

H30Crystal sprectrum analyzer

All the functions you need, also in fiber optics

The H30Crystal expands H30 series of portable and compact meters by bringing strong efficiency in optic measurements. Its ability to analyze fiber-optic networks, along with all the features of previous models, makes this equipment a versatile and comprehensive tool for today's professional technicians, who are used to working with several telecommunication network technologies. In addition, it is supplied with a set of adapters and fiber optic patch cords for easy measurement by the installer.

H30Crystal is also a scalable and multi-standard equipment designed to measure DVB-S/S2, DVB-T/T2, DVB-C, analogue channels and the return path. Easily-downloadable software licences will let you update your meter with new options. These features, together with its wide range of tools and functionalities, make the meter a multifunctional equipment ideal for installations, maintenance and troubleshooting of coaxial and fiber-optic networks. All of this in just one device!

To ensure good outdoor performance, a ports protector is included to prevent dust accumulation, as well as water leaks on the connectors. Additionally, 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, a universal armband for mobile devices up to 6" is included, so that using a smartphone is even more comfortable.

Just as the rest of the meters fully designed and manufactured in Televes Corporation, H30Crystal takes advantage of the digital processing technology, and provides the user with a speed and mathematical accuracy equivalent to that of laboratory equipment.

Ref.	593601
Logical ref.	H30C-S2T
EAN13	8424450237670

Other features	
Complement	Meter + Smartphone Armband
Standards included	DVB-S/S2 + DVB-T + F.O.

Packaging info	
Box	1 pcs.

Physical data	
Net weight	1,200.00 g
Gross volume	6.28 dm^3
Gross weight	1,500.00 g
Width	95.00 mm
Height	206.00 mm
Depth	53.00 mm
Main product weight	550.00 g

Highlights

- Accurate power and optical attenuation measurement
- Multistandard: DVB-S/S2, DVB-T/T2, DVB-C, analogue channels and return path
- Multiscreen system with touch control: display the meter screen on a mobil device, and control the meter by touch gestures and buttons
- WiFi and Bluetooth connectivity
- WideBand LNB supported
- Guided satellite pointing
- Real-time digital processing
- Light-weight handheld meter
- User friendly interface
- Option to expand through Wi-Fi analyser, IPTV and HEVC display both on the meter and on the mobile device
- All measurements are carried out by pressing a single button equipped with Pass/Fail indicators to reduce installation errors

Discover

Meter from H30 series: How to choose the most convenient model?

The H30 series consists of different customizable multistandard meters, all of them designed to carry out installation, maintenance and monitoring of telecommunications networks. Each model stands out for offering new functionalities, while preserving all the advantages of the previous model.
Through the following comparative table, it is possible to choose the most suitable meter model for each professional:

		H30FLEX	H30EVOLUTION	H30CRYSTAL
Multi-standard customizable		OK	OK	OK

Frequency range	Return P.: 5-50 MHz	X	X	OK
	Terrestrial: 50-880 MHz	OK	OK	OK
	Satellite: 250-2400 MHz	OK (up to 2200MHz)	OK	OK
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		X	OK	OK
Smartphone armband		X	OK	OK
2,4 / 5GHz WiFi connectivity		X	OK	OK
WiFi analyzator		X	OK(*)	OK(*)
Bluetooth connectivity		X	OK	OK
Ethernet interface		OK	OK	OK
USB interface		USB (A-type)	USB (A-type)	USB (A-type)
Optical measures		X	X	OK
Guided satellite pointing		X	OK	OK
IPTV analyzator		X	OK(*)	OK(*)
LNB Wideband compatible		X	OK	OK
HEVC displaying	on the meter	X	X	OK(*)
	on the mobile device	X	OK(*)	OK(*)
Terrestrial input level to 120dBÎ¼V		OK(**)	OK(**)	OK(**)
dCSS compatible		OK(**)	OK(**)	OK(**)
Management interface access (datalogs, channel plan...)		Cable Ethernet	Wireless (WiFi/Bluetooth) Ethernet cable	Wireless (WiFi/Bluetooth) Ethernet cable
Dimensions		175x100x52 mm	175x100x52 mm	175x100x52 mm
Weight		510 g.	510 g.	550 g.
Color		Black & White	Black & Grey	Light & dark grey

* According to reference
** Free activation of the options with the meter registration

Features



Multiscreen and remote control

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

The H30Crystal 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).



