

We had a good turnout for yesterday's picnic/tuneup at Ed Levin Park, with about 18 picnickers and 9 rigs tested.

Thanks to Larry and Chris for picking up the food and drinks, and thanks to Chris and Steve for helping me to set up the test range.

I hope the tests are helpful and that you had fun seeing the other rigs and chatting at the picnic.

See you on the microwaves!

Mike, K6ML

---- 10 GHz tests ---

We determined that the best height above ground level for the center of your antenna was about 5 feet above the ground. Everyone brought an 18 to 24 inch diameter dish this year, so their dishes should have been well illuminated if they were within 9" of so of the target height.

The range variation along the length of the test line is estimated at 1 dB. Dave AD6A can add a handicap of at least 1 dB because he was operating from the parking lot at a greater range and perhaps another dB or so due to a slight foliage obstruction.

---- 24 GHz tests ----

The range was not calibrated for 24 GHz. Relative ERP and MDS comparisons should be valid.

---- Discussion of (attached) Results ----

Results are attached, sorted by increasing measured effective radiated power (ERP) and decreasing minimum detectable signal (MDS). The bottom of each list is "best in show".

10 GHz ERP results: We calculated the predicted ERP for each rig, using the dish size and PA power level and assuming a 64% efficient dish feed.

The "Meas - Calc" column (dB) is negative if you under performed the prediction.

This year we seemed to have a bit more QSB; we saw about +/- 2 to 3 dB of variation.

Within that range, I'd say everyone's 10 GHz ERP was near their expected value.

10 GHz MDS results: We measured the MDS seen at each rig's antenna. We then calculated the MDS at the Rx input and compared it to a 500 Hz bandwidth 2 dB noise figure receiver. These tests rely on the operator's report of when they last heard the signal "just above the noise", which introduces a fair amount of variation (perhaps due to skilled weak signal operators possessing a narrower bandwidth filter in the grey matter betwixt their ears :). The result is a much wider variation in results. The five best results were almost a "dead heat" at the antenna, but the folks with a bit larger dishes should have done better than those the smaller dishes. N6JET and AD6A were about 20 dB behind the leaders, so (even after allowing for the expected variations) perhaps need to look into their LNAs. Chris's LNA was dead and had to be bypassed in order to get the reported result.

24 GHz ERP results: Andreas' ERP was about 15 dB off the pace, and a field replacement of a coax cable improved that to about 10 dB off the pace; he's looking into the other cables and his T/R switch. The others seemed fairly close to expectations.

24 GHz MDS results: Joel's and Andreas' were 5-6 dB off the pace, which may indicate a problem (but are close to the standard deviation of 6 dB). Mike's result was about 9 dB better than the average (perhaps that waveguide switch and DB6NT preamp were worth it :).