

# INF Televes®

BIMONTHLY NEWSLETTER • NO.13 - AUGUST 2012

## TECHNOLOGICAL INNOVATION CAN BE MEASURED



In the period ranging from 2000 to mid 2012, Televes presented a total of forty and nineteen patent applications for utility models. This objective fact confirms the company as the one of greater innovative capacity in the sector.

Those patents include inventions in antennas, image transmission, broadcasting, digital data transmission, telephone communications, printed circuits, amplification control and tuning of resonant circuits.

The company's innovative activity remained constant over the last twelve years.

62% of applications for patents and utility models were registered in Spain, while 18% was managed by the European Patent Office.

The company also submitted applications in Germany and Portugal.

## The R+D+i most powerful team of the sector

Televes capacity to be a leading player in the technological change of the world of television is directly related to its heavy investment in Research and Technological Development.

The department of R+D+i, created in 1971, consists of more than 60 professionals, engineers mainly from both fields Telecommunication and Industrial. This human capital gives to Televes an extraordinary technological independence, reflected in an exceptional figure: 80% out of 1500 products that integrate the company catalog have been developed entirely with proprietary technology.

In total, the number of valid patents all over the world which are owned by the company exceeds fifty.

In 2011, the company's investment in R & D exceeded 8 millions EUR ■

*Data Source: Report of technological intelligence, Clarke, Modet & Cº, 29 May 2012*

## AND BESIDES ...



What is the difference between a coaxial cable with its inner core of copper and another made of copper-clad steel?

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### IDEAS

A Field Strength Meter in my own iPad

### REAL INSTALLATIONS

AYA Hotel in Palma de Mallorca

### NEW PRODUCT

T.12, amplifier immune to LTE

Tel. +34 902 686 400

Fax. +34 981 522 262

televes@televes.com

www.televes.com

 **televescorporation**

## MEETING POINT

### Visit us at:

**September**  
15-18 Futura- Salzburgo



## TELEVES AT ANGACABLE (COLOGNE-GERMANY)



### Televes' highlights in the international edition of ANGACable.

More than 16 000 professionals and 440 firms from 33 countries gathered at ANGACable between 4 and 6 June. In one of the international editions of this landmark event in Germany, Televes launched a strong message about their ability to develop technological product and add value to the professional. The new H60 meter with digital processing on the one hand, and the distribution of 3DTV services on DVB-C2 through TOX headends on the other hand, caused great impact on the visitors to our 'stand', which was erected on the area of major European Manufacturers. Professionals praised the solutions developed by Televes to tackle the new scenario that involves the deployment of LTE.

## TELEVES AT BROADCAST ASIA (SINGAPUR)



The Broadcast Asia exhibition and conference was held in Singapore between 19 and 22 June and counted with a strong international participation, as is usual in this competition.

At its booth, which stood in the pavilion of companies from Spain, Televes also presented its complete range of head-end stations and distribution amplifiers as well as RF solutions for operators, with the latest advances in transmitters and gap-fillers ■



## FAQ

### What is the difference between a coaxial cable with its inner core of copper and another made of copper-clad steel?

*Because of the fact of coexisting coaxial networks belonging to cable operators as well as to local TV, in the same facility, the installer might think that the distribution material applies to any of them.*

#### EXPERT OPINION

While the elements that support an installation of SMATV (5-2150MHz) could be used in a CATV facility, upside down do not add up.

And with the coaxial cable it is the same: inner core made of copper-clad steel, typically used by cable operators, in general terms is not recommended for DTT distribution networks and SMATV.

The difference between a cable with its inner core made of **steel** or made of **copper**, results in a **remarkable difference in conductivity, strength** and, above all, its **resistance to corrosion**.

Effectively, at high frequencies, the outer layer of the copper-clad steel

performs as a copper conductor; nevertheless this conductivity is being lost when environmental conditions start to deteriorate the steel. The joints between devices are sensitive to these circumstances, precisely where the impedance matching is more critical, and from which depends largely, the quality of the digital signal to be distributed.

Conclusion: Although the legislation allows the use of copper-clad steel in operator networks, the copper is ideal for SMATV networks and, ultimately, to all those networks wanting to keep unchanged its characteristics ■

Javier Esteban  
Technical Assistance Manager



## ALWAYS UP-TO-DATE

### HSuite V1.30, new upgrading



A complement to the range of meters are the computer applications that facilitate the handling of the meter and give it added value.

