EVAcharge SE Errata

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1 Revisions

Revision	Release Date	Changes
7	October 26, 2023	changed company logo, update contact
6	September 06, 2019	added errata 5
5	February 10, 2015	added errata 4
4	March 21, 2014	changed component value and fix plan for errata 3 (formal only)
3	March 05, 2014	added detailled information about replacement parts for errata 3
2	March 05, 2014	added errata 3
1	Januar 24, 2014	initial release

This document details all known errata for EVAcharge SE.

2 PLC Input Attenuation

2.1 Description

The input attenuation of the powerline signal is too high. This results in bad results when the SLAC process measures the attenuation between EVAcharge SE and a counterpart (e.g. a PEV). Some units were reported to have loss of PLC connection due to this issue.

2.2 Affected Devices

EVAcharge SE devices with MAC Adresses in the range of 00:01:87:05:00:00 to 00:01:87:05:01:0E are affected by this errata.

2.3 Impact

The SLAC process is not compliant to the applicable standards. The connection losses might cause communication problems while charging.

2.4 Workaround

As workaround the "AttnRxEVSE" (according to ISO 15118-3) can be set high enough to allow slac to succeed. There is no way to fix the loss of connections in software.

To fully fix this errata two resistors need to be replaced. R302 and R303 have to be replaced by 24.9 Ohm in 0402 - see figure 2, red area.

2.5 Fix plan

Fixed in V0R4b.

3 Bootmode of the PLC chip is incorrect

3.1 Description

The bootmode of the QCA7000 PLC chip is set to host boot mode on some units. This would force the system to provide the chip with firmware and is not intended behaviour.

3.2 Affected Devices

EVAcharge SE devices with MAC Adresses in the range of 00:01:87:05:00:00 to 00:01:87:05:01:0E are affected by this errata.

3.3 Impact

When the PLC chip is in host bootmode it always needs to communicate with the main processor to be able to save its settings. This takes a brief moment but always delays further communication. If this delay is not acceptable you need to use the flash to store firmware for the chip. The described problem will let you perform a flash procedure on the QCA7000 but it will still come up in host bootmode

3.4 Workaround

There is no software workaround available.

To fully fix this errata one resistor needs to be removed while another one needs to be added. R126 (10K, 0402) needs to be removed, R122 needs to be populated with 10 kOhm in 0402 - see figure 2, green area.

3.5 Fix plan

Fixed in V0R4b.

4 SLAC failing with some PEVs

4.1 Description

The HomePlug GreenPHY SLAC is not working with some plug in vehicles (PEVs). This can be tested by enabling SLAC on EVAcharge SE as EVSE and coupling it with a PEV. After the PEV is plugged in (detectable via CP going from static 12V to static 9V) you have to enable 5% dutycycle on CP. After this the PEV should start the SLAC mechanism. Some PEVs do send the SLAC messages but EVAcharge SE will not recognize them correctly.

4.2 Affected Devices

EVAcharge SE devices with MAC Adresses in the range of 00:01:87:05:00:00 to 00:01:87:05:01:25 are affected by this errata.

4.3 Impact

SLAC messages from PEV to EVSE and vice versa are not recognized and therefore the SLAC mechanism fails. The result is that EVSEs with affected EVAcharge SE devices will not be able to charge the PEV. The reason for the failure is an incorrect reference frequency of the HomePlug Green PHY chip. It needs 25 MHz with a tolerance of 23ppm over all conditions (ageing and temperature drift). This frequency is initially too high due to incorrect load capacitors. The capacitors need to be bigger in order to decrease the reference frequency of the oscillator.

4.4 Workaround

There is no software workaround available.

To fully fix this errata two capacitors need to be replaced. C204 and C206 need to be replaced by 20 pF, package 0402, dielectric: COG/NP0 - see figure 2, blue area.

4.5 Fix plan

Fixed in revisions later than V0R4a.

5 Absence of PLC Transformer

5.1 Description

The quality control process of EVAcharge SE allowed that boards without PLC transformer (see red marked component in figure 1) were tested ok. When finding the error the delivery was stopped immediately - it was possible to determine the total number of defective boards. Two defective boards were delivered to customers.
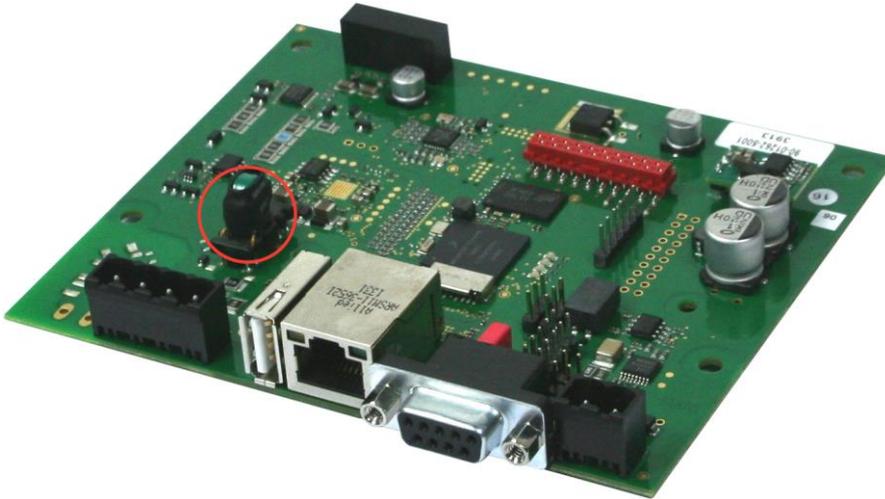
Figure 1 Location of the missing PLC Transformer

5.2 Affected Devices

Two non identifiable EVAcharge SE devices with MAC Addresses in the range of 00:01:87:05:08:D2 to 00:01:87:05:0D:C6 are affected by this errata. The delivery date of the boards is between December 10, 2014 and February 10, 2015.

