WA8LMF TNC Test CD Results

a.k.a. Battle of the TNCs

Compiled by WB2OSZ, September 2015

Last update, April 2016

It’s not that hard to build something that receives perfect APRS / AX.25 Packet Radio signals. Building something that works well, with all of the less-than-ideal signals out there, takes some effort.

How can we compare how well different TNCs perform under real world conditions?

The de facto standard of measurement is the number of packets decoded from WA8LMF’s TNC Test CD obtained from <http://wa8lmf.net/TNCtest/index.htm>.

Many have published the number of packets they have been able to decode from this test. Here they are, all gathered in one place, for your reading pleasure.

WARNING: Do not take these numbers too seriously.

There are a few things to keep in mind:

1. These tests were performed by different people, different times, different places, under different conditions.
2. Most don’t mention which track was used. Track 1 is easy. Track 2 is more difficult but generally closer to typical real world conditions. To find out why, see <https://github.com/wb2osz/direwolf/raw/master/doc/A-Better-APRS-Packet-Demodulator-Part-1-1200-baud.pdf>
3. Some information might be outdated. Newer versions of the same thing might be better.
4. Small differences are not significant. It all depends on the mix of packets in the test. If you took another similar collection another place, another time, the rankings might be a little different. Even under scientifically controlled, repeatable conditions, another 10 packets is only a 1% increase.

|  |  |  |
| --- | --- | --- |
| **Reference** | **TNC** | **Packets decoded** |
| KI4MCW  <https://sites.google.com/site/ki4mcw/Home/arduino-tnc> | Arduino Duemilanove (328p) | 871 |
| TNC-X | 818 |
| Argent Data OpenTracker 1+ | 729 |
| AGWPE 2005.127 | 500 |
| Linux PC soundmodem | 412 |
| Linux PC multimon | 130 |
| N4MSJ  <http://groups.yahoo.com/group/tnc-x/message/542> | KPC-3 | 986 |
| MFJ-1274 | 883 |
| AEA PK90 | 728 |
| Early Beta TT4 | 920 |
| 4X6IZ  <http://www.tau.ac.il/~stoledo/Bib/Pubs/QEX-JulAug-2012.pdf> | AX25 Java Soundcard Modem | 964 |
| N1VG  <http://www.tapr.org/pipermail/aprssig/2007-May/019449.html> | Tracker 2 | 910 |
| KPC-3 (non-plus) | 967 |
| uTNT | 970 |
| Tracker 2 with TCM3105 | 991 |
| AEA PK-90 | 728 |
| MFJ-1274 | 883 |
| Microsat  <http://microsat.com.pl/product_info.php?products_id=100> | WX3in1 Plus 2.0 | 981 |
| UZ7HO  <http://www.pe0sat.vgnet.nl/tag/uz7ho/> | UZ7HO Sound-Modem 0.83b | 1021 |
| OZ7HVO & OZ1EKD  <http://www.kissoz.dk/> | ARM32M4F TNC platform | 994 - 998 |
| WB2OSZ  <https://github.com/wb2osz/direwolf/blob/master/doc/A-Better-APRS-Packet-Demodulator-Part-1-1200-baud.pdf> | Track 1 / Track 2   * Dire Wolf version 1.2 | 1011 / 1004 |
| CT1EIZ <https://www.facebook.com/aprspro/posts/601800476638754> | Track 1 / Track 2   * APRSpro v2.1 (Note 1) * PocketPacket v2.2 * KPC3 | 1012 / 958  964 / 1  1043 / 942 |

Note 1: APRSpro uses demodulator from Dire Wolf with permission.

## Conclusions:

A couple decades ago, you needed specialized hardware for the best results.

Those days are gone. The “software” decoders are now leading the pack, leaving the modem chips behind.