Multi Standard

Fully configurable equipment to meet your needs

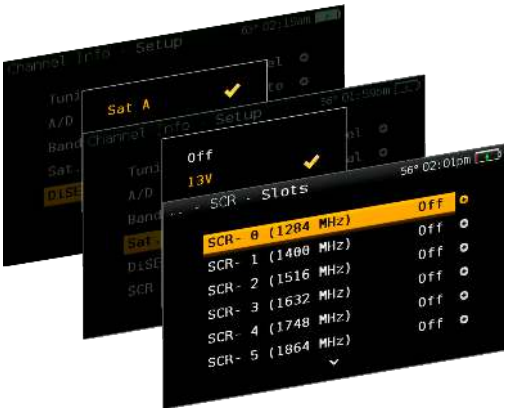
H30Crystal is fully prepared to meet the specific needs of each individual user. It is a multi-standard equipment, ready to take measurements on the satellite band, but also on the terrestrial band channels. In order to meet the changing needs of individual users, the equipment allows them to easily add new options, with no need to send the meter back to the factory.



Wi-Fi and Bluetooth connectivity

Wireless access to the meter

Equipped with 2.4/5 GHz Wi-Fi and Bluetooth, the equipment allows a 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.



Ready to Capture

signal from any satellite

H30Crystal allows you to configure the parameters required for the reception of your satellite signal. To do this, H30Crystal allows pre-amplifier powering, and configuration of both DiSEqC and SCR parameters.



Interactive User Interface

Optimize the learning curve

Scrolling through the menu is now very easy, thanks to its single-level structure, which includes all the functions in a very intuitive way: better utility, higher operation speed, and maximum productivity. No function requires more than three successive button pushes to achieve the desired operation. You will not find any easier-to-use device, and will be able to surf the different functions with no need for a 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. H30Crystal 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. H30Crystal 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.



Rugged and Light-Weigh

Absolute reliability

Its exclusive casing made of double-injection rubber and polycarbonate plastic guarantees protection and durability. Weighing only one pound, H30Crystal is convenient to carry and use. You can slip it in your pocket or use its strap around your shoulder... You will barely notice it is there!



Made in Televes

Your Quality Warranty

The H30Crystal is entirely designed by Gsertel, 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 H30Crystal includes more than 5,000 components and integrated circuits.

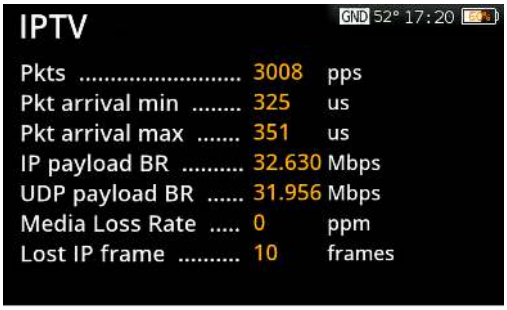
Functionalities



Optical measurements

Accurate analysis for high-capacity networks

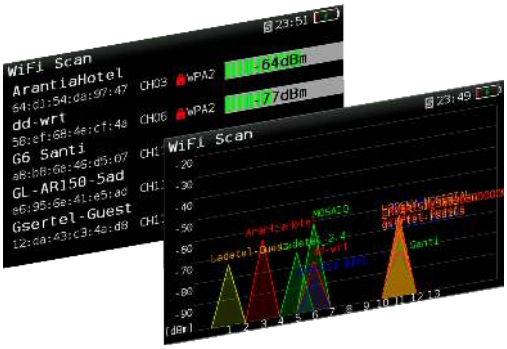
This equipment is fitted with an optical receiver (selective or non-selective options) allowing to measure power and attenuation at wavelengths of 1310nm, 1490nm and 1550nm. Combining the selective option with the triple-light generator (OPS3L) is the right choice to certify many optical infrastructures.
The optical connector is SC/APC and the equipment comes with a kit including optical accessories making it more flexible with other types of connections.



