

Product Guide

FOR THE 700MHZ CLEARANCE



be ready for the upcoming 700MHz clearance



Televes®



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INTRODUCTION

In November 2014 Ofcom announced its decision to relocate some of the frequencies used by Freeview to mobile services (5G). A similar process is being carried out across Europe as spectrum is reassigned to meet a predicted increase in demand for mobile data. As a result, some Freeview channels will need to move to new frequencies. This process is known as 700MHz clearance.

Ofcom has stated that between 140,000 - 270,000 homes may need to either replace or realign their aerial to continue receiving all available channels.

Aerial changes are most likely to be needed where TV services are broadcast in the aerial group C/D (690 to 790MHz), which uses the 700MHz frequency band. Ofcom's recommendation to installers is to replace aerials where signals are currently transmitted in this group with a wideband model.

When a realignment or replacement of the aerial is not sufficient or not possible a filter may be required to prevent interference once new mobile services launch.

The clearance of the 700MHz band began in 2017 and Ofcom has confirmed its aim to release this spectrum in Q2 2020. Around 90 per cent of main transmitters will require some re-engineering for clearance. Almost all of the 1,000 smaller relays in the network are likely to need work also.

As a market leader, Televes has developed a new range of products to deal with the challenge that these changes in the spectrum bring to our industry. The LTE700 range of products benefits from all the experience we acquired with the 800MHz clearance making it the best and most complete range of products for the task in hand.





THE RADIOELECTRIC SPECTRUM

UHF-SPECTRUM

As part of the strategy to create a digital single market, the UHF band, which is mainly used for broadcast, will be changed so that the mobile services use more spectrum. In this way, the frequencies in the lower end to 700MHz (470-694 MHz) will continue to be available for DTT television services and the 694 to 790MHz frequency range will be allocated for 5G applications and services network.

LTE downlink signals

These are the download signals from the company to the mobile terminal and can be received by DTT aerials.

Depending on the amplification system being used in the installation (broadband amplification programmable amplifiers or single channel amplifiers) a protection ratio can be established for channel 48 plus the rest of the channels, bearing in mind the small guard interval (1MHz) between LTE and DTT.

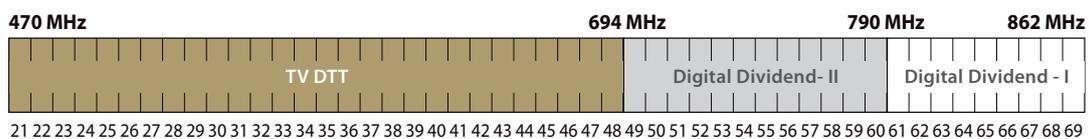
Domestic systems will present similar problems as they are exposed to LTE downlink signals that are amplified, these will normally be Broadband and hence more sensitive to interference.

LTE uplink signals

Signals being transmitted from the LTE user terminal will be received as interfering signals by receivers integrated into TV's or stand alone Set Top Boxes.

Both for domestic and communal systems the uplink signals could filter into the distribution system through a poorly screened cable, outlet plate or connector, the interference could even cause pixelization.

TV DTT y Telephony (2020-)



5G AND LTE700

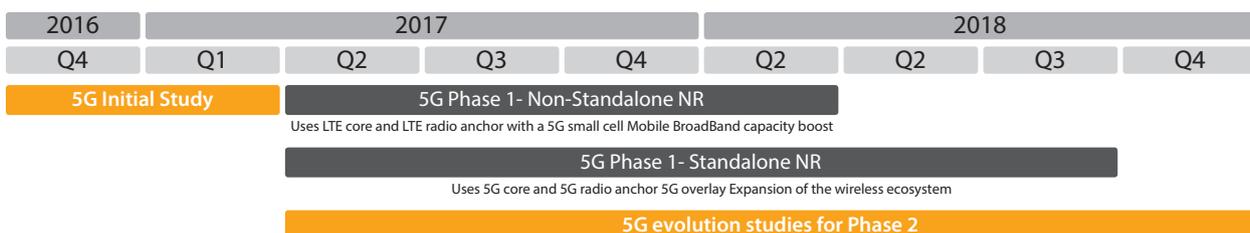
5G is a network which allows greater connection speed and contents in ultra high quality (UHQ). One of the market main trends is the connected devices evolution to the Internet of Things (IoT). According to various studies it is expected that by 2025 about 100 million devices will be connected to the internet, implying approximately 15 devices per person in a rural village, and between 50 and 100 devices connected per capita; a conventional LTE network is not prepared for many connections however this is expected to be solved with the introduction of 5G.

5G will relocate the actual frequencies of TV Channels, therefore re-tuning will be required to all TV's within all households. 700MHz band (694-790MHz) can cover larger geo-

graphic areas with less infrastructure than frequencies in higher bands.

Prior to LTE deployment Televes has conducted a study analysing what the new technology implementation will involve.

As a result of I+D+i teamwork of the market leading company, Televes has developed a complete range of products designed explicitly to minimize the potential interference of LTE700 on the DTT services. All of these products bear the seal LTE700 Ready.



CURRENT PROPOSED 700 MHz CLEARANCE TIMETABLE

ROLL-OUT PLAN SIMPLIFIED OVERVIEW

The path initiated with the deployment of the first Digital Dividend will take a further step with the development of the 700MHz clearance a process which will establish the technical conditions for the allocation of the 700 MHz band (channels 48 - 60) in EU to continue advancing the advanced mobile phone services and mobile Internet.

Televes has started developing a complete range of products specifically designed to reject LTE interference in DTT services, now up to channel 48. All these products will carry Televes' LTE700 Ready stamp.

The map included here shows when the different areas of the UK will see the change happen. The programme is currently scheduled to finish in April 2020.

- Q3/Q4 2017
- Q1/Q2 2018
- Q3/Q4 2018
- Q1/Q2 2019
- Q3/Q4 2019
- Q3/Q4 2020



INTELLIGENT BOSS ANTENNAS

Improved thanks to the TForce Technology

Televes goes beyond the silicon era into the new era in electronic component design with the new technology TForce development, which was created to design, manufacture and set MMIC components (Monolithic Microwave Integrated Circuits). These components offer a unconditional stability for a wide range of frequencies, in addition to a high linearity and a low noise.

