

Invacom QPH 031 & QPF 031

Two in One

You enjoy watching all those Ku-band FTA channels but you also can't do without your favorite PayTV service. You've always wanted to use the same dish for both so that you could enjoy the best of both worlds. This is nothing new.



QPH 031 Mounted on 76cm Antenna

There have been ways to do this on one antenna for some time now. The problem was that the top DTH Pay TV services in North America (DishNetwork and DirecTV in the USA, Bell ExpressVu and Star Choice out of Canada and Sky Mexico) all use completely different LNB's than those used for standard FTA Ku-band reception. Not only do they use different local oscillator frequencies, but they also are also designed to receive only circularly polarized signals.

This meant that in order to use one dish to receive both types of signals, two individual LNB's had to be used where one was mounted in its normal position and the other was mounted alongside at an offset to the first LNB. This method works but the offset LNB will receive an attenuated signal because it is not sitting directly in the focal point of the dish like the first LNB is.

If the dish was large enough this was usually not too big a problem unless you were dealing with weaker signals. And properly

installing the offset LNB may not always be as easy as it sounds. This way of thinking has now completely changed.

Invacom, Ltd, based in the United Kingdom, has recently introduced a new series of LNB's that incorporate the features of two LNB's into one. They have taken a standard Ku-band LNB and combined it with a PayTV LNB. The result is an LNB that can handle both linearly and circularly polarized signals at the same time.

It comes with two distinct local oscillator frequencies (LOF's): 10.750 GHz for standard Ku-band reception and 11.250 GHz for PayTV reception. Not only that, these LNB's boast a noise figure of only 0.3 dB! We could not pass up the opportunity to take a closer look at these unique LNB's.

This new Invacom Quad Polar Legacy CP/LP LNB is available in two versions from Invacom, the QPH 031 LNB with a standard 40mm mounting flange and the QPF 031 LNB with a C120 mounting flange.

The first feature that caught our eye when the package was opened was the size of these LNB's. They are substantially larger than



Connector View

what you might normally expect to see in a Ku LNB and also carry with them a little extra weight. Obviously, this is the result of squeezing two LNB's into a single housing. But this is a small price to pay for the ability to receive both linear and circular signals with the same LNB.

Both versions come assembled in a plastic white housing that completely shields them from the weather. They each have four outputs, two marked "L" for linearly polarized signals and the other two marked "C" for circularly polarized signals. Each output operates independently from the other three making it possible to connect up to four different receivers to this one LNB with each receiver operating independently from the others.

Both versions also come with a moveable plastic cover that protects the four "F" connectors from the elements. Simply slide the cover into the main LNB housing to gain access to the output connectors. The cover slides out far enough to completely protect the four connectors even with cables attached.

One thing we should point out right from the start: the LOF's that these LNB's use clearly suggest that they were designed with the North American market in mind. The linear LOF of 10.750 GHz is really not standard anywhere else in the world. Also, there is very limited availability of circularly polarized Ku-band signals outside of North Amer-



ica. Keep in mind: these LNB's can be used for linear Ku-band reception in other parts of the world, however, they are not universal LNB's so reception of the lower Ku band is not possible.

Everyday Use

The QPH 031 can be mounted on almost any dish thanks to its 40mm diameter flange. We first wanted to see how well it could handle linear and circular signals at the same time. We installed the QPH 031 on a 76cm dish and pointed it to the Galaxy11/Nimiq1,3 combination at 91° west. We ran two cables from the LNBF, one from the circular output and the other from the linear output, into a DiSEqC switch. The output of the DiSEqC switch was routed to a FortecStar Lifetime Ultra receiver.

With the receiver set up to receive channels from both satellites, it had no trouble switching between the linearly polarized signals on Galaxy 11 and the circularly polarized signals on Nimiq 1,3. An FTA scan of Nimiq revealed numerous FTA radio channels and several FTA Bell ExpressVu promotional TV channels.

Next we wanted to see how the Invacom's stacked up against standard LNBF's. We connected the QPH 031 to a 1.2-meter dish pointed to Hispasat at 30° west and compared it to an ALPS universal LNBF with a 0.7 dB noise figure. The Invacom performed as expected by displaying a clean picture from the weaker Ku signals on this satellite.

Next we checked the performance of the Invacom on a 90cm antenna pointed at Telstar 12 at 15° west and achieved similar



results with the weaker Ku signals that were found here.

Finally, we used a 76cm dish and aligned it with DishNetwork's Echostar satellite at 119° west. First we installed a standard DishNetwork LNBF and aligned the antenna

for maximum signal. We then swapped out the standard LNBF and replaced it with the Invacom QPH 031. Once again, the results were exactly as expected, with the Invacom LNBF providing a strong signal to the receiver that carried with it plenty of bad weather reserve.

Expert conclusion



The Invacom QPH 031 and QPF 031 combined circular and linear LNBF's are ideally suited for simultaneous reception of linearly and circularly polarized Ku-band signals. Its four outputs (two linear and two circular) allow multi-receiver operation. This combo LNBF eliminates the need to install an offset LNBF. It also allows the use of only one antenna for the reception of both FTA channels and DTH PayTV services.



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The LNBF's are much larger than standard LNBF's and might run into some obstacles if mounted on a multifeed antenna. They are also somewhat heavier than standard LNBF's so a secure antenna mount is highly recommended. They are designed primarily for the North American market. Use in other parts of the world would be severely limited.



TECHNICAL DATA	
Manufacturer	Invacom, Ltd., Hertfordshire, United Kingdom
Fax	+44-1438-310115
E-mail	sales@invacom.com
Model	QPH 031 and QPF 031 Quad Polar CP/LP LNBF
Function	Four-Output LNB (C120 Flange) and LNBF for Simultaneous Reception of Linearly and Circularly Polarized Signals
Input Frequency Range	11.7 – 12.2 GHz (linear) and 12.2 – 12.7 (circular)
Noise Figure	0.3 dB (typ)
Gain	55-59 dB
LOF	10.750 GHz (linear); 11.250 GHz (circular)
Connectors	4 x "F" type (female)
Impedance	75 Ohms