

# Televes®

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10-12 September **Hotel & Hospitality Expo**  
Riyadh (Saudi Arabia)



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## First company to register a colour trademark in Spain

Since our beginnings, we have left a distinctive mark in the skies of Spain and in over 100 countries around the world with our orange antennas and dishes. This identity colour has become a powerful advertising tool that the market links unequivocally with the Televes brand.

Being a market leader involves additional challenges, such as the constant protection of brand identity and all industrial property associated with innovation. It is no secret that some companies have seen the opportunity of taking advantage of the effort of Televes and try to copy our products, or launch others with the same colour, seeking to benefit from the valued and mature brand image we have built.

Our Innovation and Industrial Property Management department leads an arduous and ongoing process of defending our identity in the market. We combat counterfeits and copies in any market where attempts have been made to exploit the image and reputation of our brand. As a result of these efforts, **the Spanish Patent and Trademark Office recognised for the first time in Spain the distinctiveness of a colour for a specific product or service**, granting Televes registration title No. 4,025,913 of the Colour Trademark in Class 9 for "terrestrial radio and television antennas", granting the exclusive right to use it in Spanish territory.

This way, **the use of the colour orange in radio and television antennas is reserved exclusively for Televes**, preventing any competing company from marketing products with this colour without our consent.

This milestone marks a precedent in industrial property in Spain, where colour has been recognised as a distinctive element of a trademark. At Televes, we have taken a further step to secure the legacy of our visual identity in the market, protecting our investment effort in innovation and consolidating our position as a leader in the terrestrial radio and television antenna industry.

The registration of this colour trademark reinforces our image as a pioneer in cutting-edge technology and manufacturing. **Professionals unmistakably identify Televes antennas by their characteristic orange colour**, generating confidence in the quality and reliability of our products.

The registration of the colour trademark is an important milestone for the Televes brand and for the technology industry in Spain. This achievement highlights the importance of industrial property and brand identity protection in a highly competitive market. At Televes, we will continue to make every effort to lead the way in innovation, with a constant commitment to excellence and quality ■

*Terrestrial radio and television antennas may only be orange if they are made by Televes*



### Jesús Ricart Antenna Development Engineer

Televes has an established reputation as a leading antenna designer and manufacturer. What is less well known is that these antennas transcend the DTT or satellite TV broadcast environment and are starting to move into 5G or unmanned aerial vehicle (UAV) broadcast environments. We sat down with the person responsible for our antenna designs to find out more about what they do and their experience.

#### ***What is your job at Televes?***

I'm involved in the design and technological development of Televes antennas, from product conception to market launch.

There are projects related to antenna development and I coordinate the activity of the group of engineers who manage them. I am also very involved in any activity of the corporation's companies, such as Maxwell, in everything that is linked to antennas.

#### ***How long have you been part of the company? What has your career been like?***

I started with a scholarship in 1999. I then joined the antenna department where I have



*In recent years, we have been involved in UAV projects, 5G antennas and MIMO technologies applied to television reception*

been ever since. Since 2020, I have been responsible for antenna projects for Televes and other companies in the corporation.

#### ***What is the most satisfying part of your job?***

Always doing new and different things. In recent years, we have been involved in UAV projects, 5G antennas, MIMO technologies applied to television reception, etc. This variety allows you to acquire new knowledge and avoids falling into a routine.

#### ***And the hardest thing?***

Adapting the entire range of active antennas to RED regulations has been complicated. It involved a considerable effort to implement a regulation that was somewhat ambiguous at the outset. On the other hand, it is frustrating to see how illegal copies of our antennas, or inferior imported products that don't comply with standards, appear on the market.

#### ***What do you see as the key values of the company?***

The constant search for new market niches by using our technological know-how. In recent years, we have seen how many companies in the industry have closed and Televes has been able to diversify without losing its essence ■



Televes Corporation®



**TRedess**

### TREDESS CELEBRATES 20 YEARS IN THE BROADCAST INDUSTRY

In 2003, TRedess was created to **meet the demand for low power digital microtransposers** in the Spanish market during the transition from analogue to digital television. Two decades later, TRedess has evolved to become a global benchmark in the Broadcast industry. The road to success has been made possible by a firm commitment to in-house development and manufacturing, expanding the portfolio of solutions. Today, TRedess has **over 25,000 transmitters** in more than 50 countries with supplies of **up to 5KW** and partnerships with major network operators and broadcasters internationally. The success of partnerships with national operators such as Retegal, CLM, Retevisión (now Cellnex) led to the big international leap, with the collaboration with TDF during the analogue switch-off in France, with TRedess today as its main partner for TV and DAB+ transmitters up to 2.4KW.

