INFO Televes®

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TELEVES TECHNOLOGICAL PROFILE WILL PLAY A LEADING ROLE AGAIN IN ANGACOM

Year after year, the international tradeshow ANGACOM, in German fairgrounds, ranks as a special event for Televes. An extraordinary opportunity to show the abilities of the company and to be close contact with customers and friends. The 2016 edition is no exception, but this time time the innovative profile of Televes will be specially reinforced with the presentation of two new surprises that are likely to have a major impact.

First, the new **DAT BOSS TForce** antenna for DTT. While in 2010 Televes marked a milestone in digital reception of TV signals with the launch of BOSS Tech, this time the jump is even greater in scale. The new antenna incorporates **TForce with MMIC** (*Monolithic Microwave Integrated Cirtuits*) components. his technology represents a quantum leap in miniaturization, and gives designers maximum freedom to define the technical specifications of the devices. Applied to the new antenna, it provides the largest dynamic range seen to date, ensuring that the quality of the output signal is optimum no matter how difficult the conditions of reception are.

The second surprise is the worldwide launch of the new field spectrum analyzer **MOSAIQ6**. t allows to simultaneously configure six real time screens. This development is fruit of the Televes commitment to this type of equipment, having been the first to incorporate digital processing in a portable meter in 2008.

As far as TV distribution, Televes will complete the range of successful T.0X headends with the presentation of **HEXA**, **compact transmodulators** that can allocate up to six satellite transponders into six independent QAM channels. The company will also announce new references for NevoSwitch multiswitches for potential scenarios that involving the transition from DBV-T to DVB-T2

DAT BOSS TFORCE CREATES A NEW TECHNOLOGICAL BENCHMARK. THE FIRST ANTENNA TO INCORPORATE MMIC COMPONENTS DESIGNED, MANUFACTURED AND MOUNTED BY TELEVES

AND ALSO...

¿Cómo puedo elegir la ONT correcta? Page 2

How to use a Coaxdata in a TVSAT individual installation Page 4

INFO Televes also available in: French, German, Italian, Polish, Portuguese and Spanish.

SUMMARY

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MEETING POINTS

Visit us at:

JUNE		
6-7	**ESSENTIAL INSTALL** Esher	UK
7-9	**ANGACOM** Cologne	Germany
JUNE-JULY		
31-3	**BROADCAST ASIA**	Singapure

Televes

IN THE WORLD

MedPi

(Monaco) 17-20 May

Televes presented CareLife, a comprehensive system that aims to enhance the quality of independent living for our elders dependants, improving their care, security and comfort at home.

NAB Show

(Las Vegas, USA) 18-21 April

Televes highlighted solutions for integrated TV and data services onto high-capacity networks with FibreData GPON architectures. In addition, the American market welcomed the range of encoders and modulators for T.0X with 8VSB transcoding, intelligent antennas for DTT and H60 and H30D3 field spectrum analyzers.

Evolving Connectivity (CAI)

(Birmingham, UK) 27 April

One of the main events in the UK market for the distribution of television services, it served as the perfect scenario for the presentation of Hospitality solutions to integrate TDT, satellite and IPTV, OTT and VOD, as well as Digital Signage services

