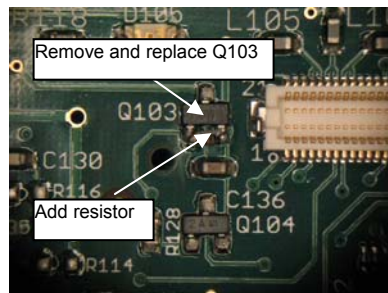


Based on the latest finding in the field, we made a minor change to the ViVOpay 5000 device to remove the vulnerability caused by mobile phones working at certain frequencies. The interference occurs with phone using the 850-900MHz frequency range with an output level higher than ~1 Watt.

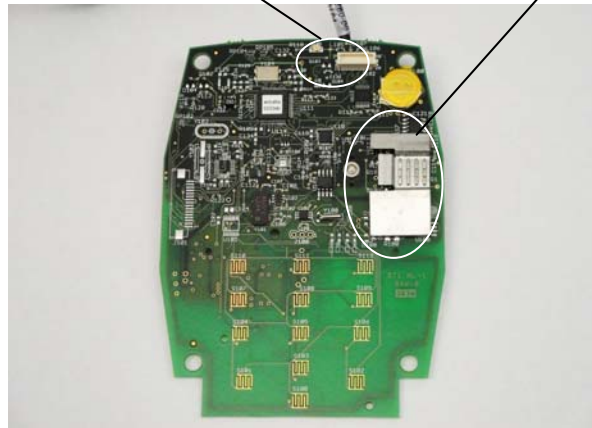
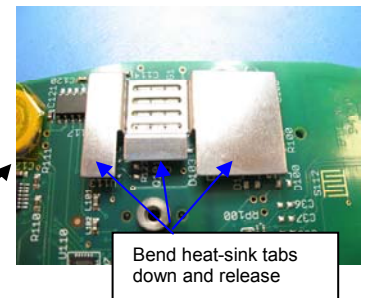
The changes made are very minor and do not impact RF. It is also important to note that the firmware has not been modified at all.

- 1) The uProcessor reset is corrected by the removal and replacement of the voltage supervisor IC, 3 pin SOT 23, with a supervisor circuit that has a dropout threshold at 3.0 volts. The present supervisor had a threshold of 4.5 volts.
- 2) The MFRC531 (RF Chip) reset issue is resolved by the addition of a 680 Ohm resistor, in parallel to the present 5 KOhm pull-up resistor, on the UC_RST node. This improves the noise immunity by a factor of eight.
- 3) In addition the heat sink on the 5V power regulator has been replaced or reworked to reduce its size and location.



Change 1 & 2

Change 3



These changes have been tested at Cetecom in the US and verified by RFI as well.

An ECO has been approved and these changes are in production.

Units already produced but not yet shipped have been returned to our contract manufacturer and currently being reworked.

I understand Dave Wilson has also provided an RFI Global test report commissioned by MasterCard to validate the solution.

MasterCard have stated that the changes have no impact on certification from their perspective, we hope also that Visa agree the changes have no certification impact.