# Televes

# informa

## Televes France

## Televes aspires to leadership in France.

After just over a decade of operation, Televes France is placed as one of the leaders of the sector.

The transition to Digital Terrestrial Television (DTT) and the analogue switch-off has lead Televes France to strengthen its position in the market, and what is most important, with a different strategy to the competitors, based on value added and High-Tech products, (designed and produced in Europe), on quality, functionality and innovation.

Following the Televes Group's philosophy, Televes France's growth is characterized by its wide range of products - developed to provide solutions to the professionals -, its efficient logistics, its fast and professional technical support and its personalized training. Through this support, the professionals develop Integral Solutions and get the best performance of the DAT HD BOSS antenna, the AVANT 3 and AVANT HD programmable amplifiers, the H45 meters or the T05 and T0X headends. Products that represent the Televes brand and are recognized by most of the professionals in the industry.

Televes France's business strategy, based on the advantages provided by our products



Juan Virel Managing Director of Televes France

and the associated services, rather than an aggressive pricing policy, has considerably increased its market share and its turnover, which provides an important security for all its partners, strengthening the Televes Group as one of the global leaders in this sector.



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## **Product News**

## Pro Easy-F connectors

The evolution of the mobile network technology of 4th generation is known as LTE (Long Term Evolution).

The implementation of this technology is characterized by:

- Spectrum flexibility through flexible bandwidth.
- OFDM modulation.
- Multi-antenna-technology and use of "intelligent antennas".
- Use of UHF high frequencies (channels 61-69).

All over the European Union countries, the use of the sub-band between channels 61 to 69 has to be reassigned before January 1, 2015.

The optimization of the SMATV networks in the high UHF frequencies will involve effects that 4G signals may cause to the MATV equipments and networks.

The shielding of electronic devices and the screening of coaxial cable will be essential to safeguard the quality parameters of the television signal.

One of the weakest points of the installation is the lead between the outlet and the TV set or receiver. Being a domestic item, usually supplied by the TV/receiver manufacturer, it usually escapes testings and certifications of the installation quality. However, future portable and home devices as well as service distribution networks, will use that band and will therefore be an important source of interferences in television systems.

One of the extender elements is the connector. The screening of the PRO EASY F connectors exceeds the Class A requirements for all frequencies.

But the screening of an extender is not directly related to the individual screening of the elements that compose it; in other words, the overall screening is not the sum of screenings.

The use of screened cables and connectors doesn't guarantee that the resulting lead has the equivalent screening. The connector assembly operation has its influence. Hence the use of a so user-friendly connector, such as the PRO EASY F, provides a higher reliability than leads made with any other connector of



Jagged rows ensure perfect cable outer sheath clamping

harder assembly and installation. And obviously, its lead will be much better than any other common extender.

The differential values of screening between a conventional lead and one made with T100 cable and PRO EASY F connectors can reach 42dB. This difference would avoid the possible LTE interference.

The Televes' PRO EASY F connector guarantees the maximum quality when connecting equipments and systems, providing SHIELDING to the digital signals in the installation. Its screening effectivity exceeds the CLASS A requirements in all band.

The coaxial cable connection becomes a fast and easy operation: not having different pieces makes it ideal when cables are in locations where manipulation of devices is difficult. Only two movements and a perfect connection will be made.

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Ref. 413201	PRO EASY-F IEC male connector 9,5mm	
Ref. 413301	PRO EASY-F IEC elbowed female connector 9,5mm	
Ref. 413401	PRO EASY-F quick F elbowed connector	
Ref. 413301 Ref. 413401	PRO EASY-F IEC elbowed female connector 9,5mm PRO EASY-F quick F elbowed connector	

## FAQ

"Full HD" and "HD Ready" televisions vs High Definition DTT

Lately, television sets have been changed with the arrival of the DTT. In most of these televisions you can see logos related to HD (HD ready, HD ready 1080p, Full HD, ...), that refer to the screen resolution necessary to reproduce High Definition contents.

However, this does not necessarily imply that such TVs are ready to receive HD DTT. For this, you need a screen with the required resolution, but the TV set also has to be equipped with a MPEG-4 tuner.

The inclusion of a DTT tuner capable to receive MPEG-4 contents is not common; that's why many users that have purchased televisions with built-in DTT receiver and with logos related to HD will need an external tuner to receive HD DTT.





## Your pictures



Due to any unknown reason, the LNB's seem to be the elements that cause most tenderness - otherwise we cannot understand that someone is willing to protect them from rain.

This image, perhaps more forced than real, shows that someone had the courage and patience to offer an umbrella to an LNB, a gesture that contrasts with the stoic resignation of the dish under the rain and that is for sure as useless as picturesque.

As mentioned in a previous Informa, where we showed one of these devices carefully bagged, the LNB's have to be ready for outdoor conditions... as long as the connector's sleeve is correctly installed.

All Televes' LNBs are "Weatherproof"



## Real Installations

#### **Horizontal Fibre Optic Distribution in Auxerre**

ETS Morriset is a telecommunications installation company that has made its first satellite signal distribution via fibre optics.

In a luxury multi-dwelling unit of Auxerre, the distribution of three complete satellites (Astra 19°, Eutelsat 13° and Turksat) is performed using the range of Televes' optical LNBs.

Each one of these LNBs deliver an optical output where all bands and polarities of a satellite are stacked. At the other end of the fibre, the MDU modules recover the original signal and deliver it to a multiswitch for its distribution in apartment blocks.





In this particular installation, the terrestrial signal is distributed in RF through an AVANT HD programmable amplifier.