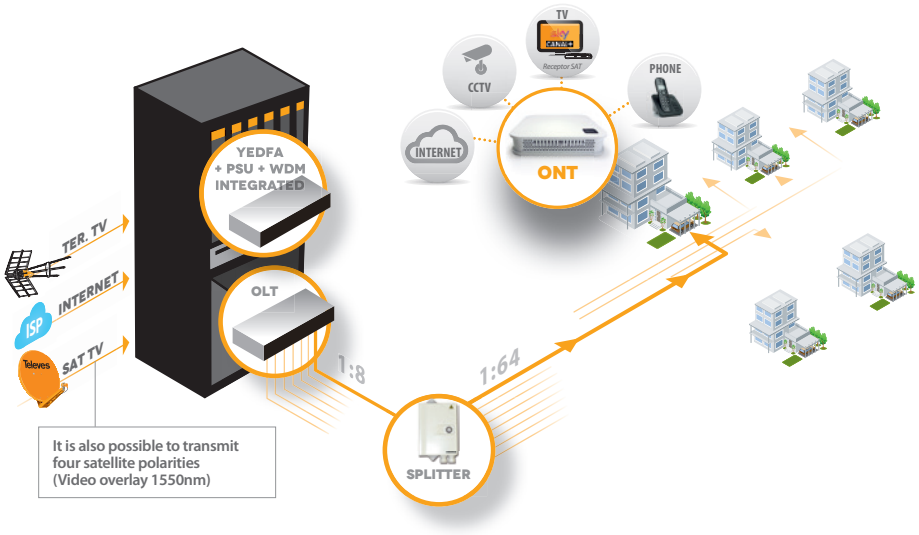
FAQs

How to choose the right ONT?

THE EXPERT SAYS

Televes introduces a full range of user terminals (ONT) to be selected according to the intended connection interface. The following table shows the different possibilities to choose from:

Ref.	Description							
					USB	F	Wi Fi b/g/n	Wi Fi ac
769507	ONU BASIC	1xGbE	1	0	0	0	0	0
769508	ONU STANDARD	1xGbE + RF	1	0	0	1	0	0
769501	ONT OFFICE	4xGbE + 2xFXS + 2xUSB + WLAN	4	2	2	0	1	0
769506	ONT OFFICE AC	4xGbE + 2xFXS + 2xUSB + WLAN ac	4	2	2	0	0	1
769502	ONT HOME	4xGbE + 2xFXS + 2xUSB + RF + WLAN	4	2	2	1	1	0
769504	ONT HOME AC	4xGbE + 2xFXS + 2xUSB + RF + WLAN ac	4	2	2	1	0	1



YOUR PICTURES

"Truss" structure with a tower

In Saltoki Pamplona, a way to employ a Televes tower section and its "L" stands in a "truss" structure was envisioned as a mean to sustain spotlights or other gadgets as exhibitors or other appliances

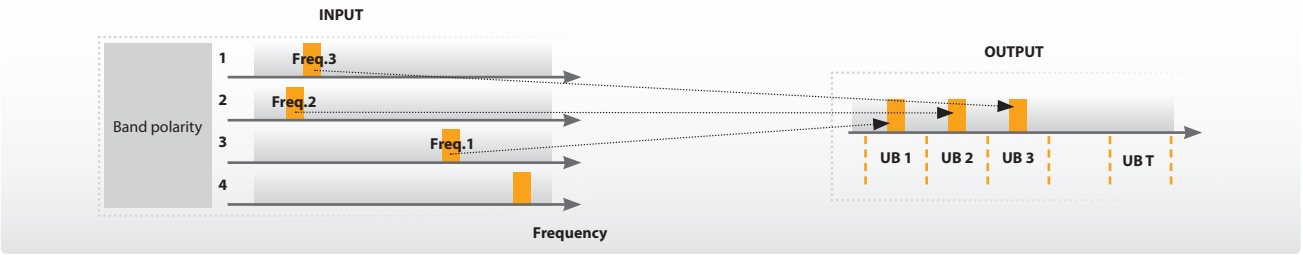
The future of multiswitches: the dCSS technology

A solution for transmitting all of your programmes in just one cable.

The dCSS (Digital Channel Stacking Switch) technology allows you to distribute four satellite polarities in just one coaxial cable and at the same time enabling every user to select the channels required. Televes launches two new multiswitches of the NevoSwitch range with this new technology integrated. As all of the Nevoswitch range, these new products are compact, cascadable and made of zamak.

The multiswitches have 5 inputs (1 terrestrial - 4 satellite) and 2 or 4 **dCSS outputs** which allows you to create up to **16 User Bands** per output.

Picture 1 shows how the dCSS works. A dCSS multiswitch includes a switch that would select the transponders from different bands and polarities (band polarity 1, 2, 3, 4), which are then filtered and converted to the corresponding output frequencies (UB or User Band).