5.3 Impact

The Powerline Communication will not work under most conditions, however it is possible that it works partially with a bad performance. SLAC will most probably always fail.

5.4 Workaround

If a board was found, please send this EVAcharge SE back to your reseller or directly to in-tech smart charging. If you are able to solder the component to the board yourself, in-tech smart charging will provide you with the needed transformer immediately free of charge.

5.5 Fix plan

in-tech smart charging will improve the quality control process.

6 Double use of MAC addresses

6.1 Description

The production process of EVAcharge SE allowed that boards with the same MAC address and serial numbers were produced and tested ok. When finding the error the production and delivery was stopped immediately - it was possible to determine the total number of defective boards. 979 boards with non-unique MAC addresses and serial numbers were delivered to customers.

6.2 Affected Devices

979 devices with MAC addresses in the range of 00:01:87:05:95:D3 to 00:01:87:05:A1:D0 and serial numbers in the range of 60939 to 61962 are affected by this errata. The delivery date of the boards is between April 2019 and August 2019

6.3 Impact

Network communication might be affected if two boards with the same MAC address are working within the same network at the same time.

6.4 Workaround

In case two board were found with the same MAC address, please integrate them in separate networks.

6.5 Fix plan

in-tech smart charging improves the quality control process in order to avoid this issue.

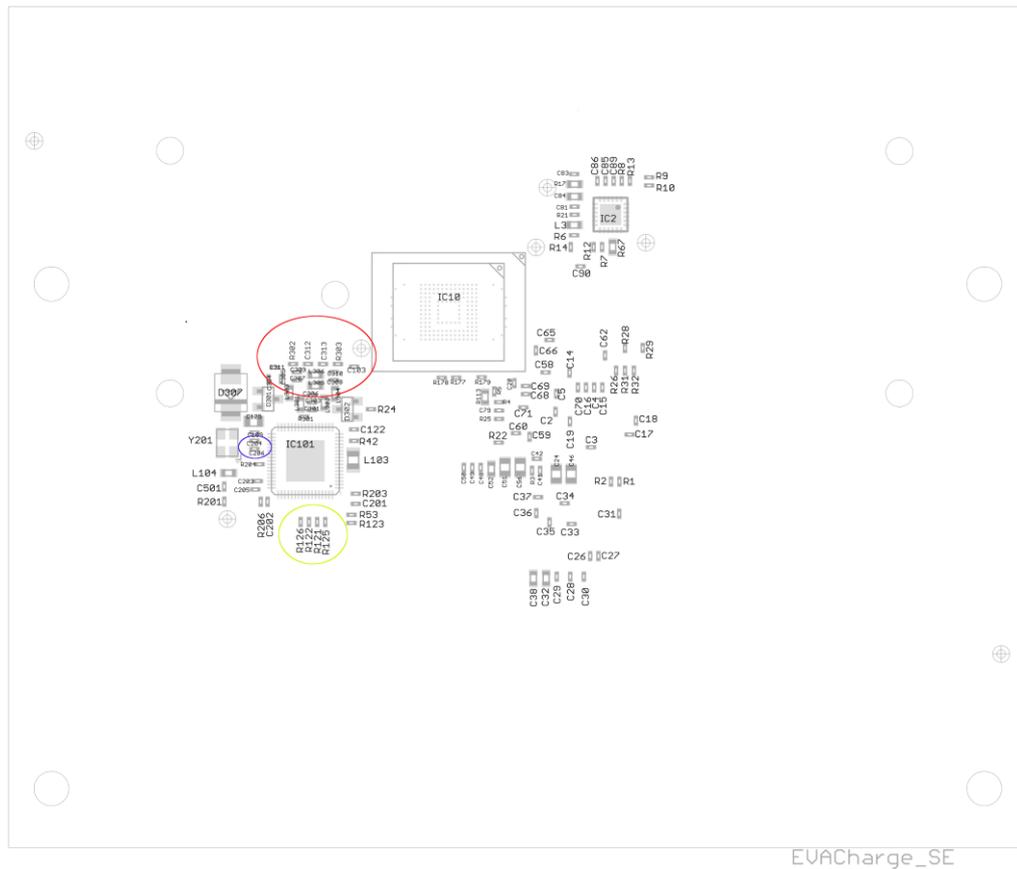# 7 Plans for Hardware fixes

Figure 2 EVAcharge SE Bottom Placement for Errata #1, #2 and #3

8 Contact

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