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 analysed as well for this type of signals.
For IPTV signals, specific protocol measurements (UDP/RTP) are also analysed, such as UDP format, Media Loss Rate, Lost IP frames.
(*) Optional feature: Ref. 593251



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



Measuring return path

From 5 MHz

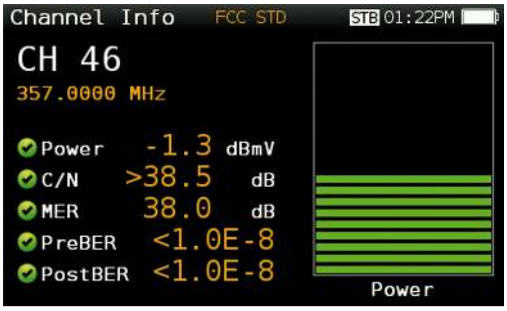
The capacity of the meter to measure the backwards channel from 5 MHz is very useful for cable installation technicians. By displaying the signal in the spectrum, measuring power and C/N, it is possible to ensure a good status and quality of the upload data transmitted on this bandwidth.



Pass/Fail Indicators

Easy decision-making

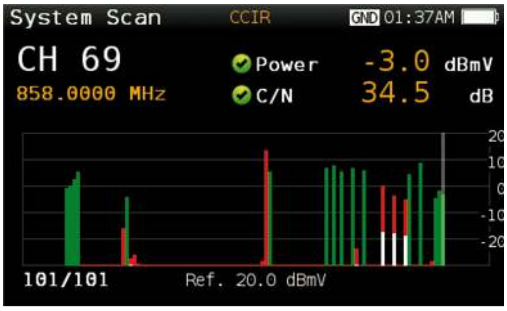
Reduce installation mistakes with the on-screen Pass/Fail indicators, a graphical tool that helps and speeds up the interpretation of measurement results. Different thresholds are available depending on the network area to be analysed: headend, multi-band amplifiers, bridging connection, connection records, user home, etc. Besides the pre-set values, you will be able to customize your own threshold values.



Channel Information

The less the better

Sometimes, taking a quick glance at one channel is all you need. The advanced H30Crystal 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.



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.



Spectrum Analyser

From 5MHz to "full span“

H30Crystal spectrum analyser provides a value range of 5, 10, 20, 50, 100, 200, 500 MHz and Full, as well as a reference level auto-adjust feature. Real-time processing speeds ensure the capture of any signal incidents. You will be surprised by the accuracy and the level of detail provided by this ultra-portable pocket spectrum analyser. The ultimate tool for identifying and localising noise, interference, radiation, and any other signals that may be affecting the quality of the television signal distribution service.



Guided satellite pointing

LNB self-configuration

This functionality speeds up the dish pointing work. The meter has a typical satellite and a stable transponder according to the regional zone previouly set, and it is self-configurated for the LNB connection. In addition, a sound indicator can be activated in order to audibly guide the user in the satellite dish pointing.
The reference satellite can be manually changed and start a new pointing.



Wideband LNB compatible

From 250 to 2300 MHz

This functionality for DVB-S/S2 allows the complete analysis of a satellite channel in any frequency within the 250 MHz to 2300 MHz range. Thus, the meter can be directly connected to any output of a LNB Wideband (2 outputs: Vertical and Horizontal)



MPEG

MPEG video and detailed information

Do you wish to know the contents offered on a DIGITAL channel? H30Crystal function MPEG will tell you. In addition to channel services display, you will get their key parameters: Service name, PID, resolution, audio types and figures, and NIT. A valuable help when troubleshooting your encoder configuration.



HEVC display on the meter (*)

and also on your mobile device

This functionality supports HEVC H.265 new compression format and allows to display 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 function: Ref. 593252



Constellation Diagram

Fine-tune your digitals

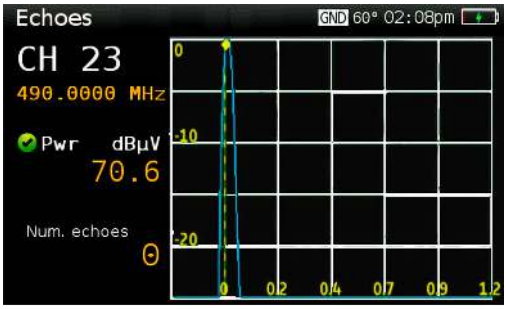
Constellation analysis is essential for determining the quality of digital signals. Constellation diagrams help detecting noise, jitter, interference and signal saturation, and all the variables that could impact signal quality, eventually leading to service suspension. By visually inspecting the size and shape of the dots in the constellation matrix, the technician will be able to easily identify the nature of the problem