A turning point came in 2015 when TRedess evolved its developments beyond low power and gap fillers to become **players in medium and high power**. Thus, TRedess has positioned itself as one of the most relevant players in medium and high power up to 5KW in the global broadcast market, taking part in many deployments and renovations of **DTT networks in countries such as Sweden, Poland, Italy, Greece, Singapore, Thailand, Vietnam and Morocco**, etc.

With a team of over 50 employees today, the company has gained international recognition, with a future perspective with exciting challenges, such as penetrating African and Latin American markets. TRedess is committed to the development of new technologies for broadcasting mass TV and Radio signals, facing the coming technological changes as new opportunities.

Now, with 20 years of success and growth under its belt, TRedess is ready to take on any challenge on the horizon ■



## Transmodulator from satellite signals (DVB-S/S2) to terrestrial signals (COFDM/QAM)

### Very easy configuration via web interface

Our T.OX series of modular headends, designed and manufactured 100% at Televes, continues to evolve, now with a new transmodulator for satellite to terrestrial signals. Among its functionalities, two new features stand out:

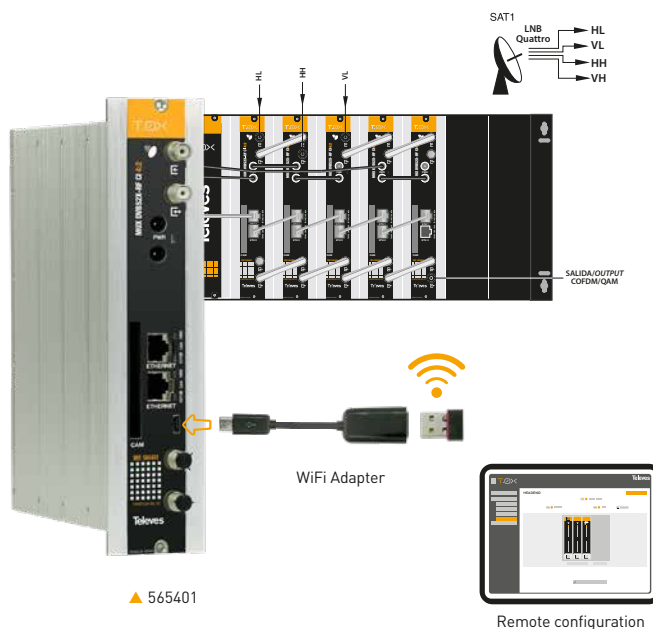
■ **The choice of modulation in which the 2 output multiplexes are generated.** This way, terrestrial signals in the **DVB-T** (with COFDM modulation) or **DVB-C** (with QAM modulation - Annex A) standards can be obtained under a single module. This advantage provides flexibility and simplifies modular headends, as there is no need for a specific module for each of the standards.

■ **Multiplexing of services present on up to 4 transponders,** available on **2** different **satellites** connected to their fully independent inputs. The inputs can also be configured in loop mode, so that the transponders are extracted from a single satellite.

The transmodulator also includes a **CI interface** for the insertion of a specific CAM, if you want to decrypt paid services for open viewing. As for assembly, it shares all the advantages of the T.OX format, a **fast, compact, reliable and environmentally friendly book installation** system. In fact, it enables the combination under one headend with other very different T.OX modules, such as IP encoders for the distribution of previously obtained services over an Ethernet network.

This transmodulator is very easy to configure thanks to its **intuitive embedded web interface**. Connection to the module for interface access can be done locally using an Ethernet cable or a WiFi network\*.

The multiple setting options the interface offers include: output modulation selection (COFDM or QAM), the possibility of configuring the complete headend from a single master module, the cloning of configurations to replicate them in other installations, and the display of headend control indicators ■



\* For WiFi connection, the WiFi adapter (Ref. 216802) is required



### IDEA

## How to tell if the screening attenuation film of a coaxial cable has copper in it

The screening attenuation film is, together with the braid, the most important element in the shielding of a coaxial cable. It is key that the film is metallic to avoid interference and to ensure effective shielding. Since copper is a better conductor than aluminium, it provides better screening attenuation, better shielding. The colour of this metal is golden orange. There are pigments that provide this type of colour to non-copper films, but as they are not made of metal, they don't provide any improvement in attenuation or screening attenuation. **They only create the illusion of having a copper film, when they actually don't.**

It's important to check whether the golden colour is copper or just an added pigment. We offer two simple ideas for this:

- 1) **Checking the conductivity with a multimeter:** in case of a plastic with pigments and dyes there will be (almost) no conductivity.
- 2) **Lightly burning the film with a lighter:** if it loses its golden colour and turns silver, it is an aluminium film with a dye ■



Copper-plated film, after burning



Copper-free film (with pigment), after burning



## When programming a SmartKom, what are the advantages of using ASuite over automatic programming?

In previous articles, we discussed the advantages of SmartKom for processing channels coming from one or more antennas, especially if they are smart antennas. SmartKom's individual digital channel processing (filtering and amplification) achieves a perfect balancing of all signals, either using automatic adjustment or the ASuite app.

