

Televés®



30FLEX

**Refs. 593301, 593302
593303, 593304**

EN Digital processing handheld DVB Meter / Analyzer

Instruction Manual

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Safety requirements

● Product inspection

- Inspect the equipment for shipping damage. Should any damage be discovered, immediately file a claim with the carrier.

● Read and Follow All Instructions

- All the safety and operating instructions should be read prior to and followed while operating this product.

● Cleaning

- Follow the cleaning instructions contained in the Maintenance section of this manual.

● Attachments

- Do not use attachments that are not approved by the product manufacturer.

● Water and Moisture

- This product is weather resistant but is not submersible.

● Power Sources

- This product should be operated only from the type of power source specified.

● Grounding or Polarization

- Do not bypass or defeat electrical plug polarization or grounding. Doing so will violate the warranty and may pose a risk of fire or electrocution.

● Wire Protection

- Ensure all connected wiring is routed correctly to avoid damage including pinching, excessive bends, or compression.

● Electrical Supply, Grounding, and Surge Protection

- Ensure that all local or national electrical codes are followed.

● Power Lines

- Always use caution and avoid operating this or any connected equipment near uninsulated power lines or any other hazards.

● Servicing

- There are no user serviceable parts except the battery. Do not attempt to service this product or remove covers other than the battery cover. Refer all servicing to qualified service personnel. Follow the instructions in this manual when replacing the battery.

● Heat

- The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

● Maximum in the power connector

- Ensure that the voltage applied to the power connector does not exceed 15V. Higher voltages could damage the equipment

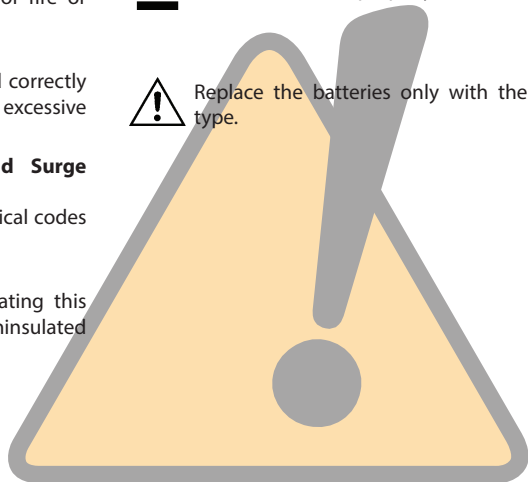
Symbols and safety labels



Recycle or dispose of used electrical and electronic devices properly.



Replace the batteries only with the same type.



Overview

Introducing the H30FLEX.

New from Televés, a go-to meter designed with the needs of a DVB installer in mind.

The **H30FLEX** is a light weight, rugged unit, packed with all the features needed to install and troubleshoot a television system using DVB-S/S2, DVB-T/T2 and DVB-C digital modulation as well as analog signals.

Available for the first time in such a portable and affordable package, its real time digital processing engine gives the installers a great precision measurements needed in today's fulfilment environment.



Key Features

- **User friendly**, handheld DVB meter.
- Complete portfolio of Analog/Digital measurements with easy-to-read **pass/fail indicators**.
- **Quick and easy to use interface** with features such as Channel measurements, System Scans, Constellation Diagram, Spectrum Analyzer, Echoes, Datalogger, and more.
- Rugged, light weight, fully automatic, fast, and accurate.
- **Easy updates**.
- **1 GHz spectrum range** with selectable span.
- **PASS/FAIL Indicators**: Icons indicate if a measurement is good, bad, or in the warning zone for quick and easy status checks. Reduce installer entry errors and improve decision making.
- LNB powering, and SCR and DiSEqC parameters setup
- MPEG image visualization

General Specifications

Display	2.8" TFT 400 x 240 full colour
Weight	510g (12.12lb)
Dimensions	175 x 100 x 52 mm / 6.9 x 3.9 x 2 in (H x W x D)
AC Adaptor	Input: 100-240V~ 50-60Hz Output: 12VDC, 2A
Battery	Lilon smart battery (7.2VDC, 2300mAh)
Operating Time	Up to 4 hours
Operating Temperature	23°F to 104°F (-5°C to 45°C)
Storage Temperature	-4°F to 158°F (-20°C to 70°C)
Humidity	5% to 95% non-condensing
Ruggedness	Survives 1 m (3 ft) drop to concrete on all sides
Communication Interfaces	USB 2.0 to download Datalogs and software updates
Storage	400 MB (internal) for measurements
Power up time	< 10 seconds

