

INFOSAT

C/Ku band Combifeed with Integrated DiSEqC Switch

Thomas Haring

The C band is popular in many areas of the world, mainly in areas with heavy downpours or high humidity, since under these conditions the C band offers more advantages, being less sensible to rain compared to signals in the Ku band. But even in areas dominated by Ku band signals, as for example in Europe, there are still plenty of C band programmes to get. But erecting a second dish just for C band is often too much of trouble.

Right into this gap comes the C/Ku band LNB on offer by INFOSAT from Thailand. You no longer need two dishes, but you use your existing dish and just replace your current Ku band LNB against

INFOSAT's combifeed C/Ku band LNB. Of course you would better own a bigger dish, since C band signals usually are less strong than signals in Ku band. In most locations, a dish with 120-cm would be sufficient to get in some interesting channels

transmitted via satellites in C band.

We gave it a test run at our editorial offices in the center of Europe. INFO-

SAT's C/Ku band feed delivered from Thailand was designed primarily for use on prime focus antennas; although with a little modification ingenuity, it can be fitted on an offset antenna. For our first test we opted to use a 120-cm antenna already installed on the roof of our testing facility. Such a 120-cm antenna already gives you access to thousands of channels from around the world in the Ku band. But as numerous as the Ku band availability really is, long-distance reception is typically achieved only with C band and thanks to this new Combifeed, it is quite easy to retrofit your current system for C band reception.

Since offset antennas are not normally designed to handle C band feeds, a cable clip, available from any electrical installer, was used to secure the Combifeed to the dish. It's not exactly a professional solution, but it is very effective and inexpensive. The installation required some dexterity but after several attempts and some fine tuning adjustments, the feed was in the correct position.

The entire assembly including antenna motor was previously aligned using a standard 40mm Ku band LNB; the less


■ The C/Ku band Combifeed mounted in a prime focus dish



sensitive C band should therefore be no problem. With great expectations, we turned the antenna to the especially strong EXPRESS AM1 band satellite at 40° east.

According to INFOSAT, the Combifeed has a Ku band reception range of 10.7 to 12.75 GHz using LOF (local oscillator frequency) values of 9.75 and 10.6 GHz as well as a C band range of 3.4 to 4.2 GHz with an LOF of 5.150 GHz. The specifications also claim a gain of 65dB with a noise figure of 0.3 dB.

Our first tests were aimed at the C band so we quickly set up the correct LOF and then had a look at our spectrum analyzer. It indicated a strong signal located at 3675R. We quickly started a channel scan and found numerous Russian channels with plenty of signal strength. Further on, South American channels with relatively high signal strength could be found on NSS 806 at 40.5° west. A number of MCPC and SCPC transponders were receivable in sufficient quality. Especially strong were some Columbian channels on 4021L and RCN TV on 4016R; unfortunately, this channel was encrypted. Even a package of programs from Venezuela on 3880R could be received but without any bad weather reserves. A few other transponders were also receivable.



■ The C/Ku band Combifeed mounted in a offset dish

We were less successful when we tried NSS7 at 22° west where we could only receive 3644R without any problems. On Atlantic Bird 3 at 5° west we were able to easily view 4154L but all the other transponders hovered around the threshold level of the receiver. Even though the signal analyzer identified a number of clearly recognizable peaks on the display, they were still not strong enough for actual reception.

Things looked a little better on INTELSAT 907 at 27.5° west where we could receive three transponders (3715R with just some radio channels, 3831R with feeds from RTP/Portugal and 4048R). On INTELSAT 903 at 34.5° west only one transponder was receivable.

For all the other C band satellite receivable at our location our dish was

simply too small. The normally strong EXPRESS AM44 satellite at 11° west could not be received with our 120cm antenna; the signals that we saw on the spectrum analyzer were too weak.

The next step involved taking a closer look towards the east. We stumbled across a few surprises: the (unfortunately encrypted) AFN package on INTELSAT 906 at 64.2° east on 4094L was identified by our receiver, Bangla Vision could be seen on APSTAR 2R at 76.5° east on 4049H and the Express AM1 at 40° east delivered a number of Russian channels with plenty of bad weather reserve.

Up until now we were quite pleased with the results we had gotten; now it was time to take a look at Ku band reception.

The strong DTH positions such as ASTRA at 19.2° east, HOTBIRD at 13° east, ASTRA2 at 28.2° east or ASTRA 3A at 23.5° east could all be received without any problems. We should mention at this point that the INFOSAT C/Ku band Combifeed is configured for reception of circularly polarized signals. With that said, the circularly polarized signals on EUTELSAT W4 at 36° east could be received in surprisingly good quality.



■ Included in the package: the C/Ku band Combifeed by INFOSAT in one housing with feed and jumper cable for the built-in DiSEqC switch.

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If you remove the dielectric in the feed, then standard Ku band H/V signals could be received effortlessly. The reasons for the diminished performance of the Combifeed in the Ku band are fairly obvious. On the one hand, the included feed was not designed for use on offset antennas so you really can't blame the manufacturer for this shortfall.

On the other hand, the homemade feed holder makes it rather difficult to perfectly align the LNB in the focal point of the antenna. And let's not forget that the C band is much more forgiving compared to the Ku band in terms of antenna alignment.

Overall we can say that it definitely pays to replace your current LNB with the INFOSAT C/Ku band Combifeed. Don't expect miracles with signal quality in the Ku band, but for the reception of the strong C and Ku band positions, the Combifeed would be the perfect choice. At the same time, it gives you a peek at the wonderful world of C band even with a small antenna without having to eliminate the Ku band.