**Does this mean that both ways of programming the SmartKom are the same? The answer is no.**

Automatic programming is very fast and convenient, but using the ASuite provides the installer the following additional advantages:

- **Output level adjustment.** The 85 dBµV provided automatically by the SmartKom can be reduced, avoiding saturation in cases where it is excessive for TV tuners.
- **Search check and removal of duplicate channels.** The lower threshold of 40 dBµV of the SmartKom combined with the high sensitivity of a smart antenna may result in some cases in the same services being received on different channels. ASuite enables the elimination of these lower



level repeated channels, which can be considered spurious.

- **Fine tuning of received channels.** Can increase the level of the high channels and compensate for the higher losses of the distribution network at high frequencies.

Finally, the ASuite offers other **options aimed at making it easier for the installer to perform the tasks** that are usually undertaken in a multiplicity of installations with very similar reception conditions. For example: reading and uploading configurations, importing and exporting configurations, and even **displaying your installations on Google Maps** ■



## TELEVES FACILITIES

### DOM LUÍS I BRIDGE

(DOURO RIVER, PORTO AND VILA NOVA DE GAIA - PORTUGAL)



Televés illuminates the Luís I bridge, symbol of the city of Porto and privileged enclave to enjoy the best views of the Douro River.

A symbol of the Portuguese city and the work of engineer Théophile Seyrig, it is the most important and best known of the five bridges linking the two banks of the river. Televés has renewed the lighting of the lower deck of the bridge, which is not only one of the most emblematic places in the city, but also one of the most visited

thanks to the impressive panoramic views it offers of the banks of the Douro River.

With the maintenance work undertaken on the lower deck, the existing lighting has been replaced by Villa LED lights, manufactured in our factories in Santiago de Compostela (Galicia) and Maia (Portugal), achieving a consumption saving of almost 60% and a useful life of 100,000 hours, ideal for this to remain one of the most photographed places in the city of Porto ■



### AÚNA PARTNERS DAY

(CORNELLÀ - EL PRAT, CATALONIA)

15 JUNE

Our colleagues Hugo Botas and Juan Carlos Rey attended our booth 101 in Tribuna, (in the RCDE Stadium) where the SmartKom intelligent amplifier, the sustainable solutions of professional LED lighting with the CIES range and the racks and distribution accessories for data networks of DataCom were the main focus.



### HITEC HOSPITALITY

(TORONTO, CANADA)

26-29 JUNE

Our US subsidiary was present with a large booth to present our advanced solutions for hotel infrastructure and the hospitality industry in general.



### ENTORNO FENIE

(CASTELLÓ, SPAIN)

15-16 JUNE

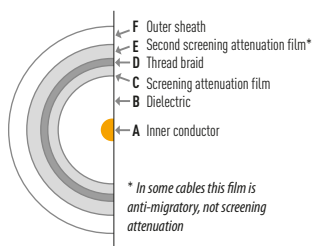
At this meeting point for the installation industry, we discussed the areas of TV Distribution, professional LED Lighting and DataCom, where our colleagues Jose Antonio Abadía and Santiago Cañizares advised on our products, especially our latest launch SmartKom, our CIES lights and the different options of racks ■



## Attenuation and shielding of a coaxial cable

### Which elements of the cable construction influence these two parameters?

A coaxial cable is defined by the type of construction and the materials used in its construction. The most in demand properties when choosing a quality cable are: **low attenuation and high shielding**. Let's look at the elements on which each depends:



#### ATTENUATION

It fundamentally depends on 2 elements:

- The diameter and material of the **inner conductor (A)**. The larger the diameter, the lower the attenuation, and the better the conductor material, the lower the attenuation (in the case of ICT, it has to be copper).
- The diameter and material of the **dielectric (B)**. The larger the diameter, the lower the attenuation, and the material will generate less attenuation if it has a high impedance and low dielectric constant.

It is important to note that **shielding does not directly influence attenuation**, which sometimes leads to confusion.