Technical Specifications

Frequency	
Range	5 - 880 MHz and 950 - 2200 MHz
Resolution	125 kHz
Tuning	Frequency or channel
Input	
Impedance	75Ω F-type connector
Spectrum Analyzer	
Span	5, 10, 20, 50, 100, 200, 500 and Full span
Scale	5 and 10 dB/div
Auto and manual reference level	✓
Reverse Path Ingress Scan	
Range	Selectable 5 to 42MHz, 5 to 68MHz, and 5 to 85MHz
Mode	Peak, Average, Min, and Real-time
Digital Measurements DVB-T (ref.593301, 593302, 593304 and opc.593231)	
MPEG image	✓
Modulations	CFDM (QPSK, 16QAM, 64QAM)
Power	45-110dBuV (25-120dBuV opt.593235)
CBER	9.9E-2 - 1.0E-6
VBER	1.0E-3 - 1.0E-8
MER	Up to 35dB
C/N	Auto
Echoes	✓
Constellation	✓
Digital Measurements DVB-T2 (ref.593302, 593304 and opc.593232)	
MPEG image	✓
Modulations	COFDM (QPSK, 16QAM, 64QAM and 256QAM)
Power	45-110dBuV (25-120dBuV opt.593235)
LDPCBER	9.9E-2 - 1.0E-6
BCHBER	1.0E-3 - 1.0E-8
Link Margin	Up to 30dB
MER	Up to 35dB
C/N	Auto
Echoes	✓
Constellation	✓
Digital Measurements DVB-C (ref.593303, 593304 and opc.593233)	
MPEG image	✓
Modulations	16QAM, 32QAM, 64QAM, 128QAM and 256QAM
Power	45-110dBuV (25-120dBuV opt.593235)
CBER	1.2E-2 - 1.0E-8
MER	Up to 38dB
C/N	Auto
Constellation	✓
Digital Measurements (DVB-S)	

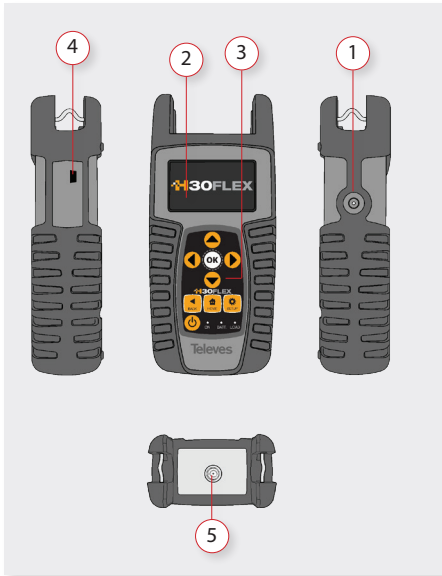
MPEG image	✓
Power	45-110dBuV (25-120dBuV opt.593235)
CBER	9.9E-2 - 1.0E-6
VBER	1.0E-4 - 1.0E-8
MER	Up to 20dB
C/N	Auto
Constellation	✓
Digital Measurements (DVB-S)	
MPEG image	✓
Modulations	QPSK, 8PSK
Power	45-110dBuV (25-120dBuV opt.593235)
Link Margin	Up to 10dB
MER	Up to 20dB
LDPCBER	9.9E-2 - 1.0E-6
BCHBER	9.9E-2 - 1.0E-8
Constellation	✓
Analog Measurements	
Level	25 - 125dBuV
V/A	✓
C/N	✓
Features	
Terrestrial channel	CCIR, CCIR + LTE, OIRT, KBW, FCC, DAB, SIM
Satellite channel plans	68E INTEL C, 68E INTEL, 42E TURK, 39E HELLAS, 33E EUTEL, 28E EUTEL, 28E ASTRA, 26E BADR, 25E EUTEL, 23E ASTRA, 21E EUTEL, 19E ASTRA, 16E EUTEL, 13E HOTB, 10E EUTEL C, 10 EUTEL, 9E EUTEL, 7E EUTEL, 4E ASTRA, 1W THORS, 1W THOR6, 5W EUTELC, 5W EUTEL, 7W NILE, 30W HISPAN, 48W AMZC, 48W AMAZ, SIM.
User channel plans	✓
Units	dBuV, dBmV, dBm
LNB powering	13, 18Vdc
LNB tone	22KHz
SCR (EN 50494) dCSS (EN 50607)	✓ Opt.593234
DiSEqC	✓

EN

Specifications are subject to change without notice.

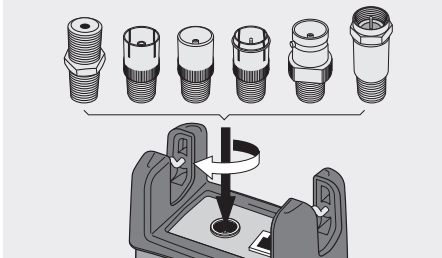
Description of equipment components

Connectors and controls








1. External power connector (12VDC).
2. LCD display.
3. Keyboard and LED indicators
4. USB connector
5. RF F-connector (see options below).

