


# H30D+ (QAM) sprectrum analyzer with ATSC 1.0 and DOCSIS 3.1

## All the functions you need, also in CATV cable systems

The H30D+ is a lightweight, compact and robust equipment that includes a full range of tools and functionalities to successfully perform installation, maintenance and troubleshooting tasks in both analogue networks and digital networks with ATSC, and QAM channels. It stands out for incorporating advanced DOCSIS 3.1 measurements, automatic monitoring of the desired channel, double-check connectivity and the information about a QAM channel program content, among other powerful functions.

Operating the meter is more flexible thanks to its multiscreen system: the user can manage it remotely and display its contents on their own mobile device (Android, iOS or PC). In addition, to make the use of the smartphone even more natural, a universal bracelet is provided for devices up to 6".

Just as the rest of the meters fully designed and manufactured in Televes Corporation, H30D+ takes advantage of the digital processing technology, and provides the user with a speed and mathematical accuracy equivalent to that of laboratory equipment.

| | |
|---|---|
| Ref. | 593981 |
| EAN13 | 8424450238066 |

| Other features | |
|---|---|
| Complement | Meter + Protective Sleeve + Smartphone Armband |

| Physical data | |
|---|---|
| Net weight | 1,600.00 g |
| Gross volume | 7.00 dm³ |
| Gross weight | 1,600.00 g |

| Packaging info | |
|---|---|
| Box | 1 pcs. |

## Highlights

- Professional RF signal analyzer: decoding and display of video and audio parameters of received ATSC 1.0 and QAM signals
- Multiscreen system with touch control: display the meter screen on a mobile device, and control the meter by touch gestures and buttons
- Wireless connectivity
- Real-time digital processing
- Light-weight handheld meter
- User-friendly interface
- DOCSIS 3.1
- With Wi-Fi / IPTV analyzers and HEVC display as options
- Automatic parameter detection: the H30+ automatically detects signal type (A/D) and parameters to be measured (constellation, symbol rate, etc)
- All measurements are carried out by pressing a single button equipped with Pass/Fail indicators to reduce installation errors

## Discover

**Differences between the H30+ and H30D+ models**

Within the H30+ and H30D+ range of meters we can find different models with specific functionalities depending on the needs of the cable installers. The comparative table compiling the most representative differences between them is detailed below:

| | | H30+ | H30D+ | H30D+ FULL |
|---|---|---|---|---|
| Frequency range | | 5 ... 1002 MHz | 5 ... 1220 MHz | 5 ... 1794 MHz |
| Screen | | 2.8” TFT 400 x 240 full color | 2.8” TFT 400 x 240 full color | 2.8” TFT 400 x 240 full color |
| Multi-screen with touch control on mobile device | | OK | OK | OK |
| Smartphone armband | | OK | OK | OK |
| Wirelesss connectivity | | OK | OK | OK |
| Ethernet interface | | OK | OK | OK |
| USB interface | | USB (A-type) | USB (A-type) | USB (A-type) |
| QAM digital measurements | | OK | OK | OK |
| ATSC 1.0 digital measurements | | OK | OK | OK |
| ATSC 3.0 digital measurements | | X | X | OK |
| DOCSIS 3.1 | | X | OK | OK |
| WiFi Analyzer | | OK(*) | OK(*) | OK |
| IPTV analyzer | | OK(*) | OK(*) | OK |

| | | | | |
|---|---|---|---|---|
| HEVC displaying | on the meter | OK(*) | OK(*) | OK |
| | on the mobile device | OK(*) | OK(*) | OK |
| MPEG service information | | OK | OK | OK |
| IP speed test | | OK | OK | OK |
| Long Term Monitoring | | OK | OK | OK |
| Management interface access (datalogs, channel plan...) | | Wireless / Ethernet cable | Wireless / Ethernet cable | Wireless / Ethernet cable |
| Dimensions | | 175x100x52 mm | 175x100x52 mm | 175x100x52 mm |
| Weight | | 529 g. | 633 g. | 633 g. |
| Color | | Black & Grey | Black & Orange | Black & Orange |

* Optional feature

## Features




**Multiscreen and remote control**

Controllable from any Android or iOS device or a PC with H30Suite

The H30D+ multiscreen system allows you to display the meter's screen on your smartphone or tablet to wirelessly control the meter or just for the sake of working with a larger screen.
The installer may wirelessly access the equipment at any time from anywhere in the installation (depending on the local network connection range), with the convenience of always using his/her own device.
Simply install the H30Suite App (ref. 100016) on your device and connect it to the Wi-Fi network generated by the meter (AP mode).




