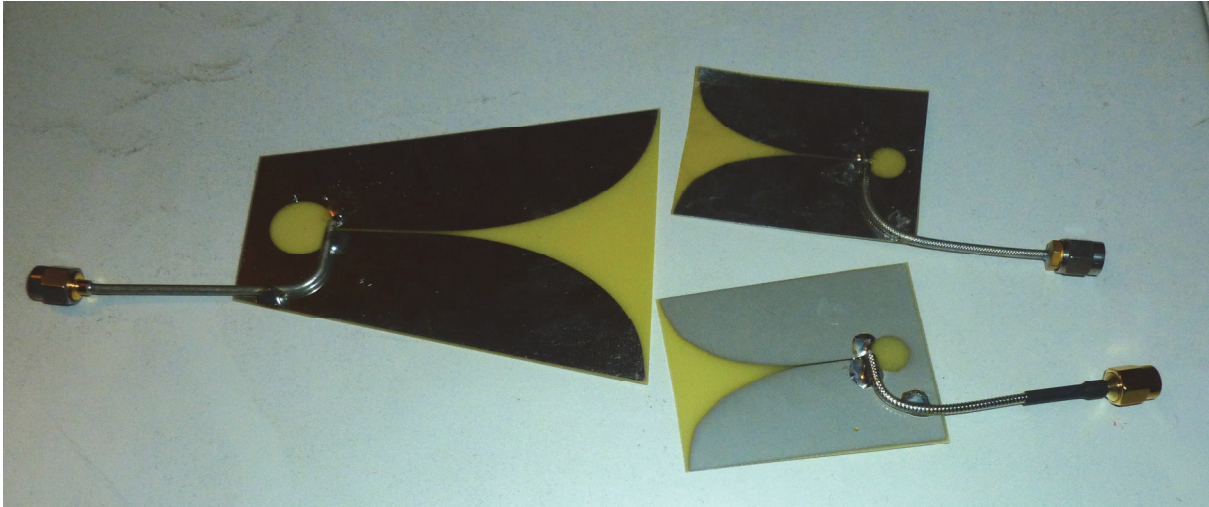


External Mixers

Kent Britain WA5VJB/G8EMY



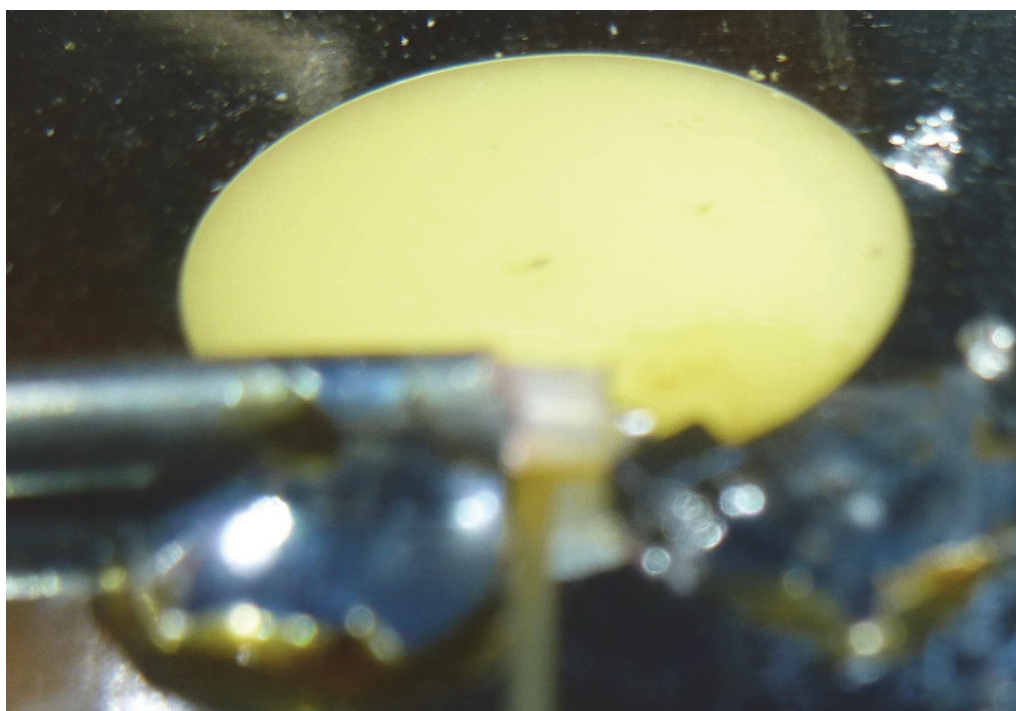
This is a project I plan to expand in the coming weeks. Here a Vivaldi antenna is used with a bit of coax and a microwave diode to form an external mixer for a spectrum analyzer.

For my early tests I have been using some Avago HSMS-280X detector diodes, but most any diode covering your desired frequency range should work. The HSMS-280X is a dual diode package so I have several ways to hook them up. One way for Spectrum Analyzers that use positive DC bias, or the other way for Spectrum Analyzer using negative DC bias.

I am also experimenting connecting the diodes in an anti-parallel configuration across the Vivaldi slot as a microwave multiplier. Quick way to test some of your really high frequency radios listening to a harmonic of your signal generator.

Many SMT transistors are rated to well over 10 GHz. I haven't had a chance to experiment here as yet, but the Base-Emitter junction of these transistors should also work as your mixer diode.

My 9-25 GHz Vivaldi's are really limited to 25 GHz by the use of SMA connectors. W5LUA has recently shown that these go well above 40 GHz when used with 'K' connectors. Hope to see just how far with some of the test equipment at MUD!



Not one of my better photos, but the best this camera would do. Yea, the coax lead needs to be a bit shorter, and the diode closer to the slot, but you get the idea. Just a series diode off the end of the coax.