TForce is based on the manufacturing of gallium arsenide (GaAs), which provides products with functionalities that are difficult to match.



BOSS system with TForce

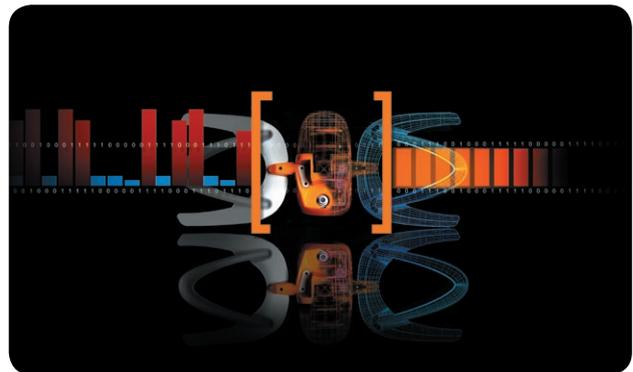
A SINGLE AND UNIVERSAL CAPTURING SYSTEM

The BOSS Tech system featured in the DAT BOSS antenna, automatically controls the level of the received signal (either very high or very low) in order to always ensure an optimal output level.

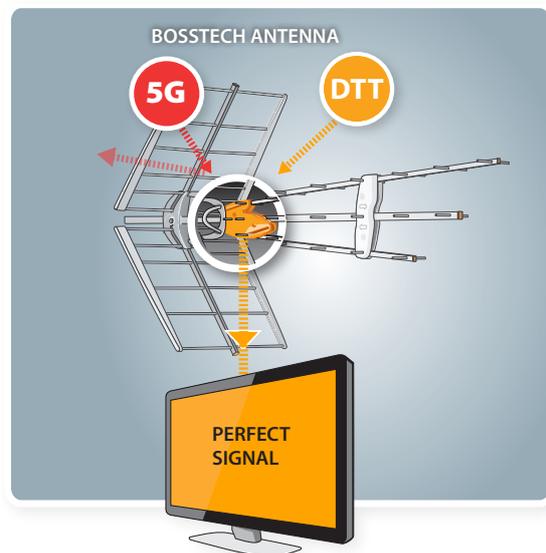
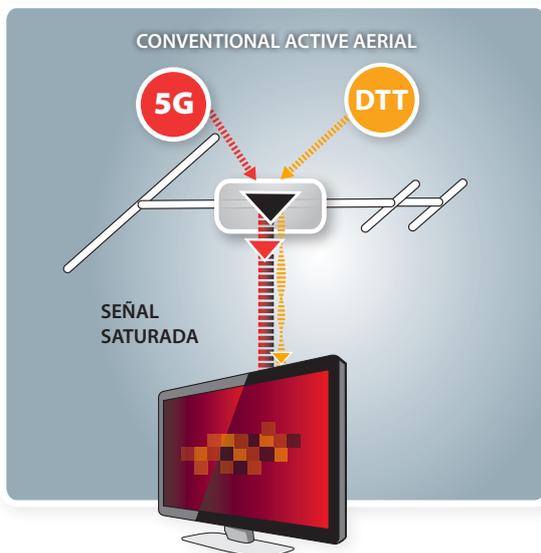
A BOSS creation with TForce technology is an extraordinary landmark in dynamic range optimization, which allows the coverage range to be increased in the DTT installations.

Active antennas can cause saturation problems after receiving LTE/4G signals, being useless in the actual scenario of the DTT and in the future of the LTE/5G.

The BOSS-Tech will regulate its gain to avoid saturation and lead to the television the best signal quality possible. Thus it means the installer and final user need not worry about the received signal level. Even the deactivation option power will ensure the signal integrity in extreme cases.



Televes' antennas with BOSS-TECH are not active aerials but intelligent



INTELLIGENT BOSS ANTENNAS

TFORCE

Ellipse Series

INTELLIGENCE TAKEN TO THE LIMIT

A new concept of DTT antenna that eliminates any interference even in the limits of the TV band, combining a breakthrough design in a 100% stainless mechanical frame that houses the new generation of TForce electronics, featuring a revolutionary SAW filter.

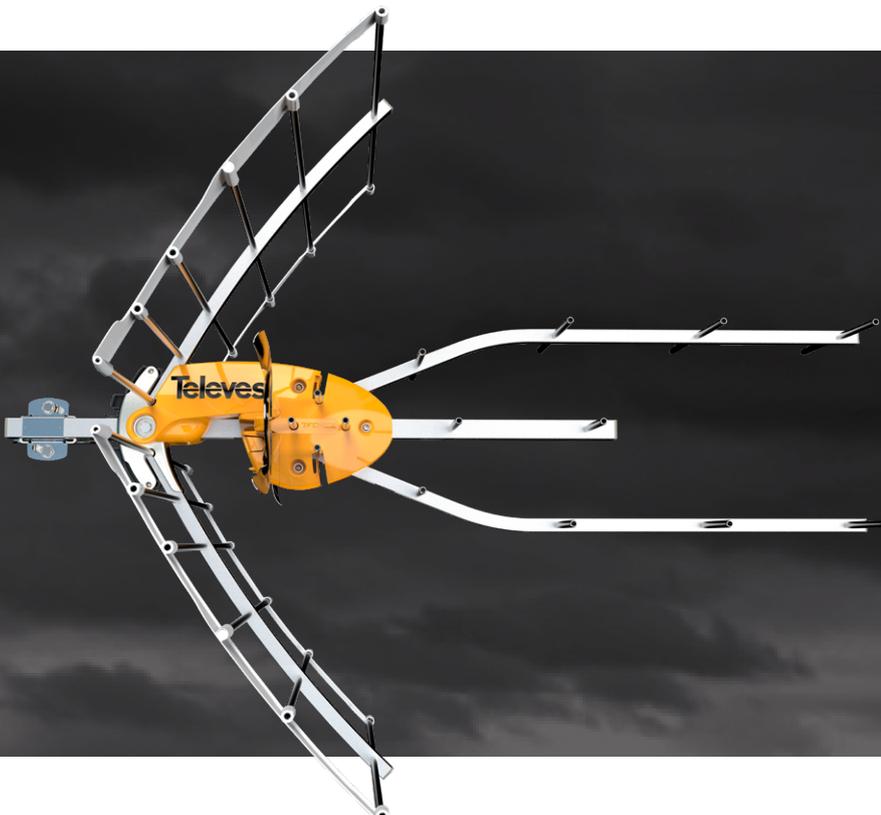
- ▶ **The best antenna for range of DTT coverage:** it receives the signal in multiple locations, whether the signal is strong or weak.
- ▶ **Capable of adapting to ever-changing conditions for signal reception:** it is constantly checking the signal and autoadjusting its gain in order to always provide the best output level possible.
- ▶ **Innovative aerodynamic design:** Unsurpassable aesthetics show a meticulous design and passion for details.
- ▶ **Eliminates any interference, even in the limits of the TV band:** thank to its SAW filter (Surface Acoustic Wave), which performs a great selectivity, interferences are filtered, mainly the telephone LTE ones, respecting the last channel of the band.
- ▶ **Mechanics completely immune to corrosion:** aluminium and fiberglass structure, stainless steel screws and reinforced ZAMAK clamp with an anticorrosive core.
- ▶ **Curves enhance reception:** the concave surface created by the reflectors focus the signal on the dipole. The convex external side maximize screening and rejection against interferences.
- ▶ **Assembly process:** Quick assembly in less than 30 seconds and all the installation is carried out with no tools required.
- ▶ **A robust and permanent fastening system** that avoids malfunctioning over time.
- ▶ **RED compliant.**

