antenna. For a quarter of the Card size, a Class 4 antenna was specified in an equal way. We will follow this denomination and specification in this contribution. Parameters for these Card antenna classes are given in tab. 2 and the antenna area is shown in fig. 4.

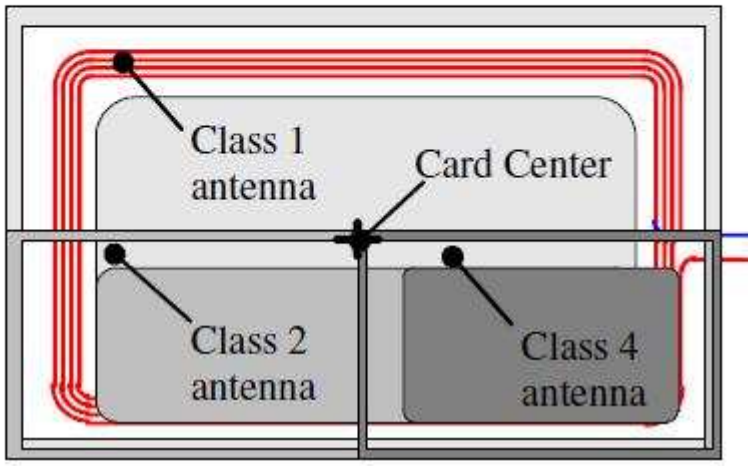

Figure 4. Card antenna areas for Class 1, 2 and 4 (Class 1 antenna shown).

TABLE II. PARAMETERS FOR SMALLER PICC ANTENNA CLASSES [5].

PICC antenna	Class 1	Class 2	Class 4
total area (l x w in mm)	72 x 42	72 x 21	36 x 21
turns N_{RX}	4	6	9
inductance L_{RX}	2.31 µH	3.42 µH	3.65 µH
serial resistance R_S	0.85 Ω	1.58 Ω	1.64 Ω
parallel capacitance	5.5 pF	5.22 pF	3.65 pF
Conversion factor: Chip current per H-	4.7 mA (DC) per A/m (rms)	2.76 mA (DC) per A/m	1.02 mA (DC) per A/m (rms)

Volts DC could be measured across the resistor. Then the Reference PICC was taken out of the H-field, the resistor value was measured (allowing to calculate the current according to the law of Ohm). Then the Reference PICC was placed in a homogenous H-field and the field strength was adjusted so that again 3 Volts DC could be measured across the shunt resistor. In this way, the according average H-field, as picked up by the specific antenna Class for the specific position in the Operating field could be determined. The resulting values then were sorted over the average H-field strength for each class. Figure 6 shows the resulting relation between available chip current and average H-field.

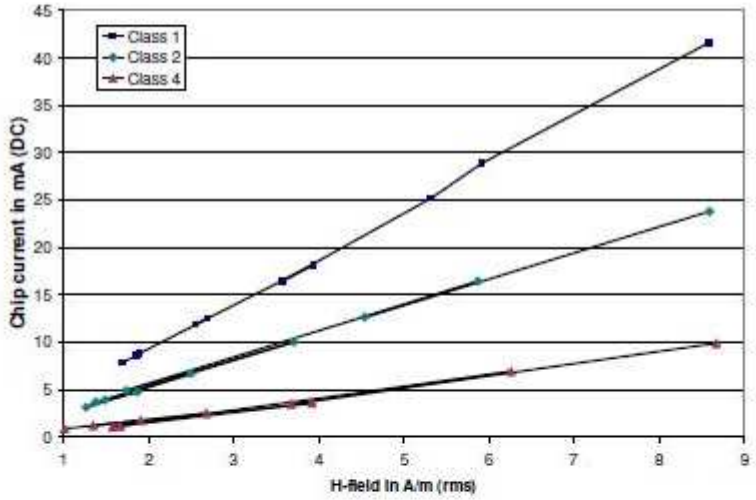

Figure 6. Available Chip current measured for different Antenna Classes in Operating Volume.

As can be seen, the relation is nearly linear, which allows to give a conversion factor for every Card antenna area between average H-field and available chip current. These factors are given in tab. 2. So the Card antenna resonance circuitry acts like a current source for the chip,