

ONKYO T-9090 (and probably T-9090ii)
December 2016

Fixing a permanent mute – no sound

Hello all:

Passing on my somewhat brutal fix for what appears to be a common problem in ONKYO T-9090 tuners. ONKYO was less than useless helping.

Condition:

Tuner operated normally, except for no sound. In fact, there was a TINY amount of sound if you turned up the volume enough – so the tuner and amplifiers were likely working, or so I surmised. Further, if I selected “mute” the sound was reduced another 20 dB or so.

So this suggests that a) the muting logic was working properly (it turned on and off), but some other factor was causing the muting logic gate to mute the sound.

See attached schematics, and search the web for the full document. Its out there and free.

Basically, the tuner circuitry is sent to an op-amp audio output stage, (Q407a and b). This is then sent to a muting circuit (two BJTs that shunt to ground if so controlled), and to a set of fixed and variable outputs.

The gate controller for the muting is another BJT, Q410. After doing some testing that suggested that it was “on” most of the time, I decided to take a brute-force approach and simply remove the gate controller, leaving the muting circuit permanently “off”. It worked like a charm, so far.

A side benefit is that the tuner can now be operated in stereo even if the noise level is higher than the brain likes – which I prefer. You can always press the mono or blend buttons.

For those who want numbers, the actual muting transistors are Q408 and Q409, more or less dead center of attached schematic fragment. The are in an emitter follower configuration, emitters tied to ground, bases tied to the gate controller. “before”, with mute stuck on, they measured (E,B,C) = (0V, +0.7V, 0V) meaning they were conducting all the time (shorted to ground). “After” they measured (0V, -0.9V, 0V), meaning they were not just off, they were off with headroom to stay off. Just the way I wanted it.

I have not done any significant testing and take no responsibility for side effects.

Enjoy,

Grant

