series

A range of solutions
designed with you in mind

3,3 GHZ

NETWORKING ATTENUATION

F.O.

REMOTE CONTROL

LTE READY

Televes

The H series Range

The Hseries range has been designed to capture all the information from a signal instantaneously. This can be achieved thanks to the development of complex mathematical algorithms that allow the meter to obtain all the parameters of the radio electric spectrum in real time.

This is Real Time Signal Processing: to offer our customers the **precision and performance of laboratory equipment with added exclusive functionalities**, in a handheld state of the art CATV or multistandard meter.

COPARATIVE TABLE

	H30	H30D3	H45 COMPACT	H60
DVB-C	✓	✓	✓	✓
Docsis 3.0	-	✓	-	-
DVB-T,DVB-C, DVB-S,DVB-S2	-	-	✓	✓
DVB-T2	-	-	OPT.	✓
Full HD 1080p visualization with Dolby D++ (encrypted channels included)	-	-	✓	✓
HDMI	-	-	✓	✓
Remote control and monitoring via ETH	✓	✓	-	OPT.
FO interface and selective FO (CWDM Filter)	-	-	OPT.	OPT.
Integrated GPS	-	-	-	OPT.
Professional spectrum analyser	-	-	2,5GHz	3,3 GHz
LTE simulator	-	-	✓	✓
High definition digital screen	2,8"	2,8"	5"	5,7"

Digital Processing.
The characterizing DNA

The most accurate and fast range of meters in the world, with mathematical precision and real-time measurements. This is Digital Processing.

Accessories and spare parts

Every meter kit includes a wide range of accessories which are also available as spare parts.

All the H30D3 and H30 include:

CARRYING BAG*
A practical accommodation for both meter and set of accessories.

12V POWER SUPPLY UNIT
12V Power supply with 220V mains input.

CAR CHARGER
For those situations where the car is the only alternative.

RF CONNECTORS
Set of different RF connectors.

FASTENING STRAPS
Use the meter with complete comfort and security.

All the H60 and H45 include:

CARRYING BAG
A practical accommodation for both meter and set of accessories.

OUTDOOR USAGE CASE *
Protect the meter from adverse weather conditions.

12V POWER SUPPLY UNIT
12V Power supply with 220V mains input.

CAR CHARGER
For those situations where the car is the only alternative.

RF CONNECTORS
Set of different RF connectors.

OPTICAL ACCESSORIES SET**
Inter-connection leads, adaptors and attenuators for FO measures.

FASTENING STRAPS
Use the meter with complete comfort and security.

HSUITE SOFTWARE
Manage all the measurements with this software tool.

* optional ** only available for specific models

Our exclusive range of solutions designed for you

We turn the dreams into reality, at an unbeatable price

STATE OF THE ART DESIGN

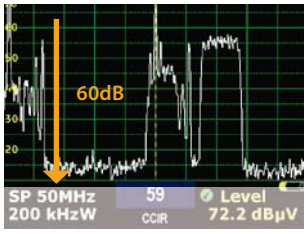
COMPACT, ROBUST AND LIGHT
IMPROVES INSTALLATION PRODUCTIVITY

The Hseries is the every day tool for even the most demanding environments. The double injection of reinforced polycarbonates of its chassis gives the Hseries an outstanding resistance.

EXCLUSIVE FEATURES

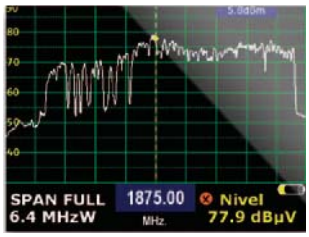
PROFESSIONAL SPECTRUM ANALYZER

High precision, wide dynamic range, high resolution and fastness. Concepts linked to digital processing that turn Hseries into a complete professional tool for the RF analysis.



WIDE DYNAMIC RANGE AND HIGH SENSIBILITY.
UP TO 60dB

You will be able to measure extremely weak/strong signals without affecting the accuracy of the reading.



