

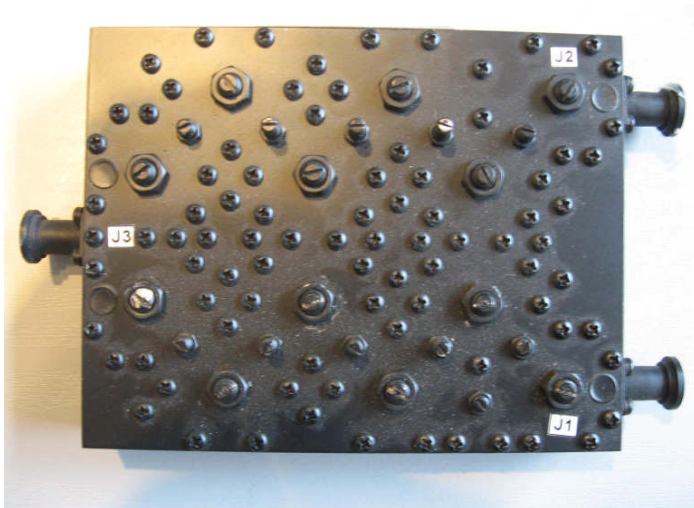
3400 MHz getting started

A brief look at equipment for 3400 MHz (9cm).

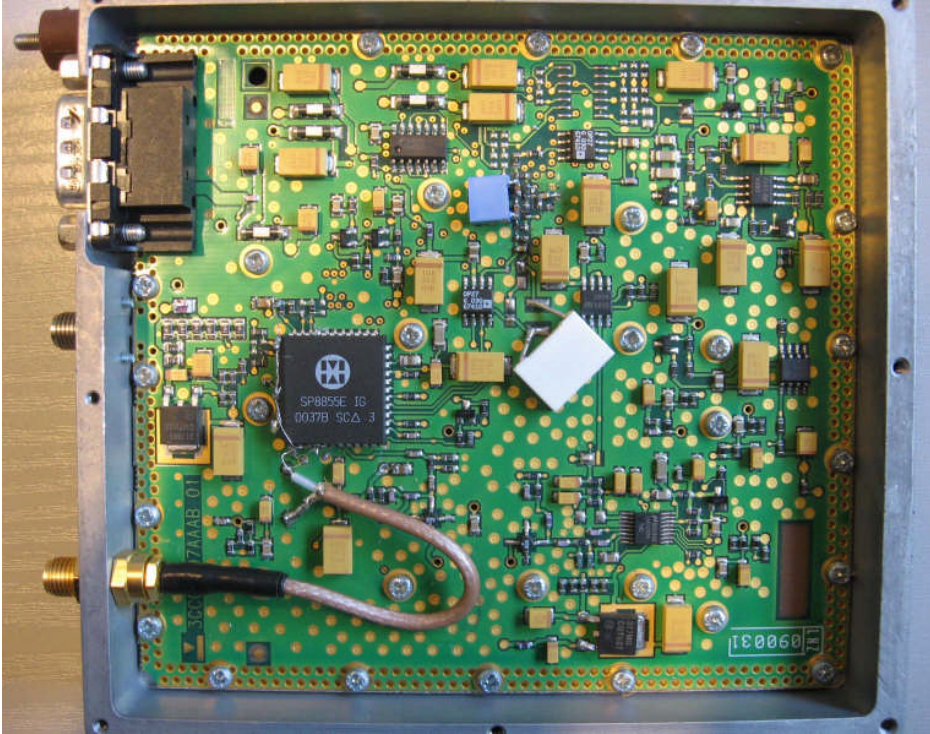
Receive amplifier – fortunately there are lot of low noise amplifiers available on the American surplus market. They were used as part of C-band satellite receive systems, for 3.7-4.2GHz. The photo shows a typical lna, that has had the original waveguide feed cut-off, and replaced by a male sma connector. Noise figure measures 0.85dB at 3400 MHz, with a gain of +50dB. The high gain means that the amplifier can be remotely mounted, A small attenuator may be required before the bandpass filter.



