

# PROFESSIONAL INSTALLATION

LF RFID INTERROGATOR HTRM1100

VERSION 1.0

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# frequent

froschelectronics GmbH

**This letter explains the necessity of a professional installation of the module.**

The RFID low frequency module HTRM1100 is an OEM part that has no stand-alone functionality. It is therefore only sold to system integrators. For system integrators it is a must to install the module and the corresponding antennas professionally into their host products.

As the module is an OEM part marketing will support exclusively business-to-business trade.

The test results submitted are representative for a set of antennas.

The HTRM1100 operates at Low Frequency (LF) which is 134.2 kHz. In this frequency band the radiated power is too small in order to be measured. Instead, the quasi-stationary magnetic field is measured, which must comply with FCC Part 15 regulations. Since the radiated power can be neglected, the devices connected to the module are magnetic loops, which are nevertheless called antennas. These magnetic loops are not described by properties such as antenna gain. Rather, the magnetic field of the loop depends on the inductance, on the quality factor and especially on the area enclosed by the loop. The inductance and the maximum quality factor of the magnetic loop, which is used as antenna for the module, is limited by the design of the module. Thus, with respect to the magnetic field strength generated by the antenna, the area enclosed by the loop is the decisive property of the antenna. Thus it is shown that for the approval of a set of antennas the measurement of the largest and the smallest antenna is sufficient. The test results submitted are measured at a module supply voltage of 18V and therefore at the highest power level. The module therefore complies with the Part 15 regulations for all antennas that are not larger than the largest measured antenna and not smaller than the smallest measured antenna.

The module has 3 antenna connectors. These outputs are multiplexed and can be used only successively. A parallel usage of the outputs is not possible. In terms of radiation, it makes no difference whether one antenna is connected or three antennas of the same type are connected to the module.