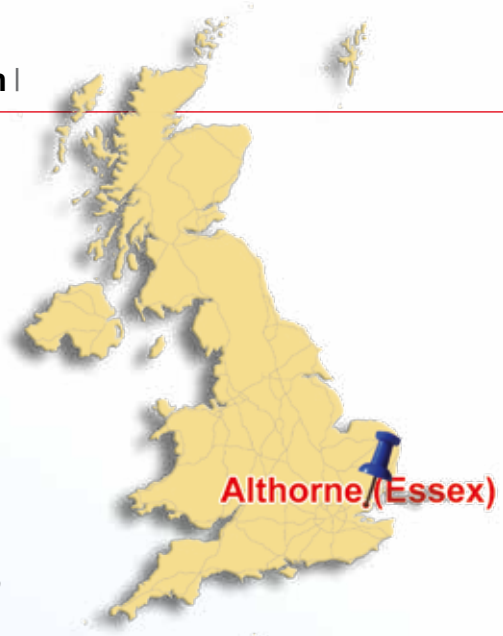
Global Invacom goes Fibre DTT

Alexander Wiese



The British company Global Invacom is best known to TELE-satellite readers as the inventor and manufacturer of the sensational fibre optic LNB system (see TELE-satellite issues 04-05/2008 and 08-09/2009). With an optical system distances are no longer a factor since the attenuation in a fibre optic cable is next to nothing. It's an absolutely great system except for one thing: these days people want not just satellite TV but digital terrestrial TV channels as well. Up until now, that meant once again that you needed two separate cables routed to the TV; one for satellite signals and the other for terrestrial digital TV signals.

