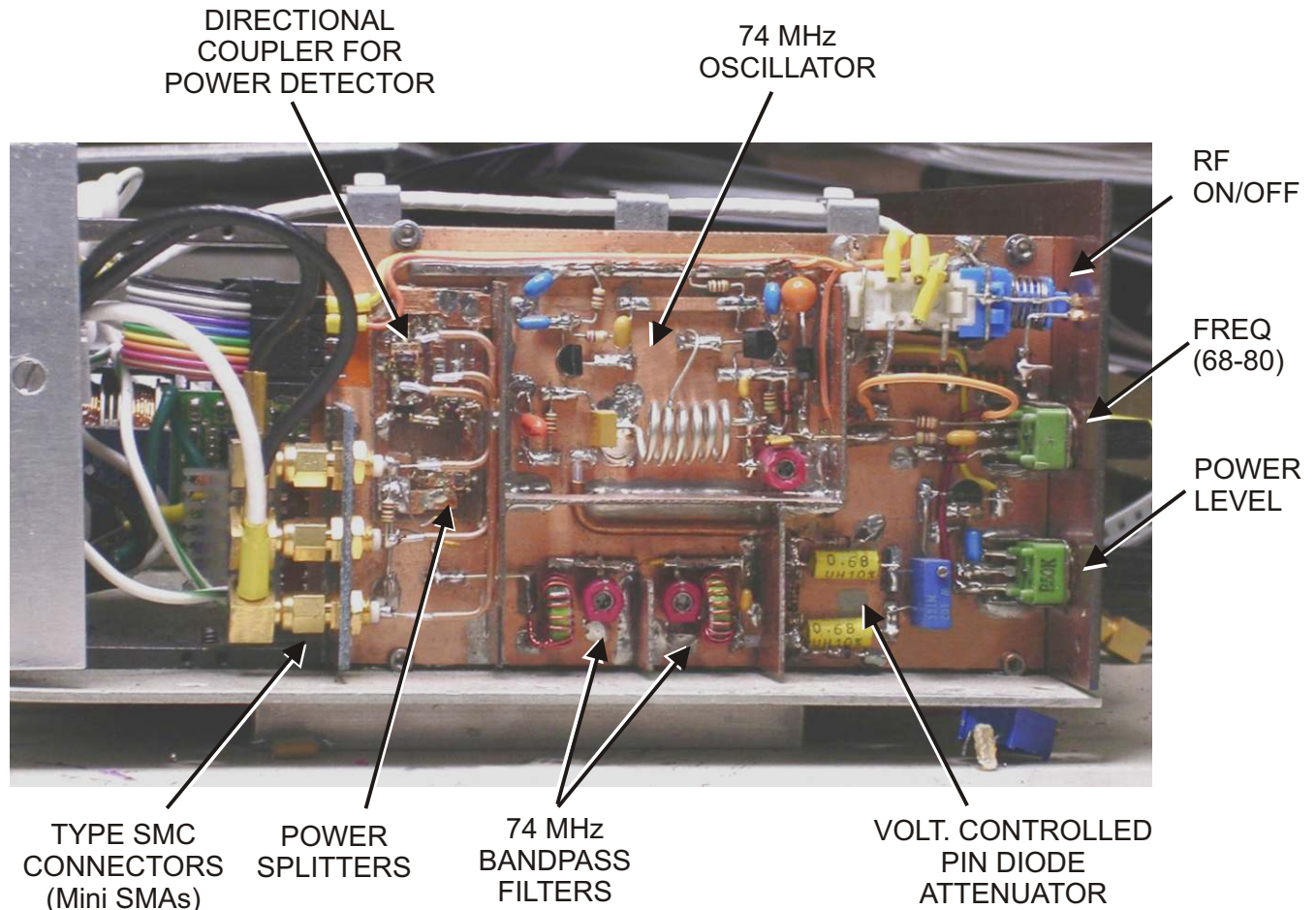


MANHATTAN CONSTRUCTION – 74 MHz TEST OSCILLATOR

A test oscillator designed/built for simulating the VLA low-band 74 MHz receivers and testing the T301 74 MHz/P-band upconverters. The 74 MHz oscillator was built on copper clad using the "Manhattan" technique. The output is 74 MHz, tunable from 68–80 (for sweeping filters), nom. –40 dBm, adjustable from –10 to –45 dBm with the PIN diode attenuator.



To properly "check-out" and align the 74 MHz/P-band upconverters, three signal generators are required. One for 74 MHz, one for P-band (308-348 MHz), and one for the 1024 MHz local oscillator. This ties up a lot of test equipment everytime I needed to work on this particular converter module. I designed and built this test set to simulate the VLA 74 MHz and P-band receivers, the 1024 MHz LO, and a built-in wideband noise source. Additionally, I added a sweep generator to the P-band oscillator for sweeping the full receiver range for checking filters, IMD, etc. The 74- and P-band receivers are used at the VLA for solar observing, atmospheric water vapor measurements, and other galactic low-frequency physics. A dipole stretched across the quadrapod legs is used for these frequencies, not the dish surface of the VLA antennas.

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