**Wireless connectivity**

Wireless access to the meter

Equipped with Wireless connectivity, the equipment allows secure access through an Android or iOS device, or a PC. The web management application H30Suite (ref. 100016) may be used to check and export stored measurements, access to quality profiles, meter settings cloning, meter registration through a friendlier interface or real-time consultation of the user manual.



**Rugged and Light Weight**

Total reliability

A unique dual injected rubber and polycarbonate plastic housing ensures the best protection and durability. Weighing only one pound, the H30D+ is comfortable to carry and use. You can put it in your pocket or hang it from its sturdy built-in grommets using the provided shoulder strap... you will hardly know it's there!




**Intuitive User Interface**

Reducing the learning curve

Easy to use one-level menu structure with very intuitive functions for increased usability, faster operation and maximum productivity. No function requires more than three successive button pushes to achieve the desired operation. It doesn't get any easier than this, you will fly through the functions without ever reading the user manual.




**Comprehensive Functionality**

Pass/Fail indicators

A full range of functionalities such as Single-channel measurements, Constellation diagram, Spectrum analyser, Service identification, Data logs, Channel plan auto-learning, and more.



**Accuracy and Speed**

Real-time digital processing

Designed to instantly obtain all the information about the signal in real time, it is a true milestone in field work. H30D+ provides the required accuracy and speed to detect minor transient radiation, or spurious signals that could affect the system during signal reception.

**100% Automatic**

Signal detection

Fully automatic, it detects the parameters of different modulations with no need for configuration. H30D+ will detect at once whether the input signal is analogue or digital, and will determine its constellation, symbol rate and other modulation parameters, providing an instant reading without any user intervention.




**Long Battery Life**

Up to 4 hours on a full charge

High quality Li-Ion batteries, in conjunction with our advanced low power consumption technology, provide enough juice for even the largest jobs. One hour of fast charging will provide almost three hours of extended operation.

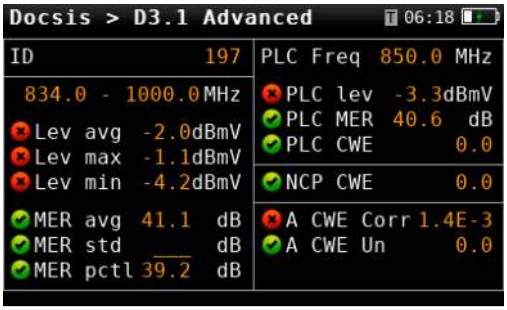


**Made in Televes**

Your Quality Warranty

The H30D+ is entirely designed by Gsertel, a company within Televes Corporation, where our team of experienced and highly qualified telecommunication engineers managed to integrate digital processing in a handheld unit of 1lb of weight. Each H30D+ includes more than 5,000 components and integrated circuits.

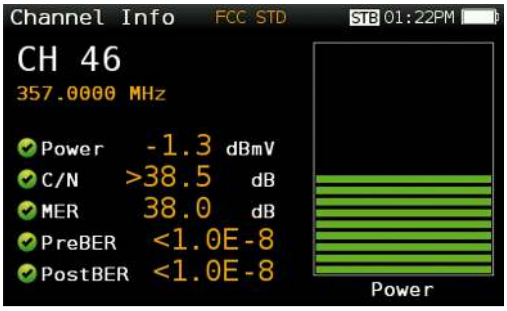
## Functionalities




**Advanced DOCSIS 3.1 Measurements**

Without missing a detail

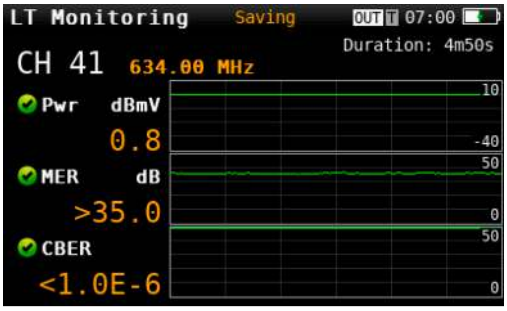
This function displays all the measurements for the DOCSIS OFDM channel. In addition to MER and level measurements, it also displays all the PLC and NCP measurements.