FREQUENCY RANGE UP TO 3.3 GHz
A BROAD FREQUENCY RANGE

The HSeries frequency range allows you to check directly from the fiber the satellite polarities configured in "stacking" mode (fiber IRS systems)

MAXIMUM RESOLUTION UP TO 100 kHz
MAXIMUM PROCESSING DIGITAL POWER

Analyse wideband signals (Beacons VSAT, special transmission signals, etc.)

REMOTE CONTROL

MONITORING AND REMOTE CONTROL

By using the HSeries you can access your measurements from any device connected to the Internet (smart phones, tablets, laptops, etc.)

You could also give the customer the required information to integrate the meters within a control system. This will include automatic firmware updates and the automatic synchronization with a server set up by the customer.

EASY TO USE
IMPROVE YOUR PRODUCTIVITY IN ANY INSTALLATION

The user interface has been developed in a user-friendly way to reduce the required time for any installation.

INTERFACES
WIDE CONNECTIVITY

Coaxial and fiber optic leads, Docsis 3.0... A variety of inputs signals that can be measured combined with different control interfaces: Ethernet, GPS, USB, HDMI, SD.

HIGH RESOLUTION AND VISIBILITY SCREENS

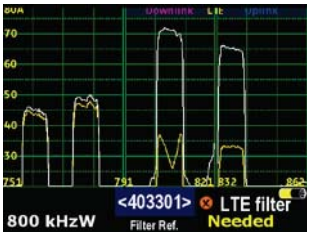
HSeries ' screens have been developed with the latest technology and the best contrast combined with specific modes for outdoors usage.

GREATER BATTERY LIFETIME
MORE THAN 4 HOURS

Achieved by both the use of lithium batteries and the most advanced battery efficiency algorithms.

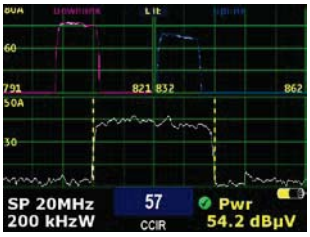
PATENTED LTE ANALYZER

The HSeries range has a wide set of tools to analyse LTE/4G signals. This tools can help you determine whether the LTE/4G might affect the DTT signals or not.



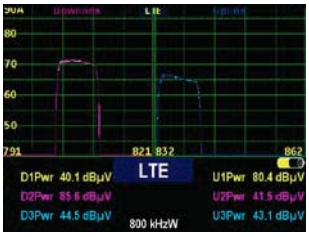
LTE CHECK
CHECK FOR LTE INTERFERENCES

The device will analyse the LTE and DTT signals simultaneously, estimate whether or not the LTE signal should be filtered and suggest the most suitable filter in such case. Finally, it will also simulate the effect on the signals of the filter when added.



LTE vs TDT
SIMULTANEOUS ANALYSIS

Simultaneous visualization of the spectrum of both LTE signals (uplink/downlink) and DTT multiplexes.



DOWNLINK-UPLINK
DETAILED ANALYSIS OF THE LTE SIGNAL

LTE Spectrum Analysis (downlink and uplink)

COVERAGE ANALYSIS USING GPS

Ability to perform coverage site surveys.

All measurements can be saved including the geographic information to further representation in coverage maps and report generation.

CATV METERS

THE BEST FEATURES IN THE SMALLEST SIZE

H30D3 & H30

have been designed to carry out installation, maintenance and remote control tasks for cable networks of analogue and digital TV signals or Docsis3.0.

Its small size and the fact that can be monitored remotely, allows you to leave it at a TV headend in order to monitor is performance remotely and detect intermittent problems that difficult to identify.

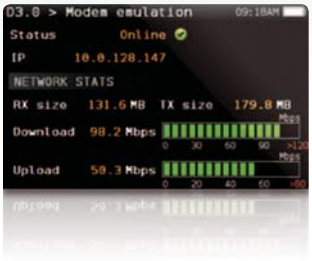
It includes a set of easy-to-use functionalities to install and monitor analogue and digital networks cable TV, both on-site and remotely.

