics, making these processes more efficient and up to five times faster than with conventional technologies.

Based on our extensive semiconductor and module expertise as well as our profound understanding of card manufacturers' systems and requirements, CoM underlines our technology leadership in this field.

CoM design featuring inductive coupling

Inductive coupling technology for DIF applications employs two antennas, one on the module and one on the card inlay. These antennas connect electromagnetically, functioning in a similar way to the air interface of contactless cards.



CoM highlights

- > Universal card antenna
- > No physical connection (inductive coupling)
- > Re-use of existing card lamination process
- > Module thickness reduced by 20%
- > Small module antenna connected to the chip
- > Flexible module design

Production benefits

- > Stock management made easy
- > Reduced design and test costs
- > High yield and reliability (e.g. up to 15 N 3-wheel test)
- > Minimum investment, maximum flexibility, up to 5 times higher output
- > High flexibility in card design
- > Reduced ESD impact on contact readers at POS & ATM
- > Fast adoption of new form factors like 6-pin DIF

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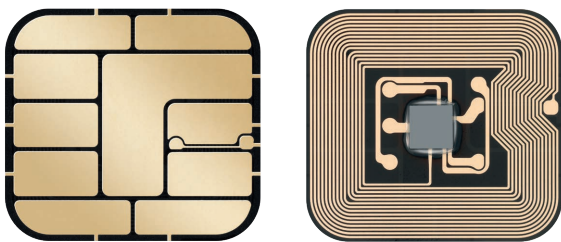
Coil design guide

We offer a coil design guide defining parameters for optimized card antenna layout. We have also evaluated and qualified different antenna technologies (AL etched, wired, etc...) so that customers can easily switch to dual-interface card production using antennas compatible with our CoM.

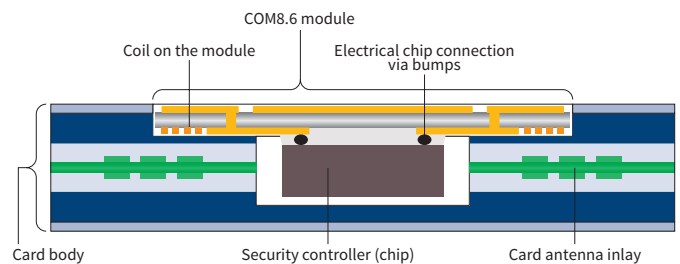
Top benefits of our unique CoM design

- > Flexibility to freely combine chips/modules and card antennas
- > Single card antenna layout for different chip/module combinations
- > Reduced complexity and smaller inventory, faster development cycles and faster time-to-market
- > The CoM package is based on the flip chip technology proven through millions of delivered modules
- > Highest reliability levels thanks to integrated antenna and inductive coupling

CoM design – front and rear



Cross-section of a DIF card using CoM



Product features	S-COM8.6/S-COM10.6
Module technology	Flip chip
Punching size [mm]:	11.8 x 13.0
Package thickness [mm]:	0.47/0.42
Pitch [mm]:	14.25
Max. chip size [mm]:	2.2 x 2.2
Module to antenna connection	Inductive coupling without mechanical connection from module to antenna in card
Application	Payment cards/ID documents
Yield at card production	Up to 99%
Manufacturing requirements	Standard contact-based (CB) card manufacturing equipment can be used without additional investments in new equipment
Package qualification	Results available in package qualification report
Qualified chip types	SLE 77CLFX240AP(M); SLE 78CLFX400AP(M) and derivatives

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