Dominique Morriset mentions the ease of managing 3 fibre optic cables compared to 12 coaxial cables of  $\frac{1}{2}$  inch that would had been required to perform the satellite distribution, which not only simplifies the work, but also saves installation time.

## Measurement of optical attenuation without a specific light generator

Ideas

Sometimes the installer does not have the necessary tools to do a certain measurement. The same way you could use a broadband amplifier without input signal as an all-band noise source to be able to obtain the frequency response of a network, in optical networks an optical transmitter could be used as a light source for the measurement of optical attenuation.



Obviously it would be a stopgap because the transmitter only transmits in one of the windows (1310nm) and we recommend you to make this measurement in the different windows.

The optical transmitters generate a determined optical power which is almost the same with or without an RF input. Being an amplitude modulation, in which the "carrier" is the light, the signal power is hardly influenced by the "modulation signal".

The +3dBm delivered by an optical transmitter of Televes (ref. 8674) can be used as a reference value in the H45 meter equipped with optical interface.

Through the menu shown in the figure, you would choose the option "set ref.." Once is done, the optical signal measurement will be made in dB relative to the referenced power.

CONFIG. RE/OPTICA	RF/OPTICAL CONFIG.	
ESTABLECER REF.	Input Signal ORF	Opt. Ref. Level
	© Optical	< 2000m
	Lambda	Optical Units
	⊚1310 nm	⊖dBm
	<b>01490 nm</b>	om₩, µ₩
	<b>○1550 nm</b>	⊚ dB
	Select Input Signal	





## The value of Noise Figure in LNBs: interpretation.

Traditionally the quality of a LNB has been determined by the noise figure (NF). Currently, the values indicated in most of the technical specs are driven more by marketing criteria than real performance. The problem is that the installer can't probe the accuracy of the specs that he is given and becomes a "victim" in this war to achieve the lowest NF that re-sellers and importers of these products have started.

The truth is that the quality of the satellite signals obtained at the output of a LNB, are determined by the C/N (carrier to noise) more than what they are by the NF. If we consider the satellite HD multiplexes that use the DVB-S2 standard, the phase noise is an even more important parameter than the NF.



The quality of a DVB-S2/HD reception system is, obviously, reflected in the quality of the signal received and therefore can be measured with the common parameters that measure the quality of these type of signals: C/N, MER (Modulation Error Ratio), LKM (Link Margin) and CBER (Convolutional Bit Error Rate).

## NF, C/N and H45. The importance of the measurement.

As it was mentioned in the paragraph above, the installer can't measure the NF of a LNB. But he can **measure parameters like: C/N, MER, LKM and CBER.** The value of an extremely low noise figure doesn't matter if, in practice, the measure taken from the parameters of the sensor set are worse.

In the graphic below we can see the response of two different LNBs. The red trace corresponds with a Televes 7475 0.5dB NF and the green trace is from a LNB of a competitor publishing a NF of 0.2dB.

At first sight we could evaluate the quality based on the signal levels for each of the traces and think that since the green is given higher levels it should be a better LNB. But we should look at the gaps without multiplexes in the graph, because it is only there where we can appreciate the noise levels. The reality that this graphic is pointing out is that yes the LNB of our competitors has a higher gain but the C/N, that is what it is really important, is 3dB lower.



In terms of system efficiency, the difference in the performance of the two LNBs will be higher than the difference that you will get when using an 80cm dish instead of a 1.10m dish. In other words, an 80cm dish using a Televes' LNB 7475 will give a better overall performance than a 1.1m dish with one of our competitors LNBs. Even without using graphics like the one above, simply by measuring the C/N by means of the H45 Televes meter it would be enough to demonstrate the non-sense of evaluating the quality of the LNB based on the NF (0.2dB) parameter only.

## The phase noise

In those LNBs that are going to be used to receive DVB-S2/HD services the phase noise is an even more important parameter than the NF; something that is completely ignored by those ones that assume a direct relation between quality and NF.

The DVB-S2 standard uses most commonly an 8-PSK (Phase Shift Keying) modulation. This modulation uses 8 symbols to transmit the information, as opposed to QPSK, modulation most commonly used to transmit SD (Standard Definition) services, that uses only 4. This difference makes the possibility of having interference between symbols in an 8-PSK modulation more likely than in a QSPK. So the "purity" of the local oscillator of the LNB is a key parameter to avoid this source of interference that could generate breakage of the picture. The parameter that measures the "purity" of the signals given by the local oscillator (LO) is the phase noise. Televes' LNBs have a phase noise higher than 75dBc@10KHz that is what Astra specifies for satellite digital services. The graph below shows how the phase noise is measured by our quality control department. This is one of the several parameters that we measure when approving a LNB.



#### **Polarity discrimination**

As it is known, in general, but particularly in the installation of DTT-SAT systems, the adjustment of the LNB skew is critical. For this reason it is convenient to have a LNB with a high value of polarities discrimination, taking care anyway of adjusting carefully this parameter.

#### Conclusions

- The NF is a parameter that has been intentionally overrated by some without very little technical basis. In the meantime, other parameters that are important for the quality of the LNB are been ignored.

- The quality obtained from a SAT reception system doesn't depend exclusively on the NF and, as it has been explained, with **DVB-S2/HD signals the phase noise is even more important.** 

- The **H45 is a key tool** for a modern and trained installer (there is no other way of evaluating the quality of the system without a proper spectrum anlayzer).

- Televes considers **training as a key factor** over information only. To understand the information is even more important than the information itself and hence the reason why we won't participate in a battle to publish the lowest NF value and instead will train our customers.

- We have to keep in mind that **the quality of the system has to be** evaluated as a whole, measuring several parameters. The specs from a technical sheet or the measurement of one parameter do not determine the quality of a system. CMP0600114