H30 D3 FUNCTIONS

SPEED TEST

Measure the upstream/ downstream speed of a DOCSIS network. This measure is made using a FTP server that shall be configured by the user (URL, file, get/put, user and password)

This function shows the modem IP inside the DOCSIS network, and the maximum negotiated speed (DS/US). Once the test have begun, the speed is continuously updated.



MODEM EMULATOR

Use your H30 as a DOCSIS modem through the Ethernet port to another device.

This feature shows the state of the link, the instantaneous speed and the size of data sent through the modem.

CMTS SYNCHRONIZATION STATUS

Get a step by step mark of a Fail/ Not fail test while the modem finds, gets connected and registers within a CMTS headend, and get all the critical parameters during the process.

Confirm that the modem has found the downstream link firstly and then the upstream link. Then get the configuration and address of the DHCP server, TOD server time, and the configuration file with the complete registration information.

DOWN/UP STREAM MEASURES

Get a report of the Fail/Not Fail test for the 8DS and 4 US channels simultaneously. You will be able to see on screen all of the basic settings of a channel when you select it. If you select any of the default profiles, all of the edges will be configured automatically.

Get all of the details from a certain channel: modulation, symbol rate, frequency, level, MER, pre and post BER.

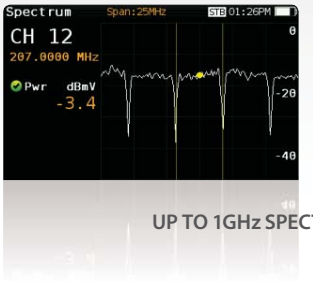
MODELS AND ACCESSORIES

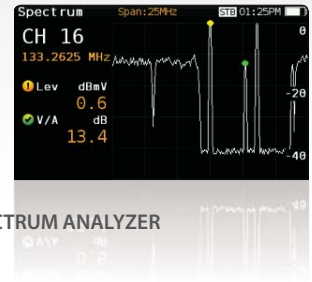
REF.	METERS
593103	H30D3 CATV **DOCSIS 3.0** (USA)
593104	H30D3 CATV **DOCSIS 3.0 / EURODOCSIS**
	(INCLUDES CARRYING BAG AND IP TEST)
593101	H30 CATV (USA)
593102	H30 CATV (INCLUDES CARRYING BAG AND IP TEST)
593105	H30 CATV WITH PROFESSIONAL CONTROL REMOTE API
	(INCLUDES CARRYING BAG, IP TEST AND MPEG INFO SERVICES)

REF.	ACCESSORIES
593210	MPEG INFO SERVICES
593211	IP SPEED TEST
593201	CARRYING BAG

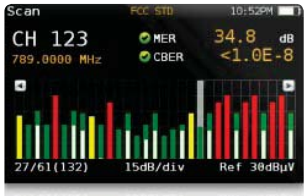
COMMON FEATURES TO BOTH MODELS

CHANNEL INFO QUICK CHANNEL INFORMATION





UP TO 1GHz SPECTRUM ANALYZER



SYSTEM SCAN
ULTRA-FAST GRAPHIC ANALYSIS
OF ALL THE SYSTEM

DATALOGS
VISUALIZE, SAVE
AND DOWNLOAD

RETURN CHANNEL ANALYSIS
MAX, AVERAGE AND PEAK VALUES

PASS / FAIL CHECK
IMPROVE THE DECISIONS
ABOUT THE MEASURES

CONSTELLATION SCREEN
ANALYZES IN DETAIL
THE QAM SIGNAL

CSO & CTB
DETAILED PARAMETERS
OF THE ANALOGUE SIGNAL

VOLTIMETER AND HUM
VOLTAGE AND NOISE POWER
PRESENT IN THE
CABLE NETWORK

EQUALIZER
VISUALIZE IMPEDANCE
DISTORTION
AND DECOUPLING

MULTIFUNCTION METERS

THE MOST PROFESSIONAL METERS IN THE MARKET

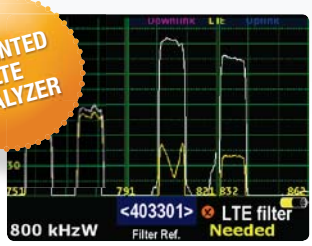
H60 & H45

Their multi function tools allow an automatic analysis of any TV standard, digital or analogue, whilst adding all the latest of digital signal processing.

