

# High Q Factor Integrated Magnetic Inductors

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## Status:

Seeking R&D and/or  
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Patent Pending

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## High Q Factor Integrated Magnetic Inductors

- Integrated magnetic inductor for radio frequency devices
- Inductor coils, magnetic films, a substrate, and exchange-coupled magnetic material
  - In the form of a composite or film
- Exchange-coupled two-phase hard and soft magnetic composites
  - High magnetization of soft phase
  - Large coercivity of the hard phase
- Control of the volume fraction of the hard/soft phase

## Advantages of High Q Factor Integrated Magnetic Inductors

- Minimized the effect of magnetic loss of the magnetic materials on the inductors electrical characteristics
- Improved dynamic properties of exchange-coupled magnetic materials
- Increase of over 20% in the L and Q factors
- Improved permeability and  $f_{FMR}$  at the frequency of interest
- Uses glass substrate
  - Cheaper material

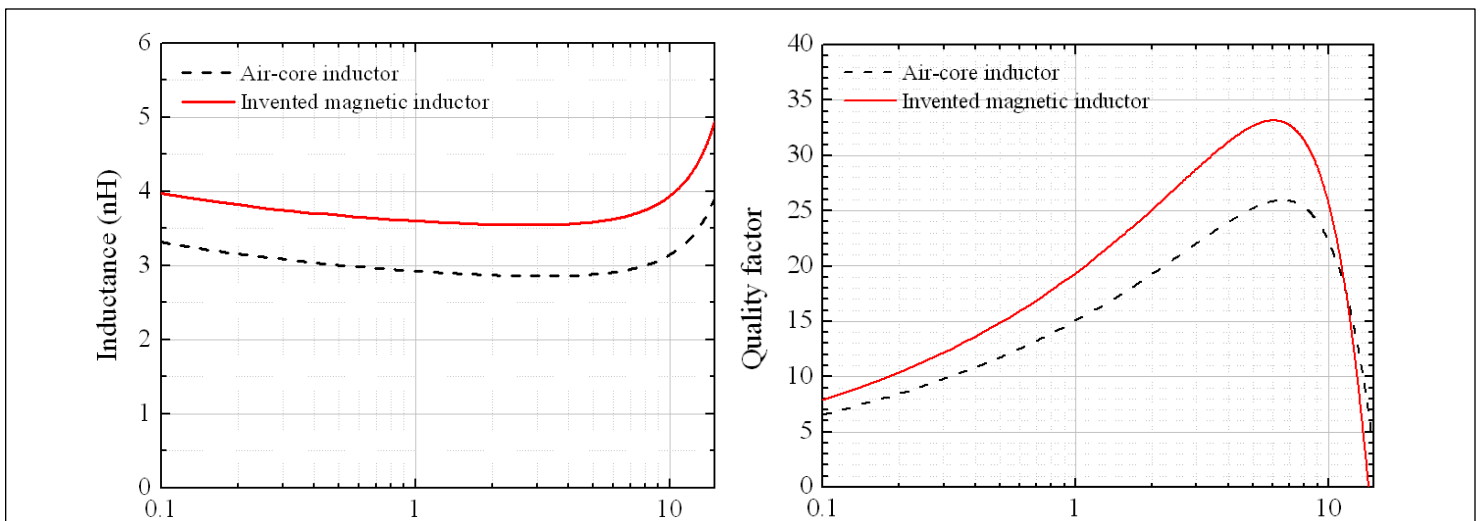


Figure 1. The structure of the prior-air-core and invented magnetic inductors

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