148923 Single packing (PSU included)

Ellipse[®]

INTELLIGENCE TAKEN TO THE LIMIT

IT ELIMINATES ANY INTERFERENCE,
EVEN IN THE LIMITS OF THE TV BAND



100%
INOX

G. UHF
38dBi



INTELLIGENT BOSS ANTENNAS



DAT Series

Unique and universal terrestrial television signals capture system, which is defined because it has a HIGH DYNAMIC RANGE. It allows you to receive high-quality TV in a variety of critical situations, from areas where signals are very weak to installations with high reception level.

- ▶ **A MORE STABLE RECEPTION:** it supports signal variations or fading with no effect on the TV installation.
- ▶ **VERY HIGH GAIN:** TForce increases the gain of the antenna by 13dB (42dBi in intelligent mode).
- ▶ **DTT COVERAGE ENHANCEMENT:** up to 27% higher than older models.

- ▶ **OPTIMAL C/N:** thanks to a noise figure of only 1.2dB that respects the received signal quality.
- ▶ **ROBUST AND DURABLE:** fixing system made from zamak (robust) and antenna built in high quality aluminium (stainless).
- ▶ **FULLY SHIELDED JUNCTION BOX:** it protects the BOSS system against impulse noise, and it is grounded to a full protection against electric shocks.
- ▶ **LTE700 Ready:** They incorporate filtering as of 48 channel.

DAT BOSS MIX:

COMBINED ANTENNA FOR UHF BAND RECEPTION.



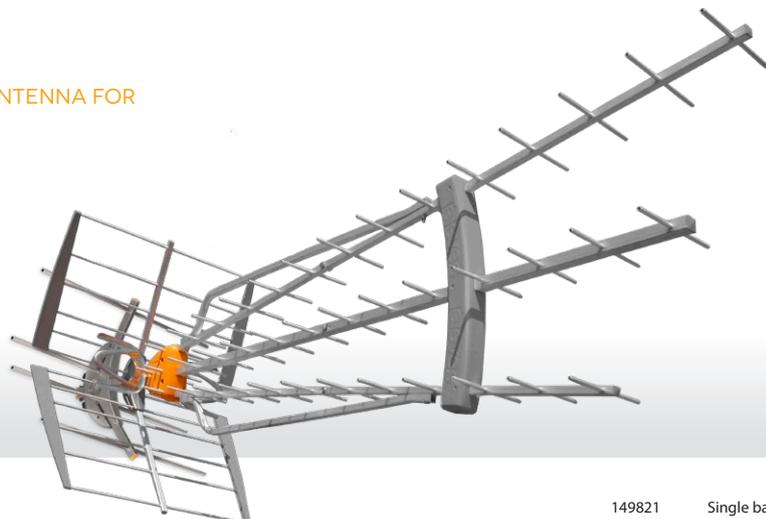
G. UHF
41dBi

G. BIII
36,5dBi

149421	Single packing
149422	Multipack (6u)

DAT BOSS MIX LR :

COMBINED LONG RANGE UHF AND BIII ANTENNA FOR EXTREME RECEPTION CONDITIONS.



G. UHF
46dBi

G. BIII
36,5dBi

149821	Single band
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INTELLIGENT BOSS ANTENNAS

DINOVA BOSS

Low visual impact antenna, aesthetic and discreet, it integrates an improved Boss with TForce technology. All the advantages of a perfect TV reception are also possible on special locations as facades, historical buildings, emblematic properties, and on balconies.

- ▶ **HIGH WEATHERABILITY:** Its casing built in PE improve its resistance to wear on the outside and UV radiations.
- ▶ **REINFORCED WITH GLASS FIBER:** Fixing system made from this material (Fiberglass), increase its resistance to corrosion and flexibility, considerably reducing the weight.
- ▶ **VERY HIGH GAIN:** TForce technology provide to the BOSS a 10dB increase (34dBi in intelligent way).
- ▶ **VERTICAL AND HORIZONTAL:** Easy installation for both polarizations.
- ▶ **LTE700 Ready:** They incorporate filtering as of channel 48.

MIX Version incorporates two telescopic antennas for BII reception (channels 5-12).

