Problem with AM stereo decoder

I recently constructed the AM Stereo Decoder (EA, October 1984) and added it to my Playmaster AM/FM Stereo Tuner (EA, November 1978). I have replaced the 0.47μF electrolytics with tantalums as stated and adjusted the slug in L1 to get 4.1V on pin 19 of the MC13020P. Pin 10 reads 8.2V.

The problem is that the LED does not light up and I do not appear to be getting stereo.

My other problem is that the frequency readout is incorrect when the tuner is switched to FM. While it reads correctly for 92.1MHz, the reading when tuned to 96.1MHz is 95.1MHz and for 97.5MHz it reads 96.5MHz.

Can you help me?

• The voltages that you have measured on pins 19 and 10 are satisfactory and indicate that the decoder is in lock. However, to achieve stereo reception the input IF signal must have the correct amplitude.

We suggest that you monitor the voltage at pin 4 (the level detector output) and adjust the IF signal level to pin 3 by altering the series resistor until a reading of 2V is obtained. Note that the tuner must be tuned precisely to the station frequency in order to receive stereo.

That said, our experience with the Playmaster AM/FM Tuner indicates that it is not a good candidate for conversion. Its local oscillator is not stable enough.

Your problem with incorrect frequency readout may be due to insufficient signal level into the DS8629 prescaler chip. Try reducing the 220Ω resistor from Q14 to see if that cures the problem but do not reduce the resistor more than necessary otherwise multiplex hash will become evident.