

LGM Miniature NFC Antenna – A.6.21

Data Sheet

General Description

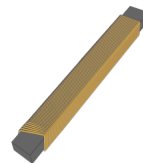
LGM antenna is a solenoid, ferrite antenna in a shape of a rod with miniature ferrite core. Despite its miniature size, it can be used in CE mode and in R/W mode as well. The main advantage of the antenna is performance in devices surrounded with metals and meeting ISO/IEC 14443 standards in CE mode. Its miniature dimension does not restrict the design of the final application and brings to the NFC radio transmission a new perspective in construction of miniature IoT and wearables.

Basic Technical Characteristics

LGM antenna A.6.21 (PAT. No. PP50053-2012) performance competes with considerably bigger planar antennas. For CE mode, the best results can be achieved with NFC controller supporting active load modulation (ALM).

Features

- Small size - L: 9.0 x W:0.930 x T:0.785 mm
- High magnetic field strength
- Applicable to reflow soldering
- RoHS compliant

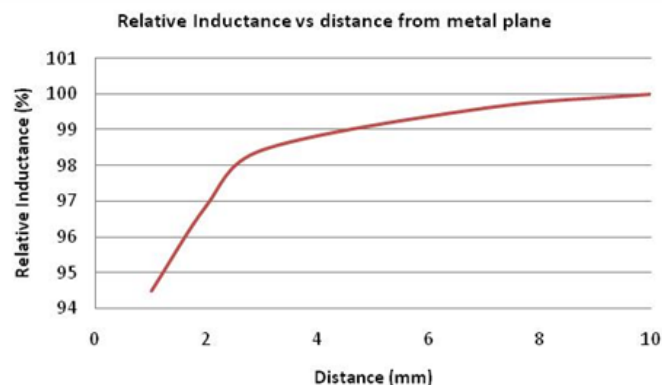


A rod shape of the LGM antenna

Electric Specification

Part Number	Inductance – current 100mA _{rms}		Rated current		Tolerance from fab	Q - quality Current 100mA _{rms}	Self-resonance
	Open air	Metal environment	Continues current	Up to 1s			
A.6.21	1,25μH	1,2μH *	100mA _{rms}	250mA _{rms}	5%	15	90MHz

* From approximately 3 mm distance between a metal plate and the antenna the influence of the metal on the antenna inductance is negligible, see picture below



Supported standards

- ISO/IEC 14443 Type A, B (up to 848 kbit/s) with Active Load Modulation
- NFC Forum compliance
- FeliCa with Active Load Modulation

Exceptionality of the design

- the smallest compact antenna on the market
- replaces the planar antenna in ALM mode
- can be implemented in CE and R/M modes
- communicates well from metal housing, properly designed metal housing may even increase the effectiveness of radiation
- has been tested with ALM NFC controller from 3rd parties

Applications

- miniature mobile devices enabling CE mode, for NFC pairing of BT devices and WiFi setting, for reading tags (R/W mode)
- tiny devices with size limits to place standard NFC planar antenna, for example small wearables and accessories (rings, bracelets, glasses, watches, earphones, speakers...)
- solutions, where the metal housing or complicated electronic environment does not allow NFC communication, for example smartphones, touch panels, displays, automotive industry, machines

Availability

You can test LGM antennas performance using LGM antenna modules. LGM antenna modules are printed circuit boards (PCB) comprising LGM antennas with matching circuits tuned for particular NFC controller (product of 3rd party). NFC Controller is not part of the LGM antenna module. LGM antenna module is connected via pin header connector to the EVB board of particular NFC controller vendor.

Check availability of LGM antenna modules on www.smk-logomotion.com



LGM antenna module connected via pin header connectors with NFC controller NXP_PN80T EVB