### Channel Information

The less the better

Sometimes, taking a quick glance at one channel is all you need. The advanced H30D+ single-channel measurement option automatically detects the channel type, displaying the audio and video levels, A/V and C/N for analogue signals, and power, C/N, and appropriate quality measures for each type of digital signal. All these measures are taken by means of one single button; at that point, all indicators will be activated and display the “Pass/Fail” condition based on the thresholds specified by the user. Easy-to-interpret results, even for junior technicians.




### LT Monitoring

Automatic monitoring of the desired channel

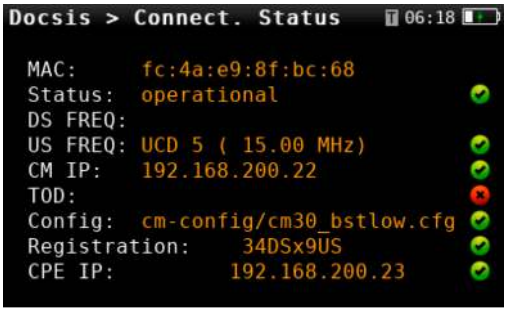
The H30D+ Long Term Monitoring Function allows the automatic monitoring of the selected channel. Once the time interval between two consecutive measurements has been selected, the H30D+ will automatically take all the measurements of the channel selected and store them in memory.




### Tilt Function

Always in balance

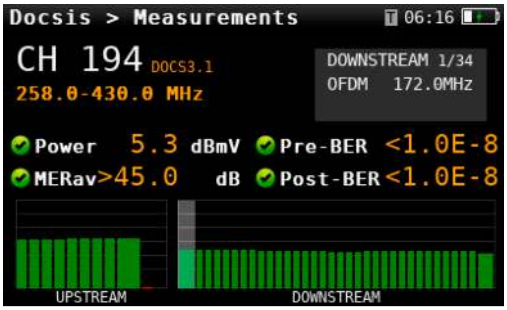
Get a quick view of your signal level differences over a specified frequency range so you can apply attenuation or equalization to adjust them. Take the meter to your farthest extents and see at a glance what carriers’ power levels are out by their red, yellow, and green colors. Any number between 2–12 analog, digital or DOCSIS channels can be measured using the tilt measurement, and you can even select which carriers are your reference points to determine the tilt between any of the channels included in the measurement.




### CMTS Synchronization Status

Synchronizing with the headend

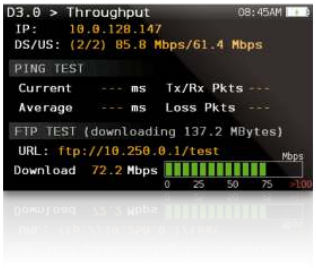
Obtain a step-by-step indication of a Pass/Fail test, as the modem finds, connects, and registers to a headend (CMTS), and also obtains critical parameters in the process. Confirm that the modem first finds the downstream channel and, right after that, the upstream channel. Later obtain the configuration as the DHCP address server, TOD server time, the complete configuration file and the registration information.




### Downstream and Upstream Measurements

At a glance

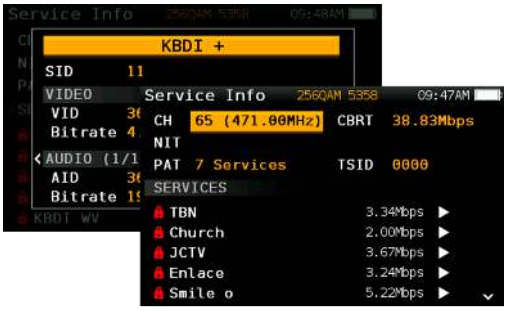
See a summary pass/fail view of up to 34 downstream (32 QAM + 2 OFDM) and 10 upstream channels (8 QAM + 2 OFDM) at once. Select one of the channels and see the critical measurements all on the same screen. Select from one of the factory configured or user created profiles to set the appropriate pass/fail thresholds. Get all the pertinent details at a glance for any given channel including the modulation, symbol rate, frequency, power, MER, and both the pre and post error correction Bit Error Rates.