#### The innovations presented by the HSuite are:

- ✓ Connection with the new H60
- ✓ Display graphs of H60 as on its own screen
- ✓ Download measures CTB, CSO and HUM
- ✓ Download measures TILT and RF attenuation
- ✓ Measuring profiles in CTB, CSO and HUM
- ✓ Incorporation of SCR values for Italian and German markets ■



More information on  
[televes.com>servicios>descargas](http://televes.com>servicios>descargas)

## YOUR PICTURES



### Until it clears up ...

Televes has always stood for the care and attention provided to the installer. Evidence of this is this picture taken at the recent convention Fenitel in Vigo, sponsored by Televes. It can be seen as installers walk protected from the rain with promotional Televes' umbrellas.



## Talking about ...

**Ladetel**, Ladetel, Laboratory of Certification of Televes Corporation

### Interview with:

**Eduardo Castro, director of Ladetel**

Eduardo Castro, as the person responsible of the Laboratory of Certification of Televes Corporation, ensures compliance of every market for the products launched by the companies of the Group. But the laboratory goes far beyond, subjecting the products to demanding tests to ensure the highest quality and a useful lifecycle superior to the competition.

#### **What role does Ladetel play inside of Televes Corporation?**

From the product design stage, Ladetel provides the knowledge, judgment and legal and regulatory requirements for the product to be marketed. During the different stages of industrialization, Ladetel is responsible for carrying out tests and experiments to ensure compliance with regulations.

#### **What have been the most important milestones in terms of management and certification?**

Undoubtedly the most important milestone was the product CE marking without having to resort to external laboratories. It must be noted that the CE compliance involves two European directives, the Electrical Safety and Electromagnetic Compatibility.

#### **What kind of services are offered to external customers?**

The tests we offer to external customers are the same we offer to the group companies. Moreover, in certain cases we can rent the measuring equipment or even make tests in customer facilities, especially if they already have trained staff.

#### **Under what quality standards does Televes Corporation work?**

We pursue the quality standard management ISO9001. In the medium-term plans the implementation of ISO17025, exclusive for testing laboratories, is contemplated.

#### **How important are certifications to guarantee product quality?**

Certification tests detect possible disturbances that the product can cause on other equipments (emissions) as well as possible shocks received by nearby equipments (immunity). When a critical point is detected during electromagnetic compatibility (EMC) testings, sooner or later problems will appear during operation in its final installation.



To ensure to the highest a proper long-term operation of the product we focus also on resistance, vibration, UV exposure for plastics, corrosion cycles testings, etc.

#### **In terms of quality, at what level are Televes Corporation products in the international context?**

The complete product range of Televes is subjected to the most rigorous testings, even above regulatory requirements. To give an example, equipments that must have a resistance of 2000 V, in Ladetel we test them to 6000 V; and equipments that according to regulations require withstanding 4000 V of electrostatic discharge are tested to 10,000 V.

#### **What are the major plans of Ladetel for the future?**

In the short and medium term, the international projection of our laboratory. We are in a good training provision to undertake the most demanding certifications as UL and TÜV markings.

In the long term, the ENAC accreditation by implementing ISO17025 ■

Sergio Martín  
Communications Manager



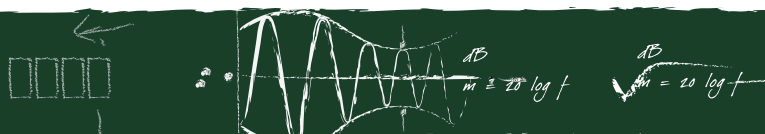
**DID YOU  
KNOW...?**

**... that in 1972 Televes produced  
baggage racks ?**

At the very beginning, Televes was focused on the production of metal structures. One of these structures were the antennas associated afterwards with the electronic devices that we produce nowadays. The other one where the baggage racks, commonly referred to as *roof racks*.

On the user manual of that period, the following text draws attention: "... nothing more than a coin to fix it strongly to the car". That is a visible proof of how Televes already manufactured thinking on the user with an excellent baggage rack ■





## RF attenuation measurement with a Meter H60

The measurement of attenuation in RF networks requires the availability of an item that generates the RF signal throughout the operating band. Meter and Generator must be calibrated together in order to give accuracy to the final result of the test.

The ICT-2 spanish legislation requires the measurement and recording of attenuations in CATV networks, as well as signal levels, C/N ratio and BER for signals of MATV/SMATV, in all outlets of the facility.