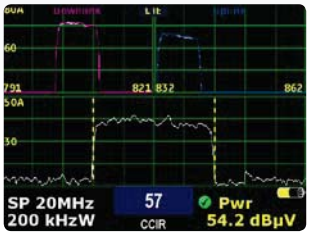
THOSE WHO DO NOT HAVE ENOUGH WITH THE BEST, DREAM AND FORESEE THE H60 ADVANCED

H60 FEATURES

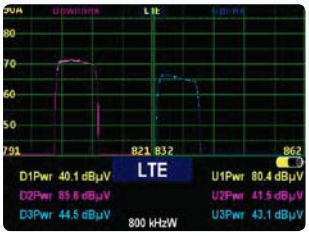
PATENTED LTE ANALYZER



CHECK LTE



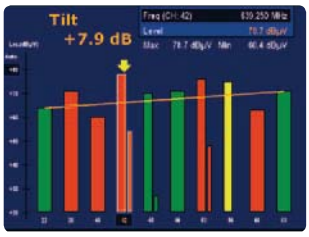
LTE vs TV



DOWNLINK-UPLINK

ECHOES AND CONSTELLATION ANALYSIS

REMOTE MONITORING VIA ETHERNET

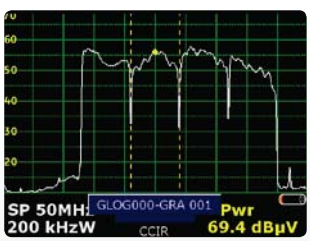


TILT

You can analyze the possible imbalances between the existent channels in a TV network.

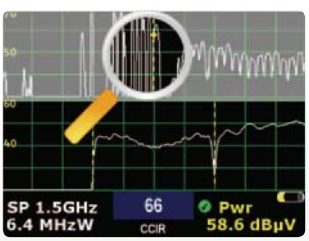
CTB/CSO & HUM

Numerical measurements (dB) to identify problems within a CATV network generated by active devices.



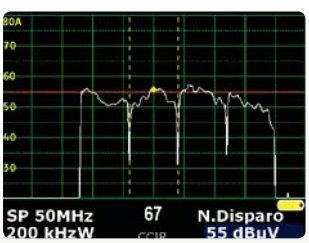
GRAPHS
OFF-LINE ANALYSIS

UP TO 100kHz SPAN
WE REACH
WHERE OTHERS CAN NOT



SPECTRUM ZOOM

Analyze a TV channel in detail without losing any info of the whole spectrum.



EVENT **TRIGGER**

Pulsed signals as Wifi or 4G/LTE are difficult to analyze in the frequency domain. This function makes this analysis easier.

MODELS AND ACCESSORIES

REF.	DESCRIPTION
599020	H45 COMPACT DVBT/C/S/S2, MPEG 4, DOLBY, CI
599022	H45 COMPACT DVBT/C/S/S2, MPEG 4, DOLBY, CI and FO
599023	H45 COMPACT DVBT/C/S/S2, MPEG 4, DOLBY, CI and Selective FO
599021	H45 COMPACT DVBT2/DVBT/C/S/S2, MPEG 4, DOLBY, CI
599024	H45 COMPACT DVBT2/DVBT/C/S/S2, MPEG 4, DOLBY, CI and FO
599025	H45 COMPACT DVBT2/DVBT/C/S/S2, MPEG 4, DOLBY, CI and Selective FO

REF.	DESCRIPTION
596003	H60 ADVANCE DVBT2 MPEG4,CI, 2.5 GHz
596004	H60 ADVANCE DVBT2 MPEG4,CI, 3,3 GHz and FO
596005	H60 ADVANCE DVBT2 MPEG4,CI, 3,3 GHz and Selective FO
596006	H60 ADVANCE DVBT2 MPEG4,CI, 3,3 GHz, FO, GPS and ETH
596007	H60 ADVANCE DVBT2 MPEG4,CI, 3,3 GHz, Selective FO and ETH