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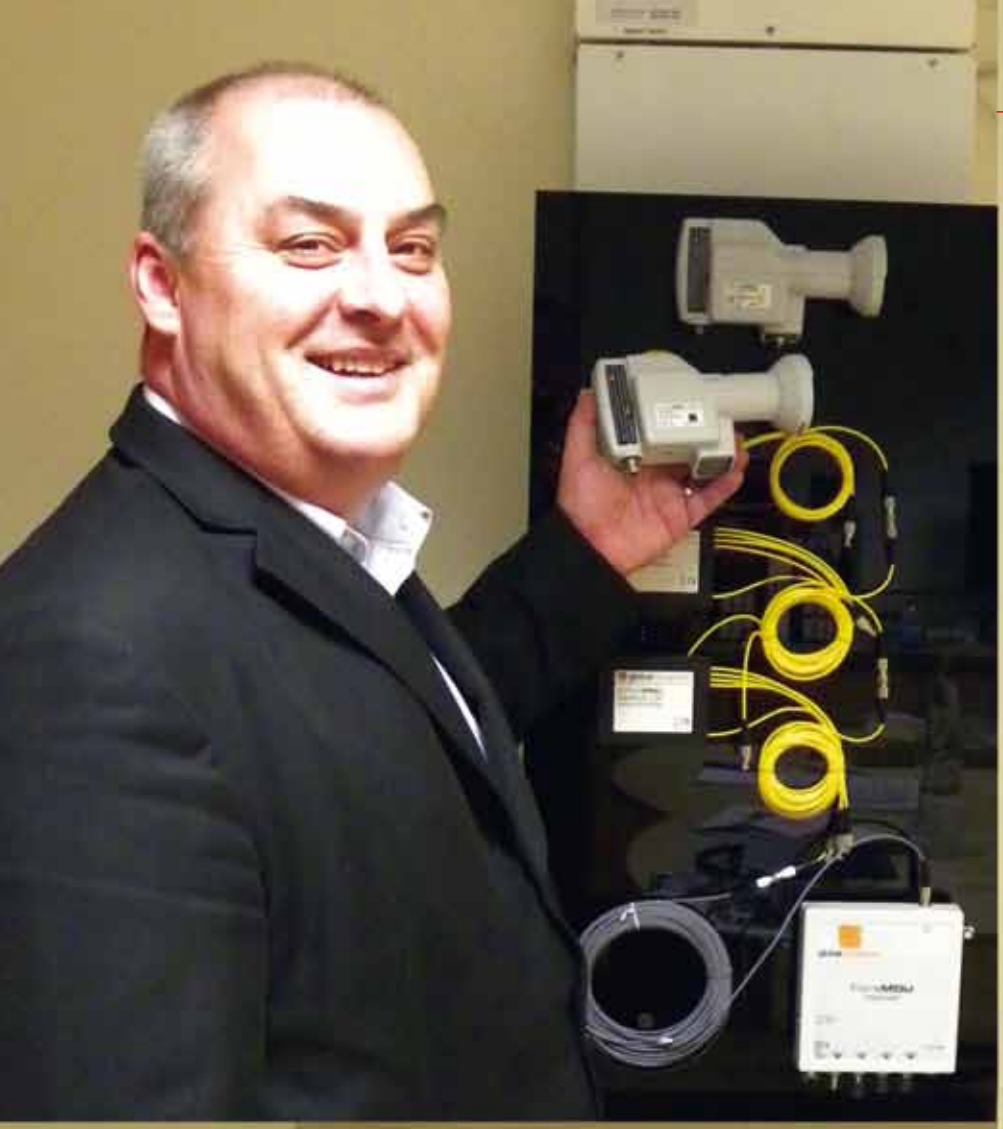
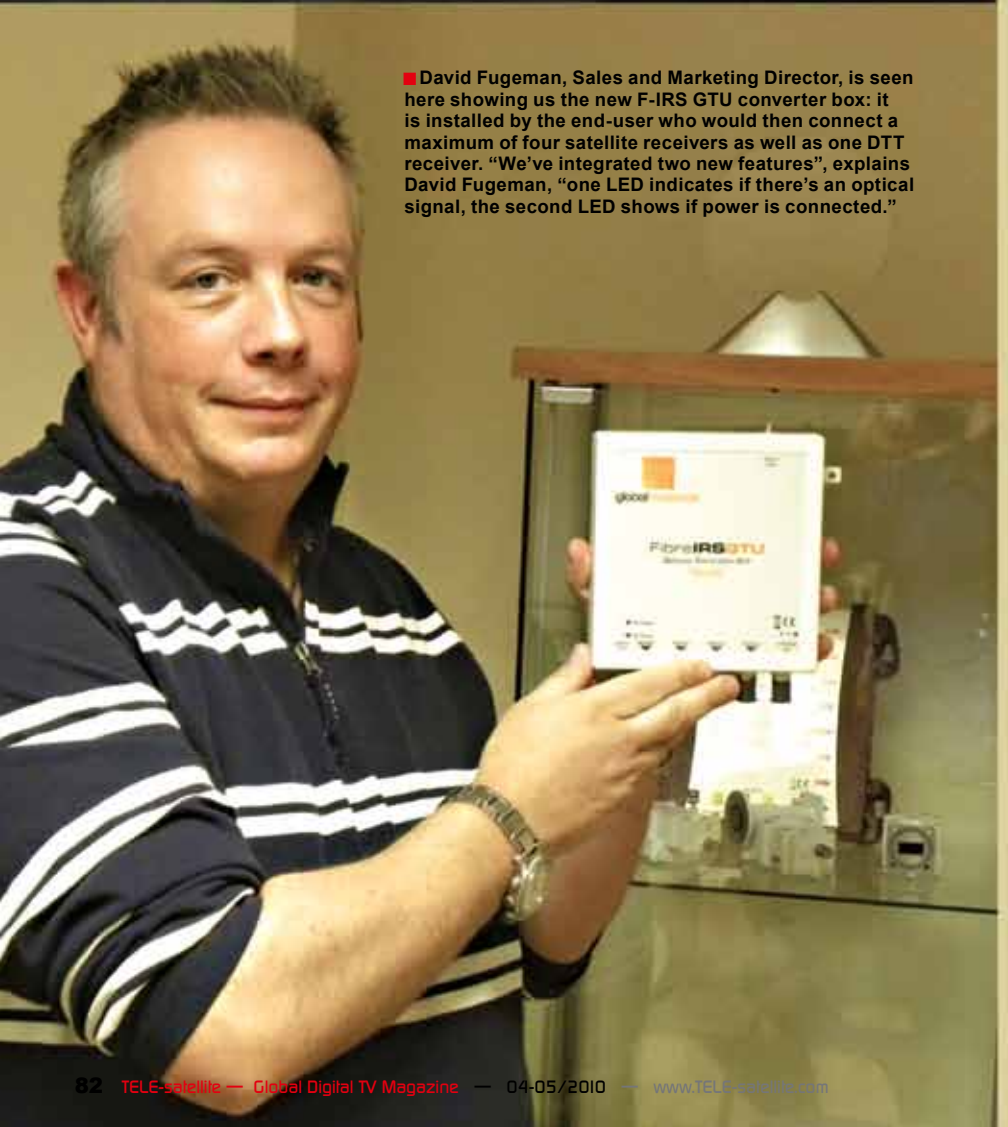
Available online starting from 2 April 2010