G. UHF
34dBi



144021 Antenna
144022 Antenna Kit+ Power (BOSS activation)

▲ DINOVA BOSS (UHF)

G. UHF
33dBi

G. BII
24dBi



144221 Antenna
144222 Antenna Kit+ Power (BOSS activation)

▲ DINOVA BOSS MIX

OMNINOVA BOSS

Antenna, which does not need to be aligned, incorporates an improved BOSS with TForce technology. Its reception capacity in 360° (omnidirectional) in concert with its new intelligence, are the perfect combination to offer the best TV reception without worrying about signal level and antenna location. It is, therefore, the ideal aerial for DTT static reception in mobile installations (caravans, boats...) that stay for a short period of time.

- ▶ **OMNIDIRECTIONAL:** Easy installation because it does not need to be aligned.
- ▶ **HIGH WEATHER ABILITY:** Its casing built in PE improve its resistance to wear on the outside and UV radiations.
- ▶ **VERY HIGH GAIN:** TForce technology provide to the BOSS a 10dB increase (40dBi in intelligent way).
- ▶ **IMPROVED MECHANICS:** The base section integrates a fixing component compatible with masts diameter of 30mm.
- ▶ **LTE700 Ready:** They incorporate filtering as of 48 channel.

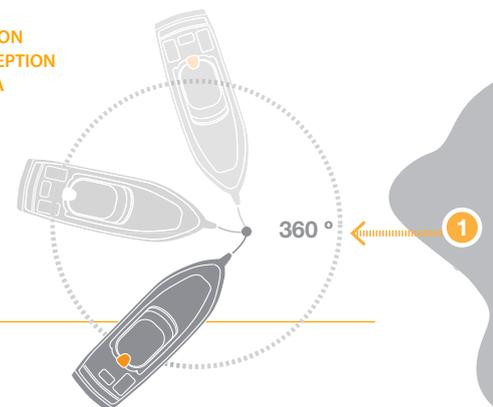
T-FORCE



144422 Antenna Kit: + Power (BOSS activation) + DC injector

▲ OMNINOVA BOSS

OMNIDIRECTIONAL FUNCTION PERMITS AN OPTIMUM RECEPTION INDEPENDENT OF ANTENNA ALIGNMENT.



INDOOR AND PASSIVE ANTENNAS

T**FORCE**

BEXIA

OUTDOOR PERFORMANCE INDOORS

Intelligent and multi-directional indoor antenna with outstanding performance, thanks to its flat antenna design with a minimum thickness. Intelligent mode can be activated powering the antenna through the RF output connector.

- ▶ **DUAL BAND SIGNAL ADJUSTMENT:** new design of independent TForce technology in each band, making possible a separate gain autoadjustment of VHF and UHF bands..
- ▶ **MULTIPLE POWER SUPPLY OPTIONS:** it includes a power injector with a micro-USB input connector that allows powering with an USB source (PSU or TV USB port) through the RF output connector of the antenna.
- ▶ **«PLUG & PLAY»:** designed with a 360° reception capability (omnidirectional), making easier the installation process without the need to be pointed.
- ▶ **SAW FILTER:** integrated for a high LTE band rejection (cell phone interference).
- ▶ **RED compliant.**

G. UHF
20dBi

G. BIII
17dBi



▲ Bexia

130501

Antena Kit + Power injector + USB-microUSB cable

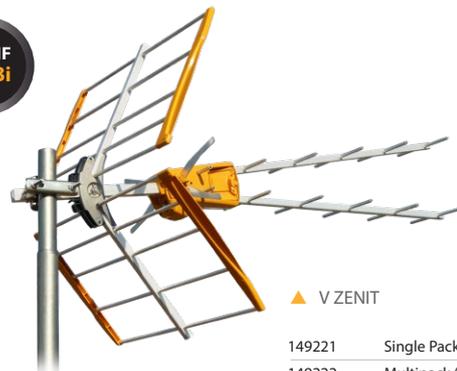
V ZENIT

This antenna with a "V" type structure allows it to achieve an excellent compromise between size and gain.

- ▶ **ROBUST AND DURABLE:** Fixing system made from zamak (robust) and antenna built in high quality aluminium (stainless).
- ▶ **FULLY SHIELDED JUNCTION BOX:** It protects the BOSS system against impulse noise, and it is grounded to a full protection against electric shocks.
- ▶ **LTE700 Ready:** They incorporate filtering as of 48 channel.

MIX Version incorporates a dipole and specific reflectors for BIII reception (channels 5-12).

G. UHF
13dBi



▲ V ZENIT

149221

Single Packing

149222

Multipack (10u.)

G. UHF
13dBi

G. BIII
8,5dBi



▲ V ZENIT MIX

149321

Single Packing

FILTERING

LTE700 FILTERS

These filters are adapted to the 700MHz clearance, so the signal is filtered at 694MHz (channel 48).

They are characterised by having high reliability and stable of parameters, being stable to the temperature and humidity changes. Minimum insertion losses, guaranteeing that the outputs parameters are not compromised.

They are classified according to the rejection of the spectrum band (medium, high...). Moreover, their two different formats permit their adaptation indoor or outdoor depending on installation location.

MEDIUM REJECTION FILTER



▲ 403201

- ▶ Signal filtered at 694MHz with attenuation greater than 20dB.
- ▶ Indoor installation.
- ▶ Connection system with "F" connector