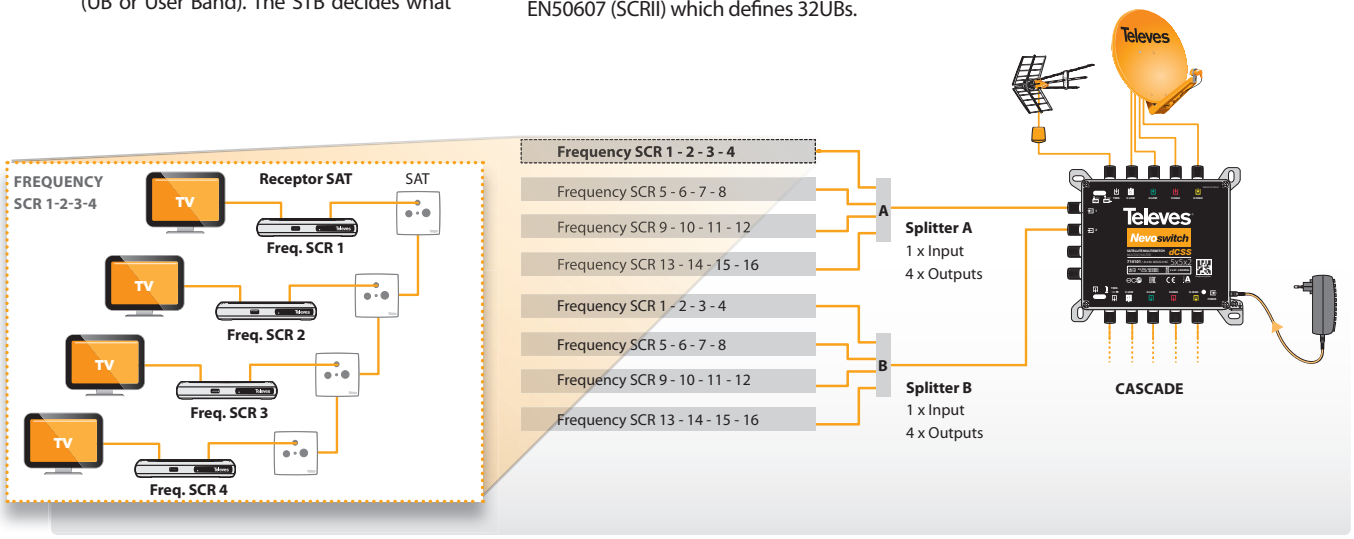


***Picture1**: dCSS works.*

There are two different ways of doing this selection (frequency mapping):

- **Static**: both input and output frequencies are fixed.
- **Dynamic**: the output frequencies are fixed and every frequency is allocated to an STB (UB or User Band). The STB decides what input frequency (Ku Band) is selected and converted into the users band. This selection is done through DisEqC commands, from the STB to the dCSS multiswitch. Nowadays there are two different protocols according to the standard EN50494 (SCRI) which defines the 8UBs and the EN50607 (SCRII) which defines 32UBs.

This is the mode implemented in the Televes dCSS multiswitch. With this new technology you can access any satellite programme independently to the rest of the users, with just one cable as per Picture 2



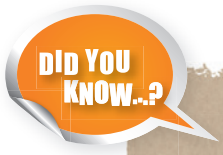
***Picture2**: Example of the dCSS multiswitch implementation.*

TELEVES FACILITIES

Dhammakaya Buddhist temple (Bankok - Thailand)

In the Dhammakaya Buddhist temple in Bangkok (Thailand) there is a Televes IPTV system installed, which distributes channels from the Thai-Com5 satellite through 8 transmodulators. It also has local channels processed through encoders.

More than 100 STB's were installed in the first phase and it is expected to carry out an extension of this installation. The system is currently providing service to more than 100,000 devotees



...Televes manufactured fiber optic equipment in 1985?

