

# SMARTWARE CQM SOLUTIONS

## Electromagnetic and RF communication tests before shipping cards to personalization service

Tests requested by



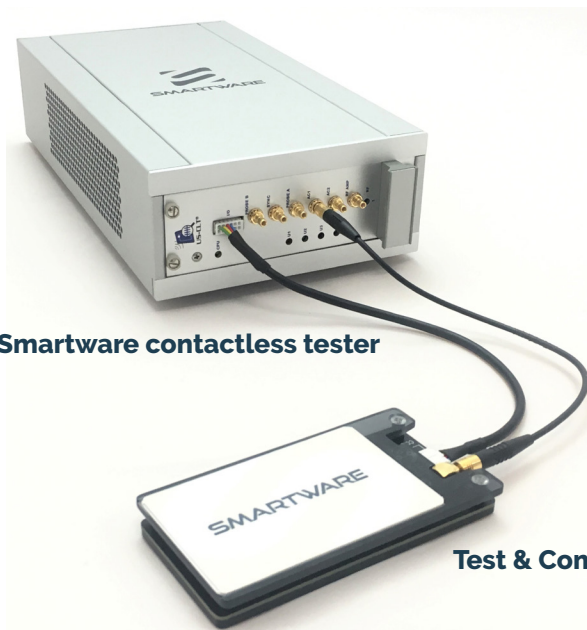
Financial card producers have to prove to Mastercard or Visa that, for each issued banking card, it has successfully completed a series of tests including those related to chip card quality.

MasterCard specifies in the document CQM (Card Quality Management) some requirements in order to ensure the quality of the product during the manufacturing phases.

Smartware offers solutions for desktop usage and for milling/implanting machine ensuring a complete coverage of required tests related to electromagnetic characteristics and RF functional tests:

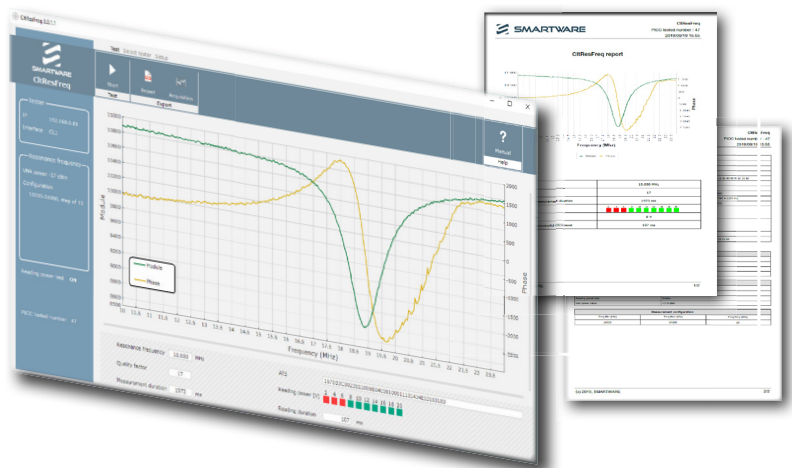
- Resonance frequency
- Quality factor
- ATS & Reading distance

### Software for Resonance frequency Q factor measurement, and reading ATS



Smartware contactless tester

Test & Communication antenna



### Smartware contactless tester specifications

Communication contactless interface for both chip card module and contactless card

- ISO 14443-3/4 type A/B up to 848 Kbps, ISO 15693
- Proprietary format: Mifare™, Mifare+™, FeliCa™, I-Code™
- Envelope data acquisition and timing measurement (optional)

Parametric tests for CQM test

- Resonance frequency & Q Factor from 150ms to 1.8s depending of the measurement ranges
- ATS & Reading distance

