My Home HF Set-up

By G8MNY

(8 Bit ASCII graphics use code page 437 or 850, Terminal Font)

After several years of HF improvements, I have ended up with this....

FEATURES

PSU Homemade Linear type, with 3A trip for low current leads, & mains filter.
SMPSU converted DEL Server one, with thick PA DC leads, & Ferrite rings.
BHI DSP LS gives 10-20dB of noise reduction, used with a large LS.
Noise Canceller JPS ANC-4 with aerial, gives >15dB of QRM nulling on 1 source.
IC735 sometimes used with very effective tuneable Noise Blanker or Attenuator.
Auto caller Home-made CQ repeating & off air record & playback.
IC735 used with it's very effective AF processor (10dB clipper) & standard Mic.
T500M PA draws 75A @ 13.8V, so use SMPSU or float a car batts with thick leads.
My T500A ALC ensures the Amp can't be over driven even on 11V DC or a bad SWR.
Palstar AT1500CV ATU, cross needed power, handles high SWRs & can be balanced.
Dummy load with PEP meter gives accurate PEP power measurements (scope option).
Scope for monitoring Tx envelope & Rx Noise (timebase locked to mains).
Mains filters both include earth chokes.

ON AIR

I often get comments on how good the AF is (especially under noisy band conditions), it is just a well set up standard AF clipper (compressor) in the IC735 with it's toppy AF, do not clip bassy AF! But it does not suit all ears & in strong signal QSOs, I turn the compressor off. And I always use close up mic, to reduced background noise & room echo, & keep the ALC drive level correct.

The PA helps a lot, & when I go back to QRP stations M6s etc, & run their QRP, they often can't hear me, or would not have called me with a weak QRP signal.

I have had very complementary reports on how clean (narrow) the QRO signal is. E.g. "-35dB down on adjacent ch" & "You are much stronger than me at remote SDR Rx site & also narrower!" So the old IC735 rig with its comms quality audio, fixed narrow Tx IF, & older 1977 Commercial PA with high levels of NFB, & my ALC circuit, keep the Tx signal all very clean.

My Autocaller CQ, keeps the channel busy, while I catch up with paper log, or get the perfect SWR etc. & then I get called. But it is a bit noisy on record especially into the rigs clipper. But it does make for lazy operating with less scanning. I do use 2nd VFO for that & go back to my CQ VFO.

The 3 noise systems I use, 1/ rig's tuneable Noise Blanker, 2/ BHI DSP LS, & 3/ JPS Noise Canceller (null steerer), all complement each other very well, as
they work differently. Sometimes all 3 are needed to get a usable band here, in RF noisy Croydon. With the JPS ANC-4, do not Rx too much Tx power on the noise aerial, as it can be damaged with nearby QRO! Using seperated aerials as I do, stops this, & also helps get deep nulls while leaving Rx signals, with same location aerials you tend to null out all signals at once!

Scope timebase is locked to mains, & both beams are added to give just 1 line. Rx AF can help adjust the Noise Canceller & rig Noise Blanker threshold, as you can see the offending neighbours SMPSUs, & null out one pair of 100Hz noises, but not if 2 or more appear on another mains phase. Not mains locked QRM from TV/PC screens, polling data can be seen, & other non ham things like over the horizon radar "Wood Pecker" or "QRO 50Hz FM sweep jammers" are easily identifed too.

The Tx envelope display shows up the peak with or without compression, all nicely rounded peaks under ALC power control, with no hard clipped flat tops.

See all these related TECH buls....
"Autocaller with old Maplin kit"
"High AMP Crowbar Protected PSU"
"DEL 7000815 SMPSU 12V 75A Mods"
"T500 M 12V 500W HF Linear"
"Variable Speed Thermal Fan"
"BHI Noise Eliminating DSP LS"
"IC 735 No RF Output Fault"
"Palstar AT1500CV ATU"
"QRO 1kW HF Metered Dummy Load"
"A Nest of Dipoles for HF"
"Mains Plugtop Filter Adapter"
"Oscilloscopes"
"AF 2 Tone Test Osc Design"
"QRO v QRP".

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73 de John G8MNY @ GB7CIP