*Televes signed an agreement with Danish company **NKT** in February 1985 to manufacture and distribute their **DOCAT** (Digital Optical CATV Trunk Network) systems. Its design pioneered the combination of two distribution media for television services, over fiber optics and coaxial cables. It was a worlwide novelty and it marked a long tradition in Televes for developing technology for high capacity network solutions*

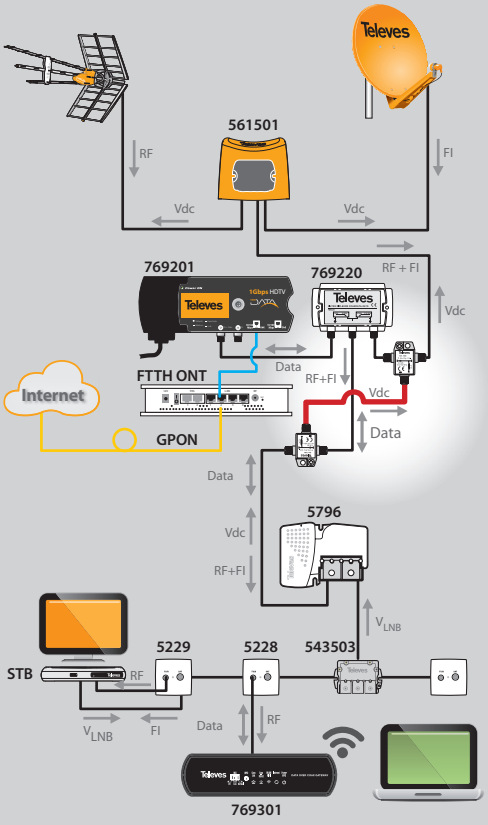
IDEAS

How to use a Coaxdata in a TVSAT individual installation

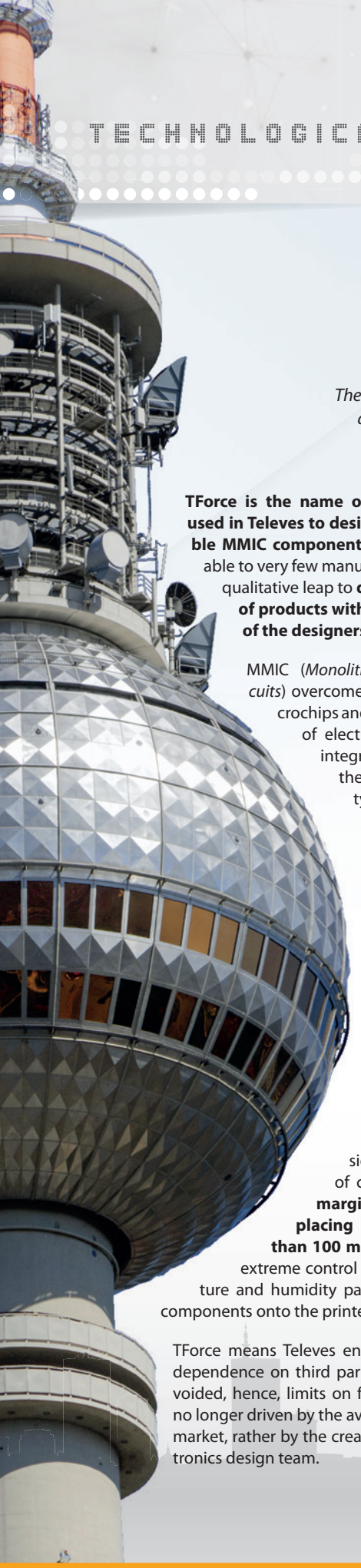
TVSAT individual installations need to manage the LNB through continued signals, 22kHz and DiSEqC protocol; these control signals can't be transmitted through CoaxData devices..

The solutions is to use two current injectors (ref.7450). One of them takes the direct current before the CoaxData and then the other one injects it after the CoaxData.

The picture shows an example of installation in which the injectors must be installed so that the control signals of the LNB could travel through the coaxial system with any interruption originated in the CoaxData