■ **Global Invacom has two locations in London: here we see their head office in Althorne (Essex).**



Ivan Horrocks, Global Invacom's Director of Sales and Marketing, is showing us the new F-IRS LNB (Fibre Integrated Reception System): the new LNB utilizes a coaxial N output instead of an optical output. This output supplies the 0.95 to 5.45 GHz frequency range to a 1.5-meter long coax cable which connects to the F-IRS ODU32 (Outdoor Unit). Global Invacom opted to use N-type connectors on this coax cable. "These connectors are perfect for use with this high frequency range and above all are excellent watertight connectors", explains Ivan Horrocks the reason why standard "F" connectors weren't used.



David Fugeman, Sales and Marketing Director, is seen here showing us the new F-IRS GTU converter box: it is installed by the end-user who would then connect a maximum of four satellite receivers as well as one DTT receiver. "We've integrated two new features", explains David Fugeman, "one LED indicates if there's an optical signal, the second LED shows if power is connected."

That was yesterday! Today one single optical cable is enough to transport both satellite and terrestrial signals. Global Invacom has expanded their system to include DTT signals as well. Ivan Horrocks, Director Sales and Marketing, explains to us how this works: "We took the satellite signal carried in the optical cable and combined it with the DTT signal; now both signal formats can be carried on one optical cable."

For this purpose, Global Invacom developed a new system that will be marketed under the nickname "Wholeband", or more officially, F-IRS (Fibre - Integrated Reception System). But first we want to take a quick look again at how Global Invacom's optical system works: the optical LNB (universal LNB) takes the four satellite frequency ranges, that is, the upper and lower bands in both horizontal and vertical polarizations, and "stacks" them on top of each other so that all four bands are carried over the optical cable in one frequency range. Each of these four bands covers 1000 MHz and if you place them one on top of the other you get a bandwidth of 4000 MHz.

So much for the satellite range. How do you include the DTT range? Very simple: Convert the Digital Terrestrial Transmissions using another laser at a different frequency then combine the two together.

In order to do that, Global Invacom had to modify their LNB system: the optical LNB already has the laser built into it so that the optical cable can be connected directly to the LNB. To include terrestrial signals, Global Invacom could have added a second connector on the LNB for the terrestrial antenna along with the necessary electronics. "This would have been theoretically possible", says Ivan Horrocks, "but it really doesn't make any sense since the LNB would have become too heavy and bulky. Not to mention it would have created problems for installers in that

a second cable attached to the LNB would've had to be used."

The solution is to route the converted 0.95 - 5.45 GHz satellite signal via a high frequency coaxial cable - Global Invacom selected a standard 1.5-meter long cable for this purpose - to a newly designed outdoor unit: the F-IRS ODU32.

On this weather-proof box that can be installed directly on the antenna mast or on the mounting wall, all of the cables are connected: the coax cable from the optical LNB, the cable from the terrestrial antenna (via a digital processor) and the 12-volt power line.

The F-IRS ODU32 provides two optical outputs that when using it's maximum split capacity each ODU output can be connected to a maximum of 32 F-IRS GTU converters. Four satellite receivers as well as a DTT receiver can be connected to each of the (Quad) converters so that this system can supply a total of 256 satellite receivers and 64 DTT receivers.

But the engineers at Global Invacom didn't stop there: they developed an active four-way splitter that can be connected to the LNB coaxial cable output so that this coaxial cable signal with its stacked frequency bands can then be connected to four ODUs instead of just one. This quadruples the number of possible connections; in other words, now a maximum of a whopping 1024 satellite receivers and 256 DTT receivers can be connected to a single F-IRS LNB + one terrestrial antenna. If you need to be able to supply a large number of homes or if you have to cover very long distances, you can now carry both TV modes, satellite and DTT, in this optical system.

Global Invacom plans to introduce this new system in 2010 at ANGA in Cologne. If you can't make it to this trade show, you'll have another opportunity in Singapore at CommunicAsia as well as in Amsterdam at the IBC. Or you can simply wait until we put this system to the test and report on it in one of our upcoming issues of TELE-satellite.

After so many new things have come out of Global Invacom, we had a chat with Sales and Marketing Director David Fugeman. We asked him how this optical system got its start.

David thought back for a moment: "Sales in large numbers actually began back in July 2009. By the end of the year, that is, within the first six months, we achieved fibre optic product sales of roughly 2.5 million Euros. For 2010 we are expecting an increase for the entire year to 8 million Euros."