For MATV/SMATV the measure is "direct", whereas for CATV it is necessary to perform an external calibration. To do this it must be recorded firstly the signal level at the output of the noise generator (Ref 5930), frequencies to be measured and, subsequently, recording the signal levels in the outlets at those same frequencies. Upon completion of the exportation of the measured values to the PC, it can calculate the difference between the two signal levels thus obtaining the value of attenuation.

With the new meter H60 **the whole process of attenuation measurement is simplified**, significantly reducing the time spent on it and the probability of a human error.

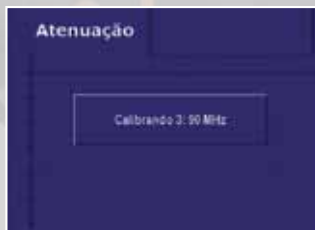
For direct measurement of attenuations, set frequencies to be measured and calibrate the noise generator automatically with the Meter H60. Then, attenuation measures are shown immediately on the Meter. This process is faster, easier, and allows to confirm "in situ" if attenuation measurements are consistent with the desired values or, which is the same,

according to the project. he number of frequencies that can be configured ranges from five to ten; all of them displayed in the screen of the Meter. It is possible to define typical ranges like 5MHz, 862MHz, 950MHz and 2150MHz. This functionality can have many applications: from measuring the attenuation of a roll or a piece of coaxial cable, up to obtain the response of a tap, splitter, ... etc.

It is possible to save multiple configurations of attenuation measuring in its memory to be used subsequently, being enough pressing a single key to keep stored the records of each outlet performed at different frequencies.



NOISE GENERATOR  
AUTOMATIC CALIBRATION



As usual, this function performed by the H60 meter has been inspired by the requirements of installers, and shows once again the ability of Televes in customizing the product to market needs ■

Helder Martins  
International Technical Assistance



## IDEAS

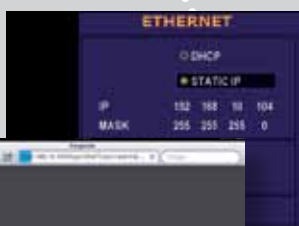


### A Field Strength Meter in my own iPad?

In today's world of smartphones and full connectivity, Field Strength Meters also have to keep up to the new trends.

**With the new H60 Televes Meter you can send your measurements, change channels and view its screen in real time by using your iPad.** Furthermore, measurements can be stored for days.

Doubtless the H60's remote management represents a breakthrough in the measuring field ■



## TELEVES FACILITIES

### AYA Hotel in Palma de Mallorca

INSNET, installer working in Palma de Mallorca, has carried out a deep reform on the headend of the AYA hotel, which is situated in Palma' Arenal beach, one of the preferred destination for German tourists.



The headend consists of 4 DTT processors and 9 DVB-S2/COFDM transmodulator; and distributes services that exceed forty five ones.

And, as we recommend in installations subject to the marine environments, also in this case the installer is making use of parabolic dishes from the QSD range.



CARRIED OUT BY:



## T.12: The single-channel amplifier immune to LTE.



The new scenario caused by the **relocation of the digital dividend** and the imminent arrival of LTE signals, has led to the emergence of a new concept of modular amplifier: the new range of single-channel amplification T.12.

Based on the experience of Televes, which in 1981 launched its first amplifier with Z mixing technique, the T.12 system that now is being offered brings together the advantages of an innovative new design based on state-of-the-art components that together with advanced robotic manufacturing and exceptional quality control, gives the highest possible reliability.

The result of all this is the new **most stable and reliable** single channel amplifier of the market.

Fully compatible with the previous model T03, T12 system maintains its simplicity and flexibility.

Its new shielding system and revolutionary manufacturing method, improves its electrical performance thus providing both unparalleled gain and output voltage.

The range that is placed on the market covers all installation needs, either in frequency response or in gain and output voltage.

Its switched-mode PSU gives energy efficiency and minimum consumption, plus the ability for powering up to twenty four amplifiers.

The T.12 is the single-channel amplifier for the digital dividend, immune to LTE ■

### REF. DESCRIPTION

508012	T.12 SAT IF Broadband Amplifier
508112	T.12 BI single channel amplifier
508212	T.12 FM channel amplifier
509912	T.12 DAB channel amplifier
508312	T.12 BIll single channel amplifier
508712	T.12 Low S single channel amplifier
508812	T.12 High S single channel amplifier
508912	T.12 Hyper single channel amplifier
509812	T.12 UHF selective single channel amplifier
508612	T.12 UHF multi channel amplifier
509512	T.12 UHF AGC selective single channel amplifier
509712	T.12 UHF AGC single channel amplifier
549812	T.12 switched-mode PSU