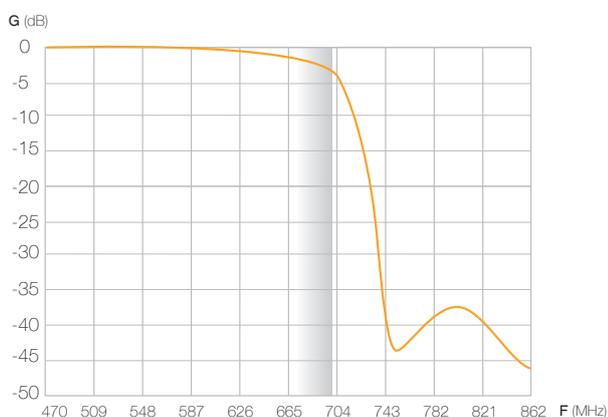
HIGH REJECTION FILTER



▲ 405202

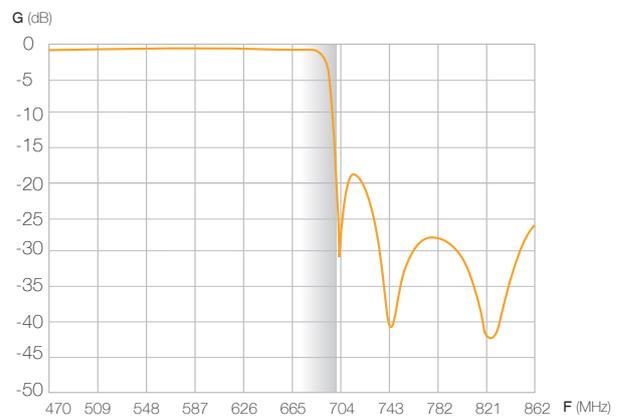
- ▶ Signal filtered at 694MHz with a attenuation greater than 25dB.
- ▶ Outdoor installation.
- ▶ EasyF connection system: A fast and reliable system, that reduces the time of installation by 50% and it does not require extra connectors (Built-in-System).

MR: MEDIUM REJECTION



REF.403201

HR: HIGH REJECTION



REF. 405202

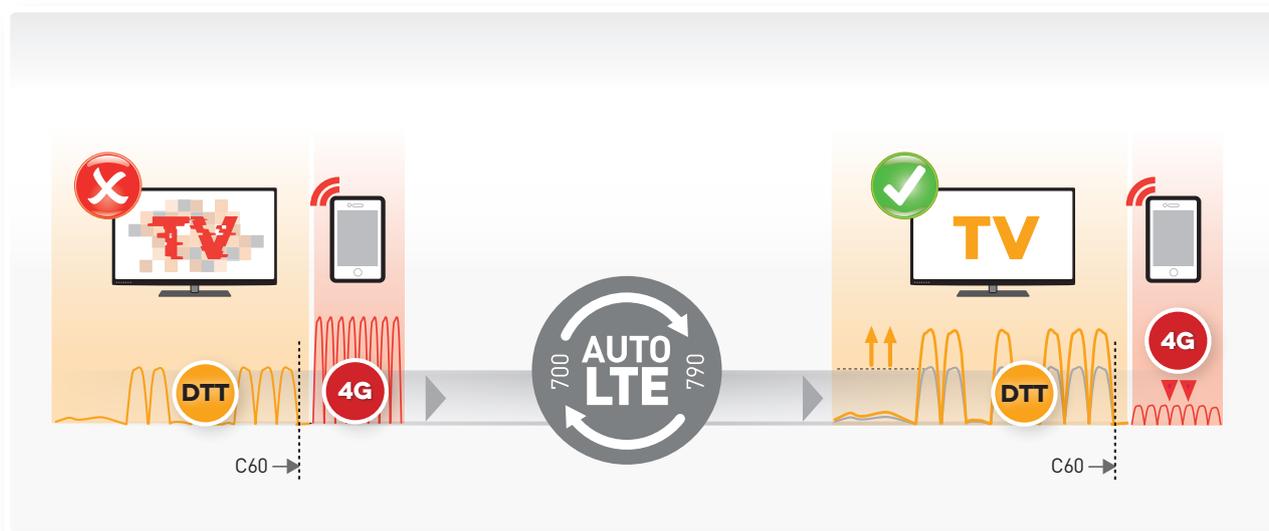
AMPLIFICATION

FILTERING FEATURES: AUTO-LTE

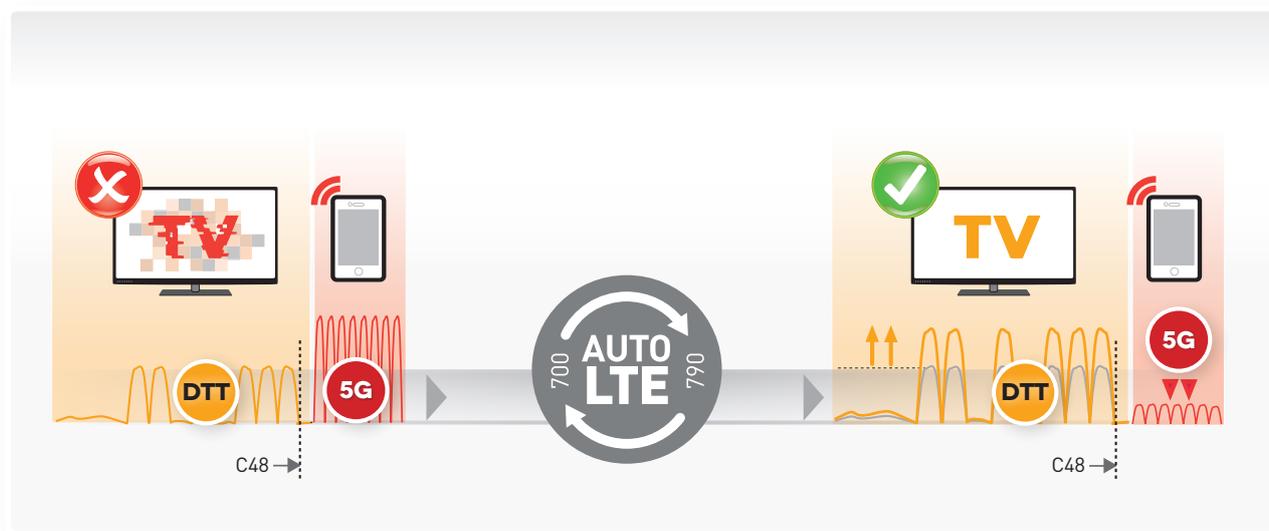
Auto-LTE filtering is included in many LTE700 amplification products of Televés. It automatically detects and identifies the LTE signal type that interferes with the device, and it switches the internal filter to adapt it to the landscape (first or second Digital Dividend: LTE790 / LTE 700 Ready).

Thus, this functionality provides the versatility maintaining the perfect LTE installation in every situation, it allows a single device before, during and after the period of transition.