5796 (PSU)	STB OFF	Vdc= 12V @ 220mA
	STB ON	Vdc= V_{LNB}



TForce, the start of a new era

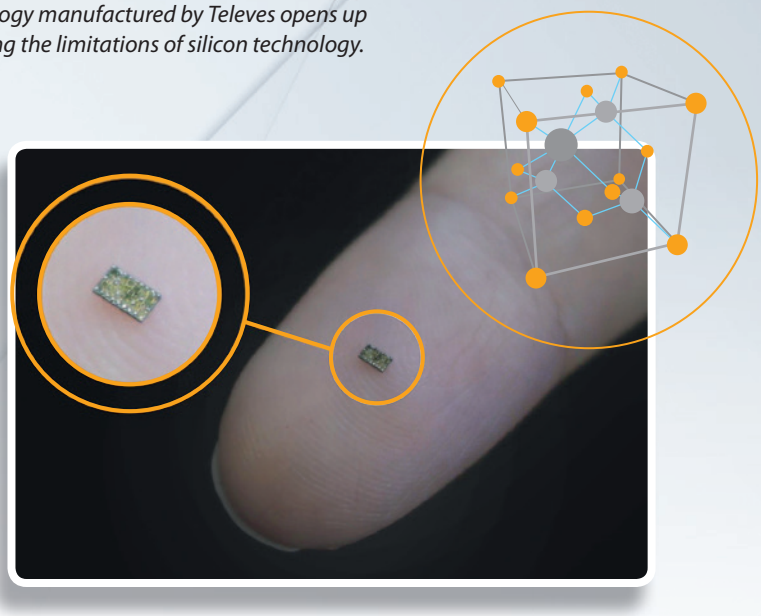
The first component with MMIC technology manufactured by Televes opens up a vast field of possibilities, overcoming the limitations of silicon technology.

TForce is the name of the technological process used in Televes to design, manufacture and assemble MMIC components. With this technology, available to very few manufacturers, the company gives a qualitative leap to **developing a new generation of products with limits only set by the minds of the designers**.

MMIC (*Monolithic Microwave Integrated Circuits*) overcomes the limitations of silicon microchips and opens a new era in the design of electronic components, which are integrated circuits that operate in the microwave frequency. These types of circuits are based on **semiconductor compounds, such as Gallium Arsenide (GaAs)**, which downsize dramatically, up to 1 - 10 mm^2.

Making components with this technology has been an extraordinary challenge, not only from the development point of view, but also because of the **high demands posed by the delicate manufacturing process**. It needs extremely precise artificial vision inspection and placement of components can only tolerate **margins of less than 5 microns and placing time values deviations less than 100 milliseconds**. It also requires an extreme control of constant ambient temperature and humidity parameters while mounting the components onto the printed circuit boards.

TForce means Televes enters a new dimension, where dependence on third party microchip manufacturers is voided, hence, limits on functionality specifications are no longer driven by the availability of components in the market, rather by the creativity of the Televes microelectronics design team.



TForce technology will enhance the diversification of Televes Corporation, which means developing leading products for very competitive and highly technological demanding sectors such as Aeronautics, Health, Energy and Automotive.

Continued progress and accepting the challenge of trying to be at the forefront of technological development is the driving force behind the adpoption of MMIC processes. Launching the first products to incorporate TForce demonstrates the ability of all members of the organization to get involved in a project that has required us to break all established molds and to dip deeper in our efforts to advance further into a new era

GALLIUM ARSENIDE
[GaAs]

Made in EU

CAMPNOVA BOSS

CAMPNOVA BOSS ANTENNA REF.144501

COMPACT DESIGN
Low visual impact
(318 x 346 x 72 mm)

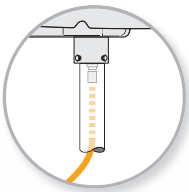
LTE READY

LTE Ready:
It includes a built-in LTE filter to avoid any wireless interference.

The base has a **TUBE COMPATIBLE** with masts up to 30mm diameter.

LOW CONSUMPTION

The base was designed **TO PROTECT AND HIDE THE COAXIAL CABLE** inside the mast or the bracket.



ANTENNA KIT
with assembly accessories (amplifier, power injector, coaxial cable and connectors).

WEATHER RESISTANT (IP 53) under any climate conditions.

Enjoy your camping experience with an intelligent antenna

The **BOSS Tech** (*Balanced Output Signal System*) is built into the antenna.
It optimizes automatically the level of TV signal received and also adjust the output level in order to get the best quality in reception.

100% Designed, Developed & Manufactured in Televes Corporation
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