COMMON FEATURES TO THE DIFFERENT MODELS

OPTICAL INTERFACE *
THE MOST SUITABLE FOR TV SYSTEMS DISTRIBUTED OVER FO

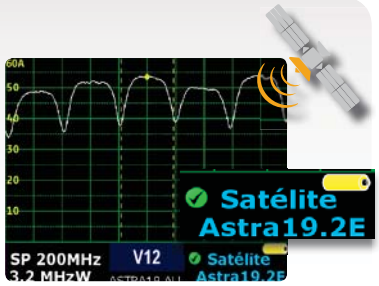
Measure FO power and TV quality parameters of the signals transmitted over the FO.

COMBO MODE
ALL THE INFORMATION IN JUST ONE GLANCE

Simultaneous visualization of the TV image (SD or HD), real-time spectrum and all the channel parameters.

SCAN & LOG
THE APPLICATION THAT WORKS FOR YOU

This function can make a frequency sweep test automatically, identifying and measuring any TV channel. When it has finished, the measures from all the TV channels are saved.



SATELLITE IDENTIFICATION
SIMPLE AND QUICK

When watching the spectrum, the meter can identify the satellite from the tunned frequency.

MEMORIES
SAVE AND LOAD ANY CHANNEL WITH JUST ONE CLICK

Save time using this function. You will be able to save and load easily any TV channel settings.

MACROMEASURES
AUTOMATIC ANALYSIS OF SEVERAL CHANNELS

Automatic and sequential recording of the measures and settings of the channels from a list of Memories.

It is a powerful tool to automatically analyse all the channels.

AUTOMATION OF MEASUREMENTS AND GENERATION OF REPORTS WITH HSUITE

Set of PC applications to manage all the info from the H60:

- ✓ Load measurements and graphs
- ✓ Generation of reports in different formats
- ✓ Online presentation from several organizations
- ✓ Creation and management of user channel plans
- ✓ Check Quality Marks configuration

TECHNICAL FEATURES

CATV METERS

FREQUENCY	
Range	5 MHz to 1002 MHz
Resolution	10 kHz
Tuner	Frequency or channel
INPUT	
Impedance	F type connector - 75Ω
SPECTRUM ANALYSER	
Span	2.5, 6.25, 12.5, 25, 62.5, 125, 250, 500 MHz & Full
Scale	5 & 10 dB/div
Reference Level (automatic or manual)	✓
RETURN CHANNEL SCAN	
Range	Selectable 5 to 42 MHz, 5 to 68 MHz, & 5 to 85 MHz
Mode	Peak, Average, Minimum and real time
DIGITAL MEASURES	
Demodulation	ITU-T J.83 standard Annex A/B/C
Constellation	16, 32, 64, 128 & 256 QAM, QPSK
Symbol Rate	2 to 6,9 MS/sec
QAL Technology (QAM Auto Lock)	Automatic detection of signal parameters and settings
DFE Filter	On / Off
Power	-30 to +60 dBmV
C/N	Up to 45 dB
MER	Up to 40 dB
Accuracy	±2 dB
Resolution	0,1 dB
Pre-BER & Post-BER (Annex B)	1.0E-3 to 1.0E-8
BER (Annex A/C)	1.0E-3 to 1.0E-8
CONSTELLATION	
Visualization	16, 32, 64, 128 & 256 QAM
Zoom option	✓
EQUALIZER	
Graph mode	✓
ANALOGUE MEASURES	
Level	-30 to +60 dBmV
V/A	Up to 30 dB
C/N	Up to 50 dB
Accuracy	±2 dB
Resolution	10 KHz
CSO/CTB	✓
CHANNEL PLANS	
Default channel plan	Up to 24 plans for difference regions
User channel plan (learning plan)	Up to 20 channel plans