LTE790 SETTING (1ST DIGITAL DIVIDEND)



LTE700 SETTING (2^º DIGITAL DIVIDEND)



AMPLIFICATION

NANOKOM SERIES: MAST AMPLIFIERS

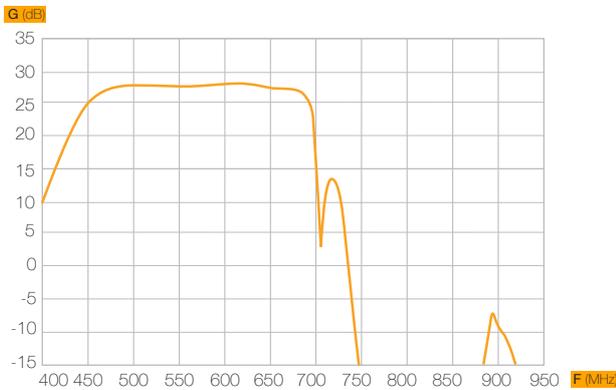
Active devices with mast installation for the amplification and combination of terrestrial and satellite television signals coming from several antennas.

- ▶ **Separate amplification and very low noise figure**, thus respecting signal quality.
- ▶ ON/OFF switch to allow **DC pass**.
- ▶ **Gain regulation**: Using manual regulator or USOS technology (User Selectable Output Signal).
- ▶ Ultra-small **ergonomic design**.
- ▶ **“EasyF” connection system**: A reliable and safe system, saving up to 50% of the installation time.
- ▶ **High-screening Zamak chassis**.
- ▶ **Easy mounting**: Resistant ABS-plastic orange for outdoor installation.
- ▶ **LTE700 Ready**: They incorporate filtering as of 48 channel.

NanoKom
Series



▲ 561421



Ref.	Inputs/Bands	Gain (dB)	Regulation	LTE filter
561620	UHF[dc]-VHFmix-SATmix[dc]	28-(-1,5)-(-2,5)	USOS	AUTO-LTE

Ref.	Inputs/Bands	Gain (dB)	Regulation	LTE filter
561421	UHF-UHF[dc]-SATmix[dc]	28-28-(-2,5)	Manual	LTE700
561521	BIII/UHF[dc]-FMmix-SATmix[dc]	18/28-(-1,5)-(-2,5)	USOS	LTE700
561621	UHF[dc]-VHFmix-SATmix[dc]	24-(-1,5)-(-2,5)	USOS	LTE700
561721	UHF[dc]-UHF-VHFmix	28-28-(-1,5)	Manual	LTE700
561821	BIII-UHF[dc]-FMmix	18-28-(-1,5)	USOS	LTE700



AMPLIFICATION

DOMESTIC AMPLIFIERS

With a discreet design and a miniature size, this domestic amplifier is distinguished by its output high power in VHF and UHF.

- ▶ **Low consumption:** Integrated and efficient power supply.
- ▶ Connection is made via “F” or “CEI” connectors (according to ref.).
- ▶ **TV Output:** Output with lower gain for direct connection to a television (according to ref.).
- ▶ **Manual gain regulation,** protected by a hinged lid.



▲ 545720

AUTOMATIC DOMESTIC AMPLIFIERS

Within the range of home amplifiers it is possible to find references with AUTO-LTE, which automatically select the filter needed in the installation. This feature makes these amplifiers the perfect solution for LTE transition situations (700/790)

This innovative system is available in two products, each with a different gain regulation system:

Ref. 545801: Equipped with automatic control gain (ACG) that makes it **Plug & Play**.

Ref. 545901: Equipped with **USOS (User Selectable Output Signal) technology** that allows the installer to select the desired output level. The device automatically adjusts gain according to the input signal variation.



▲ 545901

Ref.	Total Outputs N°	TV output	Connectors	Gain (dB)	Preamplifiers alim./BOSS	Regulation	LTE filter
552120	2	X	CEI	22	X	Manual	LTE700
552220	3	✓	F	20 (12@TV)	X	Manual	LTE700
545720	3	✓	CEI	20 (12@TV)	✓	Manual	LTE700
545802	3	✓	F	20 (12@TV)	✓	USOS	AUTO-LTE
545901	3	✓	F	20 (12@TV)	✓	USOS	AUTO-LTE

AMPLIFICATION

AVANT X PRO SAT: PROGRAMMABLE HEADEND AMPLIFIER

Multi-input multiband amplifier, perfect for terrestrial individual or MDU (Multi Dwelling Unit) installations, that can achieve **programmable amplification and balancing** of different RF input signals.



It offers up to 32 individually programmable filters, with automatic signal adjustment in each one, and digital processing of channels.

- ▶ UHF/VHF digital filters with **high selectivity**: 30dB rejection.
- ▶ **AutoLTE**: Automatic internal adaptation of filters, depending on the LTE signal type (4G/5G).
- ▶ **SAW filter**: Against LTE interferences, with the best selectivity and stability.
- ▶ **TForce Technology**: terrestrial signal level always stable and adapted to its optimum value.
- ▶ **Storage** of several setups and **cloning** between different AVANT X models.
- ▶ **Zamak chassis** provides high screening effect.
- ▶ **Light-weight and compact** (225x120x55mm).



▲ 532131

CHOOSE THE PROGRAMMING MODE YOU WISH:

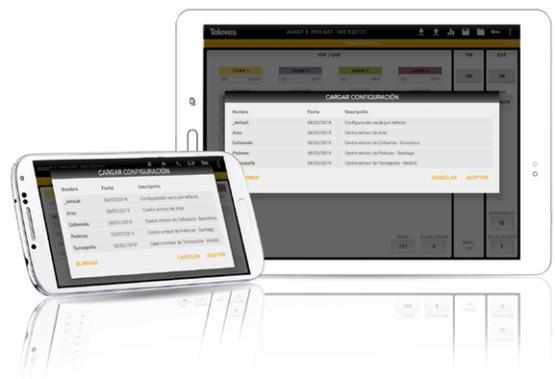


App ASuite for PC or tablet / Android smart phone, via USB connection (OTG Cable included):



The multi-band amplifier configuration is performed in a friendly and intuitive environment. A configuration can be defined and stored, even when not connected to the multi-band amplifier; this configuration can be retrieved later for installation and adjustment.