### Throughput Test

Speedometer

This function measures the upstream and downstream rates of the DOCSIS network. The rate measurements are performed using an FTP server that must be configured by the user (URL, file, get/put, user, password). This feature shows the IP modem within the DOCSIS network and the maximum speed negotiated (DS/ US). When you start the speed test, the speed value is constantly updated.




### Service Info

Study MPEG details

Do you want to know what program content is on that QAM channel? The H30D+'s Service Info feature will tell you. In addition to the short description of the service, you will get the important parameters including the NIT, PAT, and TSID for the channel, and for the individual service you will get the SID and the PID, encode type, resolution, and bitrate for both the audio and video, all of which greatly help when troubleshooting your encoder configuration.




## System Scan

Monitored installation

Scan each existing analogue and digital channel in real time to determine the overall system frequency response. This function leverages the location-based thresholds to clearly show whether the signal levels meet the cable systems' specifications with green, yellow and red bars. This feature provides an easy-to-understand, real-time view of the system, including the BER and MER values of the selected channel.




## Voltmeter & Hum

Cover all your bases

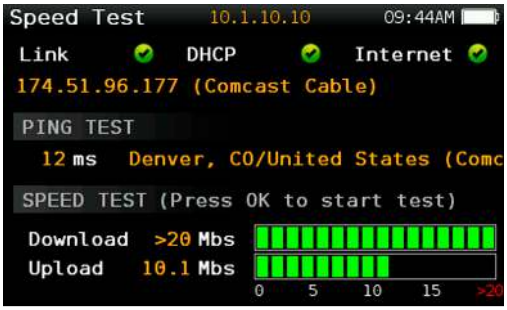
Don't want to worry about bringing a separate volt meter with you...? No problem, the H30D+ will do that too. The H30D+ will also give you a Hum percentage to help you diagnose those ground and power interference problems that may result from a defective power supply or faulty/overloaded power inserters.




## Reverse Path Ingress Scan

Maximum, average, peak

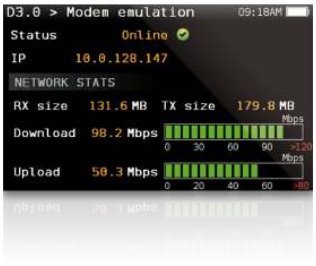
Help identify reverse path problems before your customers are affected. Poorly shielded coaxial cable and faulty terminations are important sources of ingress noise, which can easily add up in the return due to the large number of subscriber-generated signals that are sent back to the headend. The combined and amplified interference is often responsible for service disruption, so having a good reverse path ingress scan tool is always a must.




## IP Speed Test

Double-check connectivity

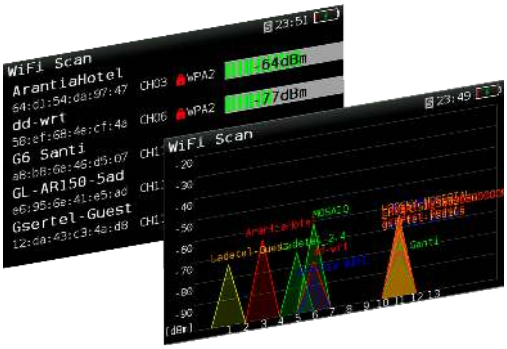
Need a quick check of your data network at the headend or at a customer's unit? The H30D+'s IP Speed Test allows you to check your basic network performance parameters, so you don't need to get your laptop out. This includes your upload and download speed, as well as your ping times and lost packets statistics.




### Modem Emulation

Building a bridge

This function sets the H30D+ to be used as a DOCSIS modem and to use it to give to another device a connection to the DOCSIS network via the H30D+'s Ethernet port. This feature shows the connection status of the modem as well as the instantaneous speed and the size of the data sent through the modem.

