



How to Unifi AC pro from Ubquiti

Active POE issue with Unifi AC Pro produced during 2016 to early 2017, presents as no power negotiation via switch, but powers up using poe brick.

Written By: Adrian

INTRODUCTION

background - I had two Unifi AC pros fail with in 18 months of commissioning.

First failure you figure yeah I got Friday afternoon special but when two fail, you start to think is there a design fault or another external effect causing these AP to fail.

I started to research forums, general comments was maybe some EMF surge via UTP cable.... Faulty switch.... Induced voltage on cable from near by HV electrical source.

In my case I have used tier1 cable and fittings, all cat 6 fitout done in accordance with Australian Cabling rules and guidance from hardware manufacture. Hardware in use to power devices are Cisco 3650X POE+ switch and Ubquiti POE switch.

To confirm cabling was not issue, it was rechecked with Fluke network analyser/cable tester device used to certify cable installs. It come back showing cables passed cat 6 tests.

No abnormal weather activity occurred months leading up to failure.

So figured parts defect or design failure.

Tried to reach out to Unquiti via email and RMA to get some assistance or maybe replacements, forums indicated they come to the party from time to time. In my case no response back to email, got RMA number and was informed they may deny request.

After this response - I figure I'm \$500 AUD down on two faulty AP's, support nonexistent from manufacture of AP's, I can dump ap's and create e-waste or with help of friend pull them down and work out the issue.

So one Friday night with help of friend and some local ciders we got cracking, nothing to loose, self education gains to be hard and busted the AP's open and started tare down. After a couple of hours working out power supply design we identified the following issues and process to diagnose issue and repair.

The power supply in these AP's are basically two front end supply's, one to deal with active POE side and second to deal with passive POE side. The meeting pint of both front ends is via a pair of bridge rectifiers with merge the power feeds and then moves into other stages of power supply. There looks to be some detection and protection circuit built into the design.

The design is very different to gen1 AC-lite AP issue with TVS issue, the gen1 lite ap's are 24v passive POE only where the PRO AP's are 48v active or passive POE. Gen2 AP lite ap are now dual voltage design and support 24 and 48v passive POE and 48v active POE

Step 1 — Diagnosing if your Unifi AC Pro AP has this issue



- Symptoms of issue. AP will not power up using active POE/POE+ switch but powers up using passive POE power brick.
- To confirm diagnoses you will need multi meter and carry out resistance check via RJ 45 connector. Key pins are 1,2 and 3,6. Both pin pairs when testing with DMM will show as almost 0 ohms - this is normal, if you test pins 1 and 3 or 1 and 6 or 2 and 3 or 2 and 6 and your DMM shows less than .5MegOhm then read on.

To reassemble your device, follow these instructions in reverse order.