



C-Band and Ku-Band In Focus Feed Made From a Vegetable Can

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The C/Ku-Band feed used in real life at a 1.80 m dish receiving PAS4 on 72East

There are many satellites that transmit signals in both C-band and Ku-band. If you already have a large antenna, it won't take much to modify the existing system so that both frequency ranges can be received.

It all starts with a vegetable can that is 65mm in diameter. Remove the lids on both sides. Drill a hole in the side of the can large enough so that a 20mm copper tube can slide into it. A 90° copper elbow is then attached to the copper tube on the inside of the can. The other end of the tube goes to the Ku-band LNB. Important: the copper tube cannot be longer than 80mm while its diameter can be as small as 17mm and is determined by the reception frequency. The higher the frequency, the smaller the diameter.

Installing this piece of handiwork will take some feeling. The C-band LNB should first be aligned to a C/Ku-band satellite such as PAS4 at 72° east in South Africa. The vegetable can is then placed over the C-band feed and slowly turned until the C-band signal is at its strongest. Reception through the copper tube protruding out of the can will of course be somewhat diminished, but by rotating the can the smallest level of attenuation can be found.

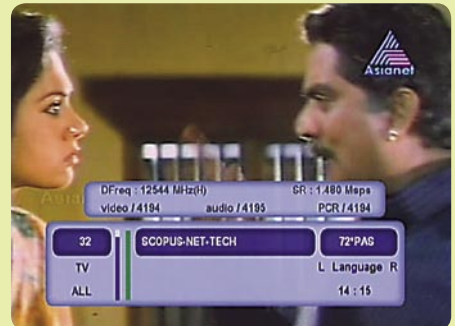
Next, attach the Ku-band LNB to the exposed end of the copper tube and rotate it until the best signal strength is achieved. Finally, simply attach a DiSEqC switch so that you only have one cable going to the receiver and there you have it, the number of channels you can receive has greatly increased without any large investment: a C-band LNB for 45 Euros (17K), a Ku-band LNB for 20 Euros (0.4 dB) and some accessories for 5 Euros much of which the do-it-yourselfer will probably already have in his stash of spare parts.

Note: Naturally this combination does tend to reduce the signal level in only one frequency range compared to an individual feed. But this loss seems to be limited to roughly 10%.

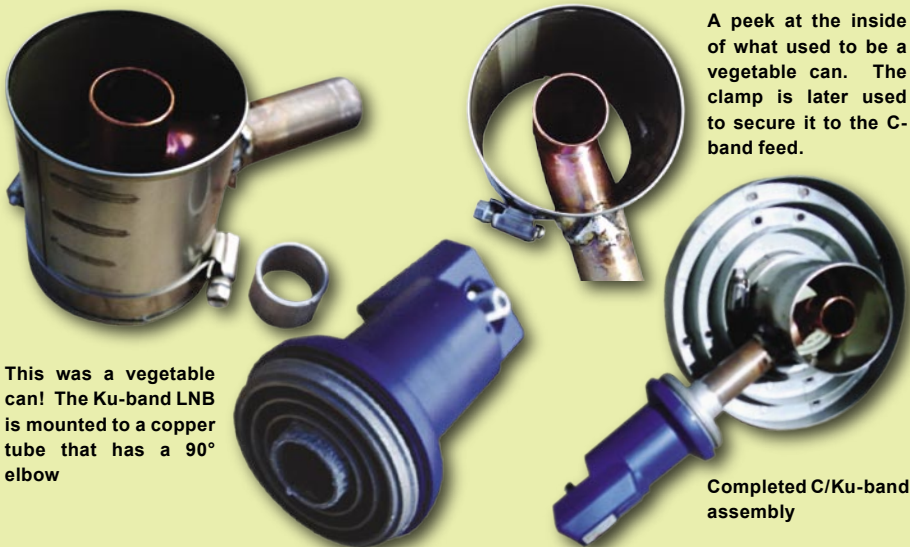
What good is a can of vegetables? Well, how about this: open it up with a can opener, spoon out the contents and have it for lunch, clean out the empty can and then use it to build a combination feed. Just get yourself a copper tube from a hardware store like the ones used in heating systems and off you go.



C-band Screenshot from Pas4...



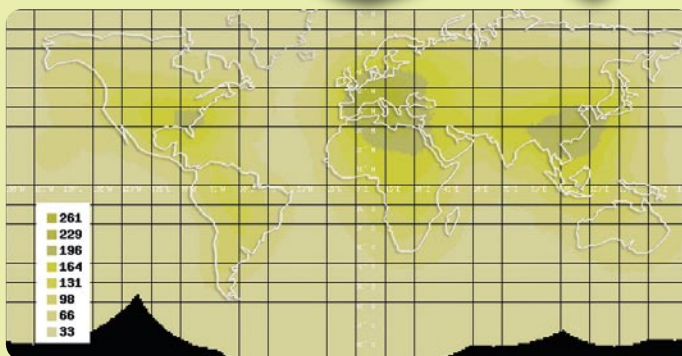
...and from the same satellite in the Ku-band



This was a vegetable can! The Ku-band LNB is mounted to a copper tube that has a 90° elbow

A peek at the inside of what used to be a vegetable can. The clamp is later used to secure it to the C-band feed.

Completed C/Ku-band assembly



C/Ku-band satellites transmit in these areas with a minimum of 42 dBW. In the center of these zones as many as 261 digital FTA channels can be received. In the outer regions this number drops back to 33