SYSTEM SCAN	
Channels	User selectable zoom in all channels (analogue or digital)
Measures	C/N, BER & MER bar graphs
TILT	
Channels	From 1 to 16 or every channel (analogue and digital)
Selectable marks	✓
SIGNAL QUALITY PROFILES	
Default profiles	Headend, Fiber Nod, Trunk, Bridge, Line Ext, Tap, End Line, Ground, Modem/STB, Off Air
User configurable profiles	Up to 20 profiles
VOLTIMETER	
Range	9V to 150V
Accuracy	±1%
HUM	
Range	2 to 5%
Accuracy	±1%
SPEED TEST	**OPTION 593211**
DCHP state	✓
Connection state	✓
Ping delay	✓
Packet loss	✓
Downstream and upstream	Up to 20Mbps
SERVICE INFORMATION	**OPTION 593210**
Channel parameters	NIT, PAT, TSID, CBRT, number of services
Service parameters	SID, VID, AID, bitrate, codification type
CABLE MODEM (593103 & 593104)	
Modes	Docsis3.0/2.0/1.1/1.0/BPI/BPI+
Dowstream	Up to 8 channels (88-1002MHz)
Upstream	Up to 4 channels (ref. 599103 5-42MHz / ref. 599104 5-65MHz)
Connection state	DS and US frequency, DHCP, TOD, configurable file name, security level, DOCSIS version
Measures	Power level graph bars for DS and US channels, SNR, PreBER and PostBER of the selected channel
Test Throughput	IP modem, DS and US maximum speed, PING delays (real-time and average), packet loss, transfer speed
Modem emulator	Modem connection status, instantaneous speed and data size of the info transmitted through the modem

MULTIFUNCTION METERS

		H45	H60
GENERAL	Digital Processing Technology	✓	
	Languages	EN,ES,DE,FR,IT,PT,PL,RU	
	High Resolution Digital Screen	5″	5.7″
	All measures on-screen	✓	
	Combo mode (spectrum, measures and channel visualization simultaneously)	✓	
	Units: dBuV,dBmV, dBm, dBuV/m	✓	
	Quality Checkmarks	✓	
	Terrestrial Dynamic Range	60dB	
	Satellite Dynamic Range	55dB	
INTERFACES	Optical Receiver	OPT.	
	HDMI	✓	
	CAM	✓	
	SD	-	✓
	Ethernet Remote Control	-	OPT.
	GPS Tracking	-	OPT.
	USB	✓	
BANDS	Return (5-47MHz)	✓	
	Terrestrial (47-880MHz)	✓	
	Radio (88-110MHz)	✓	
	GSM (880-950MHz)	-	✓
	Satellite (950-2220MHz)	✓	
	Extended Spectrum (2,5-3,3GHz)	-	✓
	Continuous band 5MHz-3.3GHz (no gaps)	-	✓
MEASURES	Analogue (Level, C/N, V/A)	✓	
	CTB/CSO, HUM	-	✓
	Image Line	-	✓
	Digital (Power, C/N)	✓	
	DVB-T	✓	
	DVB-T2	OPT.	✓
	DVB-H	✓	
	DVB-C	✓	
	DVB-S	✓	
	DVB-S2	✓	
	TILT	-	✓

		H45	H60
ANALYZER	Real-time sweep	<10ms	
	Screen refresh rate	<100ms	
	Background noise representation	✓	
	min SPAN	5 MHz – 100 KHz	
	min RBW	100 KHz – 300 Hz	
	Variable VBW	✓	
	Vertical Reference Level	5, 10dB/div	1, 2, 5, 10dB/div
	BER Measure	-	✓
	HOLD (Max & Min)	✓	
	Marks	1	3
	Trigger	-	✓
	LTE Analyzer	✓	
	Satellite identification	✓	
	Spectrum zoom	-	✓
	Overload message	✓	
PROGRAMMED MEASURES	Storage capacity	Up to 30000 measures	
	Memories	✓	
	Macromeasures	✓	
	Datalogs	✓	
	Graphlogs	-	✓
	InstantLog	✓	
	Scan&Log	✓	
HSUITE	Measure management	✓	
	Graph management	-	✓
	Reports and export of data	✓	
	Channel plan management	✓	
	Quality profile management	✓	

Televes®

Provided by Mega Hertz 800-883-8839 info@go2mhz.com www.go2mhz.com

100% Designed, Developed & Manufactured in Televes Corporation

FI082014 CMP 06001120