#### SHIELDING (SCREENING ATTENUATION) AND TRANSFER IMPEDANCE

For a cable to be considered shielded or with attenuated screening, it has to consist of an inner conductor (A) and an outer conductor, separated by a dielectric (electrical insulator). It is the dielectric (B) that generates the Faraday cage effect, preventing noise coupling and other interference. This outer conductor is often a composition of several conducting layers, consisting of the **braid (D)** and one or more **screening attenuation films (C and E)**. These films have the greatest effect on **shielding** depending on:

- **Material conductivity**. The better the conductor, the higher the shielding, ideally copper.
- The **number of screening attenuation films**. A cable with two screening attenuation films (trishield: film + braid + film) will shield more than a cable with one film (dualshield: film + braid).

The **braid (D)** has a lesser effect on screening attenuation, as its **type of conductive material** (ideally copper) is what contributes most to shielding. The coverage of the braid (which is proportional to the number of wires and crossovers between them) is often confused with the overall shielding of the cable. However, not only are these two parameters not the same thing, but no physical formula directly relates them, and a **higher mesh coverage does not always imply higher shielding of the cable**. As we have just seen, there are other components that have a greater influence, such as the

level of conductivity of the materials, and the screening attenuation films (the surface of which, unlike the braid, is uniform and solid).

**Transfer impedance**, often the great unknown, can be considered the equivalent of shielding, but at **low frequencies** (from 5 to 30MHz), and is precisely always the most restrictive of the two parameters. It depends primarily on the **sheet(s) of screening attenuation (C and E)**:

- **Thickness and material**. The thicker it is, the better the screening attenuation. The film, as well as being conductive, must be flexible so that it does not break when bent, which is why metal is combined with another material, typically polyester (PET). The better conductor the material is, the higher the shielding (ideally copper).
- **The position of the film**. By incorporating a non-conductive material face to improve flexibility, it is essential that the conductive metal face is in contact with the braid to act as an external conductor to improve shielding.

In some cables, an "anti-migratory" type film is incorporated, the function of which is to stop the migration of additives or moisture, absorbed by the outer sheath, into the cable. It also improves the stripping of the coax when connecting, as it protects the braid from detachment. However, this film is non-conductive and therefore has no effect on improving shielding or screening attenuation.

Finally, **cables are classified into classes** according to shielding effectiveness and transfer impedance, from class C (lowest) to A++ (highest screening attenuation).

EN50117	TRANSFER IMPEDANCE	SHIELDING ATTENUATION			
MHz	5 – 30	30 – 1000	1000 – 2000	2000 – 3000	
C Class	< 50 mΩ/m	> 75 dB	> 65 dB	> 55 dB	
B Class	< 15 mΩ/m	> 75 dB	> 65 dB	> 55 dB	
A Class	< 5.0 mΩ/m	> 85 dB	> 75 dB	> 65 dB	
A+ Class	< 2.5 mΩ/m	> 95 dB	> 85 dB	> 75 dB	
A++ Class	< 0.9 mΩ/m	> 105 dB	> 95 dB	> 85 dB	

In order to guarantee a minimum quality of TV service, **ICT requires that the coaxial cable complies with one of these classes**, in both shielding and transfer impedance. However, it does not define any requirements for the braid coverage, as high screening attenuation can be achieved with other more relevant parameters, such as the films and their materials ■

### Don't miss it!

#### Our digital product catalogue has been certified by ETIM International



Under the BMECat information transmission format and with ETIM as the product classification standard, our digital catalogue provides our customers with our product contents and data. Furthermore, obtaining the official ETIM International certification **certifies that it strictly complies with the requirements of the standard, and can be successfully integrated into digital platforms and databases that comply with the standard**.

The certification extends to a variety of bilingual catalogues, which always include **English**, and a second language such as **Spanish, Portuguese, Italian, German and Polish**. They transmit digitalised

information for all products in the TV Distribution, Hospitality and DataCom ranges, for example:

- Descriptions and highlights
- ETIM technical characterisation
- Physical data (weights, dimensions) and logistical information (packaging)
- Rates and discount groups
- Links to enriched content, such as a web page, images and videos
- Links to additional documentation such as instruction manuals, data sheets and declarations of conformity ■

# SmartKom

Filters, mixes, amplifies and balances  
**at the touch of a button**

R E A D J U S T      A U T O S C A N



Intelligent mast amplifier that combine the functions  
of a TV installation, by filtering, mixing, amplifying and balancing the DTT signal  
**with just pressing a button.**

DESIGNED FOR TV DISTRIBUTION IN FAMILY HOUSES



All in one



Automatic  
adjustment



High channel  
selectivity



Rejection of 4G/5G  
signals



Configuration  
with ASuite



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