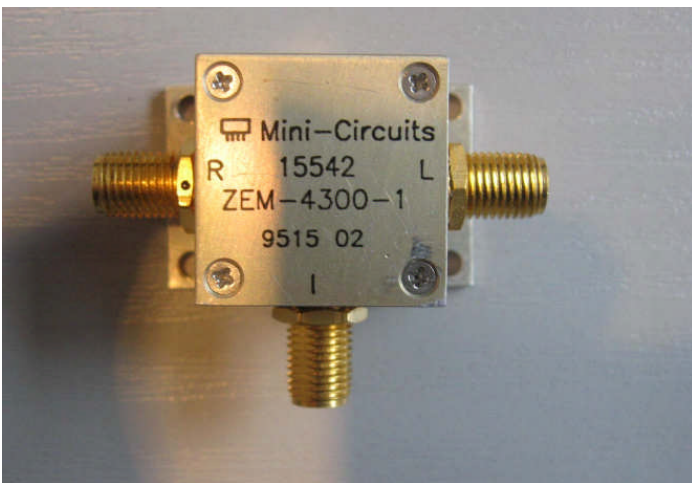
Bandpass filter – again there is a solution on the surplus market. Duplexors are available, half of which can be used either without, or with minimal re-tuning. The rejection is such, that an IF of 144MHz can be used.



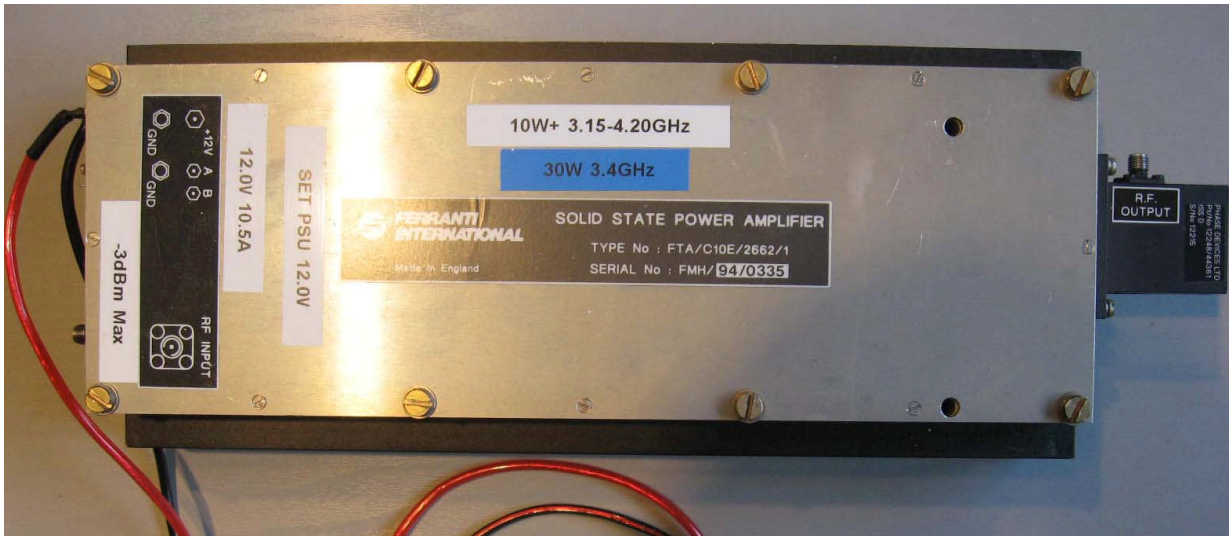
Local Oscillator – here there is a choice of building up one of the G4DDK source / multiplier boards, with a x2 or X3 multiplier on the end, or a similar oscillator multiplier board. Alternatively using a modified frequency synthesiser. For a 144MHz IF the LO frequency is 3256MHz. If an Alcatel synthesiser is used, it is necessary to take an output before the internal frequency doubler.



Mixer – typically a packaged DBM with sma connectors is used.



Power Amplifier – surplus amplifiers are readily available. Ex-Ionica units can give around 15W. A Ferranti unit is picture which will deliver 30W, a pre-tuned is available for around £85 (Martlesham Microwave Group meeting, November 2009).



Using the parts shown a competitive (30W output, 0.85dB NF) 3400 MHz transverter was built for a cost around £150.

Full transverter kits are available from Kuhne Electronics [http://www.kuhne-electronic.de/en/shop/147 Transverters](http://www.kuhne-electronic.de/en/shop/147_Transverters)
Down East Microwave <http://www.downeastmicrowave.com/DEMICALT.pdf>