

Dear Sir,

After using the excellent ETI-1500 Super Metal Detector for some months, I have noticed that when in VLF mode the tuning tends to wander quite noticeably when the batteries are aged but still test OK. With fresh batteries the wander is still there but not as pronounced.

Regardless of battery state the +10 V rail is low, i.e: +8.2 to +8.5 V when ZD1 is 5V1 not 5V6.

Basic Ohm's law indicates that resistor R53 should have about 300 μ A through it, whereas the zener needs at least 2 to 3 mA to work correctly. Consequently the regulator cannot possibly work correctly.

I suggest that R53 be changed to 2k2

to keep the zener current low to prolong battery life.

When R53 is altered the +10 V rail goes to $+10\text{ V} \pm 0.3\text{ V}$ and the tuning becomes very stable, as it should be.

Peter Burbidge
Chirnside Park Vic.

Many thanks for the suggestion; we have passed it on to readers experiencing problems similar to yours and this note should spread the word more widely.