Ivan Horrocks adds that most of the LNB systems were sold and placed into service in Europe and The Middle East. He estimates that in these two regions 60% of all the previously sold systems are in use.

At the moment, this system only comes with a universal LNB for offset antennas. This may explain why this system is not as popular yet in other regions. But this is about to change. By the time this issue of TELE-satellite is published, the optical system will also come with a flange-LNB (C120). A preliminary report on this system can be found in this issue of TELE-satellite.

This new system will give Global Invacom access to the professional large community service providers that are more likely to use prime-focus antennas for their systems rather than offset antennas. Further down the line Global Invacom considers plans for C-band LNBs and also LNBs with non-standard oscillator frequencies (such as for Australia). "Our engineers are working on all of these solutions", confirms Ivan Horrocks, "but at the moment we don't know when they'll become available."

Interesting is the sales ratio of optical LNBs versus the necessary F-IRS GTU converters that transform the optical signal back into a satellite receiver signal. "In the first six months that ratio was 6 to 1: for every six converters there was one LNB shipped", comments David Fugeman, "We can see now that this ratio will change dramatically: by the end of 2010, we expect it to be 15 converters for each LNB."

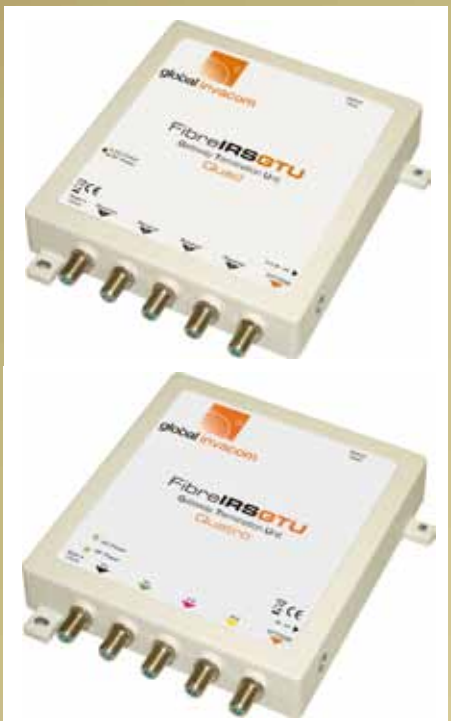
The explanation for this came from Ivan Horrocks: "In the early stages, installers were testing the system and purchased only one converter and one LNB. As the technicians became more and more familiar with this system, smaller reception systems started to be fitted with the optical LNB system. In 2010 when many of our customers have gotten to know the optical system much better, they will expand their installations to include larger community-oriented systems." The larger a community's system is, the more F-IRS

Samantha Bransgrove, Marketing and Communication at Global Invacom, is seen here showing us one of the first F-IRS ODU32 prototypes. The coaxial cable from the F-IRS LNB is plugged in here along with the cable from the terrestrial antenna; the two optical outputs supply the combined satellite TV and DTT signals.