Furthermore, the application allows the monitoring of channel quality parameters and the generating of an installation report that includes the configuration applied.



Universal programmer (ref. 7234):

The unit is compatible with the programmer, ensuring backwards compatibility.



Automatic programming by means of the "AUTO-PROGRAMMING" button (press and hold) of the multi-band amplifier itself:

Thanks to a tuner that is able to detect DVB-T channels for UHF and VHF inputs, the unit performs an automatic programming of the filters when executing this option, as well as the appropriate tuning to avoid intermodulation.

AMPLIFICATION

T.12 RANGE: SINGLE CHANNEL AMPLIFIERS THE SINGLE CHANNEL AMPLIFIER IMMUNE TO THE LTE.

This single channel amplification range offers unbeatable performance on the signal processing, with frequency settings fine and very easy.

The fact that it is produced on a latest generation robotised line and it is subjected to strict quality controls, this product ensures a reliability and stability for the adaptation for the Digital Dividends without precedent.

- ▶ Modular and expandable system.
- ▶ Design of enhanced shielding.
- ▶ Powering of up to 24 modules, from a PSU.
- ▶ Remote alimentation of Pre-amplifiers.
- ▶ High reliability thanks to its manufacture completely robotised.
- ▶ Fully compatible with the previous model (T03).



▲ 508612

REF.	DESCRIPTION
508212	T12 Single Channel Amplifier FM 88...108MHz G 35dB Vo 114dB μ V
508312	T12 Single Channel Amplifier BIII 174...230MHz G45dB Vo 123dB μ V
509912	T12 Single Channel Amplifier DAB 195...232MHz G45dB Vo114dB μ V
508612	T12 Single Channel/ Multichannel Amplifier DTT UHF 470...862MHz G 50dB Vo125dB μ V (up to 7 channels)
509812	T12 Single Channel Amplifier UHF High Selectivity 470...862MHz G 55dB Vo 125dB μ V
508012	T12 Amplifier IF 950...2150MHz G 35...50dB Vo 124dB μ V
549812	T12 Switch-mode Power Supply Unit 60W 24V-2.5A

DISTRIBUTION

COAXIAL CABLE

With the roll-out of the 5G services, there is the possibility that signals transmitted from the mobile (uplink) could filter into the coax distribution network. Coaxial cable should be fully shielded and avoid radiations capture that disrupt the TV signal. In this scenario, the losses are no longer the most important.

Our cables range conforms to new European CPR (“**Construction Products Regulation**”) regulation, that offer a focussed classification on cable performance in case of fire. Safety is paramount and protecting people is not an option, it is our responsibility as manufacturer.

Moreover, in the Cable Certification Centre the individual cable control is performed, ensuring the quality in all manufacturing processes.



▲ SK110plus

▲ 2127XX

A+ Class, triple shielding (TSH): they ensure the increased immunity to interferences thanks to their high shielding efficiency (triple: mesh + 2 films).

Euroclass Eca	cai Cable Benchmark TYPE 100	Refs.	Description	Colour	Packing
		413707	Coaxial Cable SK110plus PVC Eca	Black	Wooden drum
		413708	Class A+ Triple Shielded TSH 18VAtC Ø 1.02/4.6/6.70mm	White	Wooden drum

Double shielding

Euroclass Eca	cai Cable Benchmark TYPE RG6-SDU	Refs.	Description	Colour	Packing
		2127	Coaxial Cable CXT-1 PVC Eca 17VAtC.A Ø 1.00/4.7/6.7mm	White	Plastic reel
		212701		Black	Cardboard reel
		212703		White	Wooden drum
		212702		Black	Wooden drum
		212704		White	Wooden drum

DISTRIBUTION

“PRO EASYF” CONNECTORS

These professional connectors have an extra shielding film, ensuring an effectiveness in classA+ shielding requirement for LTE Ready situations.

Moreover, its EasyF connection system speeds and ensures the fitting, since it does not have threaded or disassembled pieces and the connection is done by one single screw that guarantees that the central conductor pressure very effective.

SIMPLICITY AND QUICK FITTING:

- ▶ Single securing screw.
- ▶ Easy visual check of the connection.
- ▶ Not threaded.
- ▶ No loose parts.

SAFE CONNECTION:

- ▶ Saves time and reduces the cost of the installation.
- ▶ Assures the reliability of the connection and does not require any future revision.
- ▶ If something fails, connectors are not the cause.

ELECTRICALLY PERFECT:

- ▶ Automatic manufacturing.
- ▶ Total protection that minimizes the non desired effect on the DTT reception.
- ▶ Perfectly adaptable to the components of the distribution network.
- ▶ Due to its performance and quality, it is the connector to be used for the standard and HD DTT.



▲ 413210
CEI male

▲ 413310
CEI female

▲ 413410
Quick F

RECEPTION AND ADAPTATION

T.OX TWIN TRANSMODULATOR / REGENERATOR WITH REMULTIPLEXED

The twin multiplexer distributes in two outputs DVB-T or DVB-C (according to ref.) services from the two DTT input multiplexes, either in DVB-T or DVB-T2 format. **The main function is the regeneration of DTT signals and/or input services filtering (ref. 565101) or the DVBT/T2 - QAM transmodulation (ref. 565201).**

- ▶ Fully configurable TWIN (2-multiplex) output.
- ▶ Edit the **transport stream parameters** (TS_id, ON_id and LCN).
- ▶ Compatible with **professional CAM** modules/cards.
- ▶ Configurable and remote-monitored **via CDC**.
- ▶ **Information about the useful rate** of the input services and about output channel occupation.
- ▶ Content filtering through the elimination of the selected PID.