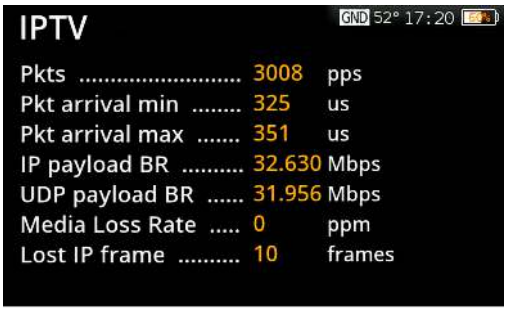



### Wi-Fi Analyser (*)

All bands (2.4 and 5 GHz)

This functionality allows a full analysis of the Wi-Fi band for the automatic detection of all the networks. Each of them is identified by name, and the power of the signal at the access point is also displayed. Two display modes are provided for the user to choose. The "list" mode provides a list of the detected networks with the associated data and power, while the "map" mode represents them on a dual-axis map: power vs. frequency.

(*) Optional feature: Ref. 593250.




### Services and IPTV Analyzer (*)

IPTV and RF services information

Allows the demodulation and analysis of IPTV streams (both Unicast and Multicast), not only through video display but also by displaying the total bitrate and bitrate for each service. The relevant information for each service is already given: SID, VPID, AID, video profile, bit rate for both audio and video.
In addition, this option completes the RF measurements since all this information by service is analyzed as well for this type of signals.
For IPTV signals, specific protocol measurements (UDP/RTP) are also analyzed, such as UDP format, Media Loss Rate, Lost IP frames.

(*) Optional feature: Ref. 593251.




**HEVC display on the meter (*)**

and also on your mobile device

This functionality supports HEVC H.265 new compression format and allows the display of video signals with a maximum Full HD resolution (1920 x 1080). Information can be displayed both on the meter screen* or on the mobile device (multiscreen mode) as long as your hardware is H.265 compatible (usually a smartphone, tablet or PC).

(*) Optional feature: Ref. 593252.

# Technical specifications

**Ref. 593981**

| | | | | |
|---|---|---|---|---|
| Screen | | Color TFT | | |
| Screen size | in | 2.8 | | |
| Battery power | Vdc | 7.2 | | |
| Battery capacity | mAh | 2300 | | |
| Battery range | h | 4 | | |
| Operating temperature | °F | 23 ... 113 | | |
| PSU input voltage | Vac | 100 ... 240 | | |
| Mains frequency | | 50 Hz / 60 Hz | | |
| PSU output voltage | Vdc | 12 | | |
| Max PSU output current | A | 2 | | |
| RF connectors | | "F" female | | |
| Ethernet port | | Gigabit Ethernet (10/100/1000BASE-T) | | |
| USB port | | USB 2.0 | | |
| Storage capacity | MB | 400 | | |
| Frequency range | MHz | 5 ... 1218 | | |
| Measurements resolution | kHz | 125 | | |
| Bluetooth | | Yes | | |
| Ethernet | | Yes | | |
| Scale (dB/div) | | 10 / 5 | | |
| Reference level | | Automatic / Manual | | |
| Standards | | DVB-C | ATSC 1.0 | Analog Measures |
| Modulation format | | 128QAM / 16QAM / 256QAM / 32QAM / 64QAM / QPSK | -- | -- |
| Digital channel format (ITU-T J.83) | | Annex A / Annex B / Annex C | -- | -- |
| Signal level | dBmV | -15 ... 50 | -15 ... 50 | -15 ... 50 |
| C/N | dB | < 45 | -- | < 54 |
| V/A | dB | -- | -- | < 30 |
| MER | dB | < 45 | < 38 | -- |
| Pre-BER | | 1.0E-3 – 1.0E-8 | 9.9E-2 – 1.0E-6 | -- |
| Post-BER | | 1.0E-3 – 1.0E-8 | 1.0E-3 – 1.0E-8 | -- |
| BER | | 1.0E-3 – 1.0E-8 | -- | -- |
| Constellation | | Yes | Yes | -- |
| TILT | | Yes | | |
| Voltmeter | | Yes | | |
| IP speed test | | Yes | | |
| Upload/Download speeds | Mbps | 500 | | |
| Full HD display (MPEG2/MPEG4) | | Yes | | |
| MPEG info | | Yes | | |