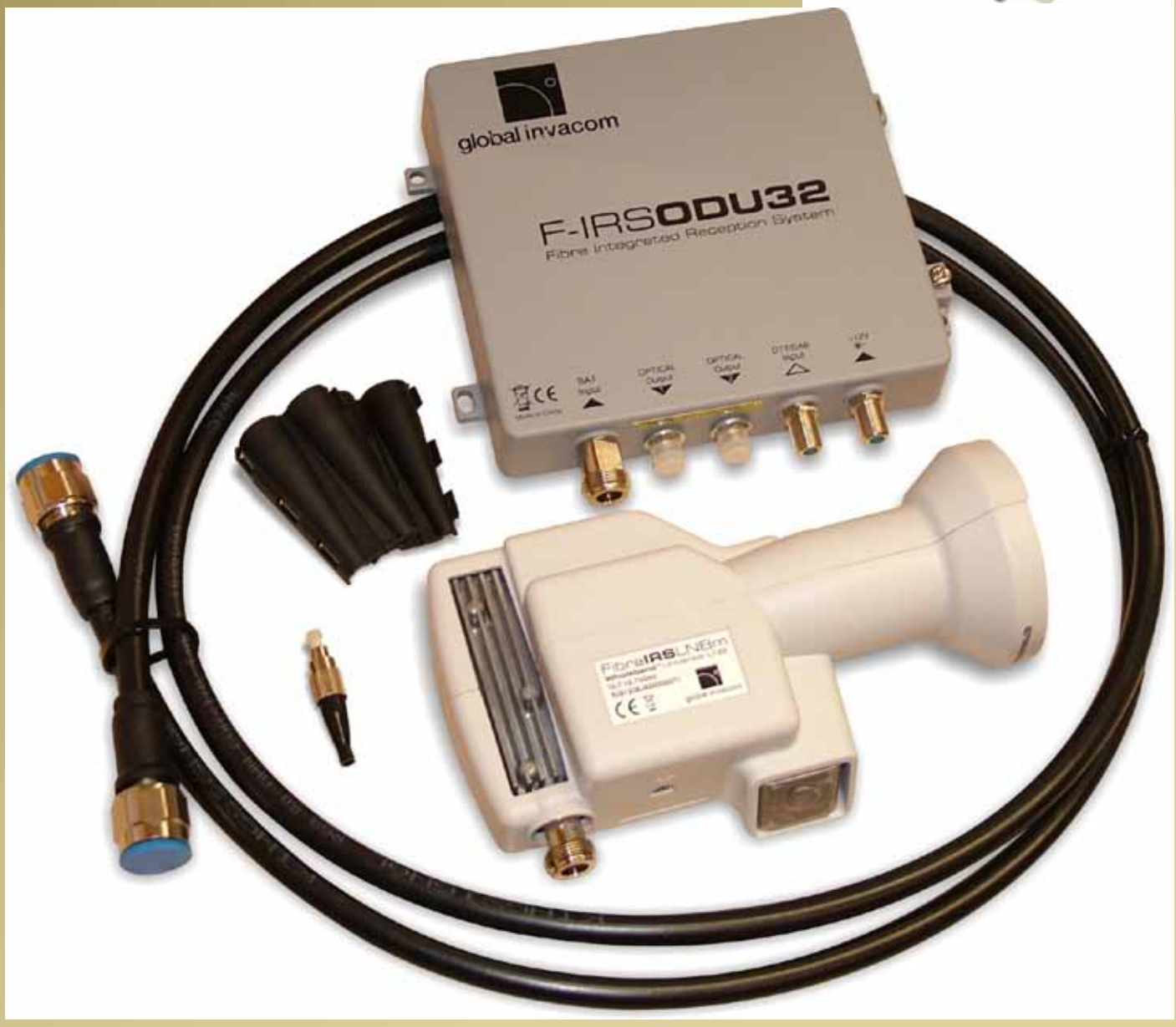
GTU converters that would be needed; the satellite dish however, just like with smaller reception systems, only needs the one LNB.

Global Invacom, with their self-developed fibre optic reception and distribution technology, has opened up their own brand new market. In this way Global Invacom has not just limited themselves to their own LNB and converter products but also is a supplier of the necessary accessories such as optical cables and splitters. Ivan Horrocks makes an interesting point: "Since we see ourselves offering an optical cable service for our customers, we are able to pass on our low purchase prices to our customers." To put it simply, this means if you buy optical cables and splitters from a specialized provider, you can expect to pay more! "Above all though we provide a guarantee that our cables will work perfectly with our system", comments David Fugeman.

It's an excellent marketing strategy; if you can offer a complete product group and that at inexpensive prices, it won't take long for you to become a market leader!



In the end-user's premises these converters are installed: at top the Quad version for direct connection of 4 satellite receivers and 1 DTT receiver. At bottom the Quattro version to connect f.i. to a multiswitch system, in order to supply the signal to more than 4 satellite receivers.



The complete Outdoor installation kit with the new FIRS LNB and the standard cable exactly 1.5 meters in length with „N" connectors on both ends to provide an optimal connection between the F-IRS LNB and the F-IRS ODU32. Longer cable lengths are not recommended since the signal attenuation in the upper frequency ranges (up to 5.45 GHz) is much too high. Global Invacom has matched its system precisely to this specific cable.

Schematic diagram of Global Invacom's new system: in the top picture the satellite signal together with the terrestrial signal is distributed via 32+4 4way optical splitters and two 2way splitters to provide a total of 64 optical outputs. An F-IRS GTU converter box can be connected to each of these outputs allowing each end user to connect up to four satellite receivers and one DTT receiver. In this way a maximum of 256 satellite receivers and 64 DTT receivers can be supplied. If that's not enough, you would then split the converted satellite signal so that four distribution systems could be connected thereby allowing a total of 1024 satellite receivers and 256 DTT receivers to be put into service.

global invacom
completing the picture

GI-FIRSODU