Capture Plan

Custom channel plans

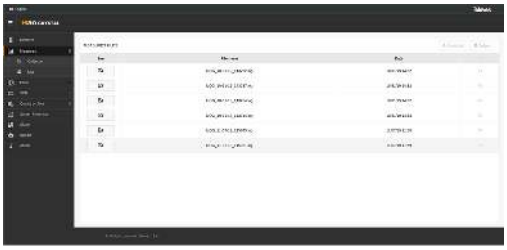
Identify the channels in your distribution with the ultra-fast Capture Plan function, and from there build your own channel plan containing only the channels you are interested in. Furthermore, each channel will be displayed on a bar chart with the appropriate colour based on the selected quality threshold.



Echos

Optimal signal reception

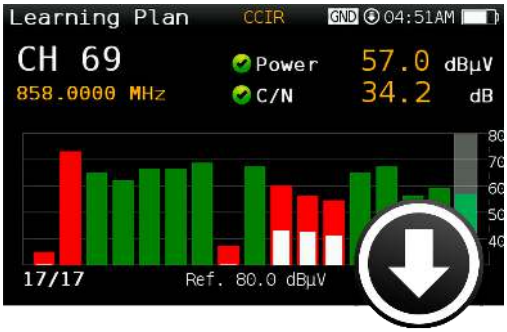
In terms of terrestial signal reception, controlling the absence of any echoes that could jeopardize reception is crucial. H30Crystal displays the echoes of the received signal, allowing the installer to minimize them for optimal signal reception.



Datalogs

Save and download

While you are taking measurements or looking for possible problems, you can save sample signal parameters for further in-depth analysis or just for record and use in your reports. It can also prove to be a useful tool for training purposes.



Always updated

Automatic detection of new software versions

The meter automatically detects if there is a new software version when it connects to the internet (WiFi, Ethernet). To notify that new software is available, an icon in the upper right part is activated without interrupting the user's work. The system update can be accessed on the settings menu.
If the meter is not connected to the internet, it can also be updated using a PC (USB port) where the software version was previously downloaded.

Technical specifications

Ref. 593601

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			
Number of Gigabit Ethernet ports (10/100/1000BASE-T)		1			
Storage capacity	MB	400			
Frequency range	MHz	50 ... 2200			
Measurements resolution	kHz	125			
Bluetooth		Yes			
Ethernet		Yes			
Scale (dB/div)		10 / 5			
Reference level		Automatic / Manual			
Standards		DVB-T	DVB-S	DVB-S2	Analog Measures
Modulation format		16QAM / 64QAM / QPSK	QPSK	8PSK / QPSK	--
Signal level	dBmV	-15 ... 50	-15 ... 50	-15 ... 50	-35 ... 65
C/N	dB	< 40	< 20	< 20	< 45
V/A	dB	--	--	--	< 30
MER	dB	< 35	< 20	< 20	--
CBER		9.9E-2 – 1.0E-6	9.9E-2 – 1.0E-6	--	--
VBER		1.0E-3 – 1.0E-8	1.0E-4 – 1.0E-8	--	--
LDPCBER		--	--	9.9E-2 – 1.0E-6	--
BCHBER		--	--	9.9E-2 – 1.0E-8	--
Link margin	dB	--	--	< 10	--
Echoes		Yes	--	--	--
Constellation		Yes	Yes	Yes	--
Type of FO		No selective OF			
Full HD display (MPEG2/MPEG4)		Yes			
4K display		Yes			
Powering per preamps	Vdc	13 ... 24			
Max. current preamps	mA	140 ... 475			
Powering LNB	Vdc	13 ... 18			
Max current for LNB	mA	370 ... 475			
LNB tone (22KHz)		Yes			
DiSEqC-commands		Yes			