Subject: Reviewing a cheap CRT degaussing wand
Posted by Anonymous on Tue, 12 Jan 2021 20:48:30 GMT
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Originally posted by: Rayner Lucas

Hi all. This post is a review of the cheap "green stick" CRT degaussing wands, as I haven't found much discussion of them and some other repairers of vintage monitors may find it useful.

CRT degaussing tools seem to be hard to find these days. Occasional used ones come up for sale, and there are still some to be found in the US. However, in the UK they're near-unobtainable. The main source seems to be eBay sellers in China, all of whom are selling the same type: a wand-style degausser in a green plastic shell. So, having a couple of CRTs with purity problems, I bought one to see if it would do any good.

The wand cost about 15 GBP and arrived within a couple of weeks. There was no documentation included, leaving me with just the specs given in the eBay listing, which read:
-Relative magnetic field: 70MT
-Load current: 1A
-Working hours: 20 seconds
-Power: 220V
-Specifications: About 31*31*200(mm)

The outer shell is some soft semi-translucent plastic (polythene?), and feels extremely cheap. A momentary switch pokes out of the top of the casing (a momentary switch is good, as it stops me accidentally leaving the coil energised).

The wand came with a moulded two-prong plug, which I had to cut off to fit a UK plug. And... I have never seen mains cable that thin before. It is, at least, double insulated, but the conductors are at most 28AWG and possibly even thinner (it's hard to measure stranded cable, but the diameter is somewhere around 0.25mm to 0.35mm). The strain relief clamp in the UK plug wouldn't even hold the cable until I wrapped some extra plastic around it. Oof. Looking at the ampacity ratings on the Wikipedia article for American Wire Gauge, that cable must be very close to, if not exceeding, its recommended current rating. It feels worryingly plausible that someone, somewhere made the calculation "it's fine, if they push the button for too long the coil will burn out before the cable insulation melts".

However, the tool does what it's supposed to and noticeably reduced the blotches visible on the CRT display. I used the standard technique of powering the coil from a couple of metres away, bringing it up to the CRT face, circling it around a couple of times, then smoothly backing

away two or three metres before switching off again. I definitely recommend sticking to the stated maximum of 20 seconds continuous operation and letting the wand cool fully before using it again. The heat seems to take a few seconds to conduct to the outside of the casing, so it's not until after you've switched it off that you feel how warm it's really getting.

I popped the end cap off the casing to take a look inside, but haven't disassembled it further. Strain relief is just a knot in the mains cable. I don't see any current limiting apart from the coil itself. The coil is wrapped around a core of steel plates, and seems to have some more plastic insulation around it. The non-business end of the coil seems to have some copper mesh shielding. Hooking the whole thing up to a component tester, coil resistance measures around 140 ohms, with an inductance of 320mH.

In summary,

Pros:
- Cheap.
- Does what it's supposed to.

Cons:
- Not particularly sturdy.
- Probably not the safest thing ever, use with caution.

If there were better-quality tools available, I would definitely buy those instead. But there weren't, and this one did at least provide the functionality I needed.

HTH,
Rayner

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