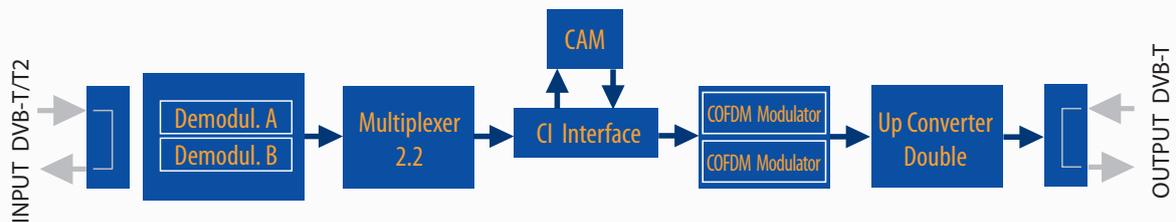


▲ 565201

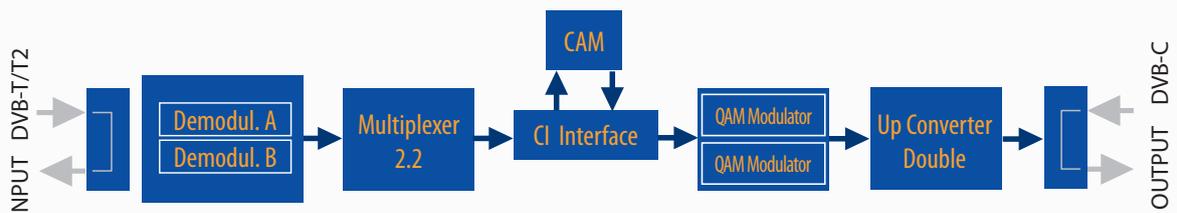
▲ 565101

REF.	DESCRIPCIÓN
565101	T.OX Twin Transmodulator DVBT/T2-COOFDM CI (47...862MHz) Multiplexer: 2 Channels (DVB-T/T2): 2 Channels (DVB-T)
565201	T.OX Twin Transmodulator DVBT/T2-QAM CI (47...862MHz) Multiplexer: 2 Channels (DVB-T/T2): 2 Channels (DVB-T)

REF. 565101



REF. 565201





HANDHELD METER

HANDHELD METER CUSTOMIZABLE MULTI STANDARD

A **pocket size** meter which allows you to customize upgrade choice with downloadable **software under licence**.

Choose the standards you're actually going to measure and only pay for the features you need.

H30FLEX the standard you need in a meter.

Great measurements performance, including a digital real-time spectrum analyser, constellation and echo diagrams, data-logs...

- ▶ Multi Standard, ready to take measurements on the DVB-S/S2 satellite band and DVB-T/T2 and DVB-C terrestrial band channels.
- ▶ Accuracy and speed: Real-time digital processing.
- ▶ Fast & Automatic channel auto-scan with parameters auto-detection (system scan).
- ▶ High contrast screen for bright sunlight.

H30FLEX



SCAN TO WATCH VIDEO



A00399

EN.TELEVES.COM/H30FLEX

REF.	DESCRIPTION
593301	H30FLEX with DVB-S/S2 and DVB-T
593302	H30FLEX with DVB-S/S2 and DVB-T/T2
593303	H30FLEX with DVB-S/S2 and DVB-C
593304	H30FLEX with DVB-S/S2, DVB-T/T2 and DVB-C
OPTIONS	
593231	DVB-T
593232	DVB-T/T2
593233	DVB-C
593234	dCSS (SCR)
593235	Extended Terrestrial Input to 120dBµV
593236	Analogue A/V Display

Affordable, high quality measurement equipment

All the functions you need in your hand



▶ **RUGGED AND LIGHT-WEIGHT**
ABSOLUTE RELIABILITY AND PROTECTION IN AN EASY TO CARRY FORMAT



▶ **ERGONOMIC HANDHELD DESIGN**
USER-FRIENDLY INTERFACE



▶ **LONG BATTERY RUNTIME**
WITH POWER-SAVING MODES



▶ **MADE IN TELEVES**
YOUR QUALITY WARRANTY

A PORTABLE METER

A PORTABLE METER FOR PROFESSIONAL USERS THE POWER OF USER EXPERIENCE

SCAN TO WATCH VIDEO



A00412

EN.TELEVES.COM/MOSAIQ6



Its high performance and high accuracy makes MOSAIQ6 the perfect tool for network operators, radio frequency technicians and broadcasters.

6 SCREENS IN 1

Thanks to its configurable interface, you choose which widgets (up to 6) you want to simultaneously display in the 8" high resolution screen. Check the installation status at a glance.

A TRUE TOUCH SCREEN

This new interface has been designed and also programmed to take full advantage of a touch screen with touch gestures (tap, double tap, long press, drag, spread or pinch). Only in this way is it possible to operate so easily a meter with so many performances.



ULTRA-FAST SPECTRUM ANALYSER

Due to its rapidity, accuracy, and a full range of features, it is the most obvious result of our real time digital processing engineering.

ERGONOMICS

With a robust design and satisfactory dimensions (220 x 260 x 65mm), this meter offers an optimized shape to maximize the effectiveness of movement. Every menu and button is accessible with one single hand.

ALWAYS READY

A new battery system allows to change the meter's battery during the field work. Don't worry about the load, two batteries give a sufficient operating range for a full work day.

EFFICIENT MANAGEMENT

The MOSAIQ6 cloud repository is available to keep your meter always updated. It also offers the comprehensive management of your meter (or meters), like downloading measurements, managing the channel plans, configuration, etc.

REF.	DESCRIPTION
596101	MOSAIQ6 with F.O.
596111	MOSAIQ6 with Selective F.O.
OPTIONS	
596201	GPS Drive Test
596202	Wifi 5GHz
596203	Analogue Measurements
596204	DAB/DAB+
596205	UHD 4K

MORE INFORMATION:

Standards:

Radio: FM

Terrestrial: DVB-T & DVB-H, DVB-T2 & DVB-T2 Lite, ISDB-T/Tb

Satellite: DVB-S & DVB-S2 (multi-stream), 8PSK & DSS

Cable: DVB-C, QAM (Annex A, B, C)

Fiber-optic interface (also selective version)

RF measurements, continuous spectrum analyser: quality parameters (CBER, MER, VBER), link margin, constellation, echoes, LTE interference detection, waterfall, scan, path delay...

MPEG measurements: Analysis of T2-MI over ASI or IP packets, analysis of TS in real time, view of all services and tables, quality analysis

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