F-connector options



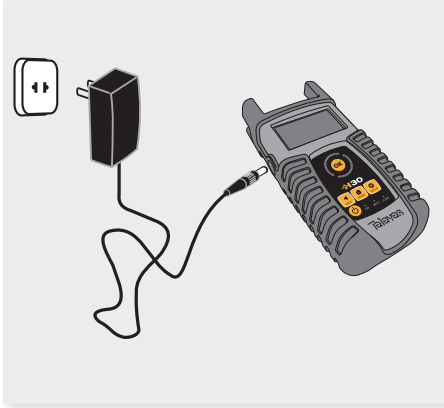
Keyboard



1.  **Device On/Off button:** To turn the equipment off, press and hold for approximately 3 seconds.
2.  **Back button:** Return to the previous menu or close a parameter entry window.
3.  **Home button:** Return to the main menu.
4. **Navigation buttons:** Used to scroll through options.
5.  **OK Button:** To confirm selection.
6.  **Setup button:** Parameter window for the current function.
7. **LED Load:** Indicates if the equipment is powering an external load.
8. **LED Charging Battery:** Indicates if the battery is charging.
9. **LED Power ON:** Illuminated when the equipment is on.

Power supply

A DC adapter is provided to power and charge the meter. Plug the adapter into a properly grounded electrical supply and the power connector on the side of the unit.








When external power is supplied, the battery management system automatically controls the charging process.

A battery icon indicates the charge status of the battery.

When the battery is fully charged, the battery icon is completely filled. As the battery discharges, the amount the icon is filled decreases in steps.

The icon shows 5 states representing the approximate battery charge:

-  - Battery charge less than 5%.
-  - Battery charge between 5% and 25%.
-  - Battery charge between 25% and 50%.
-  - Battery charge between 50% and 75%.
-  - Battery charge greater than 75%.

From a fully discharged state, a full charge takes approximately 8 hours and a 3 hour charge will provide approximately a 75% charge.

The charge management system will detect various conditions preventing charging, such as a battery that is over a safe temperature.

EN

Battery Recommendations

To maximize battery life:

- ▶ Avoid fully discharging the battery.
- ▶ The battery should always be charged with the battery pack attached to the device and using the supplied DC adapter or applying a constant voltage within the specified range (12-15VDC).
- ▶ For long term storage, keep the unit at room temperature, or about 25° C. Start with a charged battery and re-charge the battery every 2 to 3 months.

Product operation



1. Channel Info

Analog and digital channels are very different in terms of signal content and power distribution and thus require the advanced SLM techniques provided in the Televés **H30FLEX**.

In analog mode, video and audio levels, V/A and Carrier to Noise (C/N) are measured.

In digital mode measurements depend on the modulation:

DVB-S: Power, C/N, MER, CBER, VBER

DVB-S2: Power, C/N, MER, LDPCBER, BCHBER

DVB-T (Ref. 593301, 593302, 593304 and Opt. 593231): Power, C/N, MER, CBER, VBER

DVB-T2 (Ref. 593302, 593304 and Opt. 593232): Power, C/N, Link Margin, LDPCBER, BCHBER

DVB-C (Ref. 593303, 593304 and Opt. 593233): Power, C/N, CBER, MER


1.1. Main window

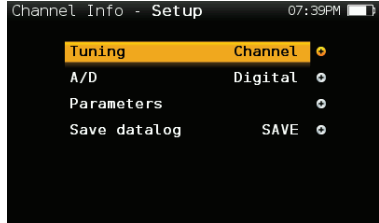
Below is a capture of a Channel Info window with a brief explanation of its features.

The screenshot shows the Channel Info window with the following callouts:

- Channel Change using:** Indicated by a double arrow icon.
- Frequency:** Points to the frequency display showing 786.0000 MHz.
- Channel plan:** Points to the FCC STD indicator.
- List of measurements with pass/fail indicators:** Points to the list of metrics: Power (-2.8 dBmV), C/N (41.6 dB), MER (34.4 dB), and CBER (<math><1.0E-8</math>). Each has a green checkmark.
- Bar graph of main measurement:** Points to the Power bar graph, which is green.

1.2. Setup

Press  to change the Channel Info options.



- **Tuning:** Channel, Frequency
- **A/D:** Auto, Analog, Digital
- **Band:** Ter, Sat
- **LNB**
- **Save datalog:** Saves the current measurements. You can see the datalogs using the remote control application.



2. Spectrum

Real-time processing speeds ensure capture of any fast, intermittent plant impairments.

Due to the accuracy and level of detail provided by this spectrum analyzer, the **H30FLEX** is the ideal tool for identifying and locating noise, interference, ingress and other waveforms that may be affecting cable services quality.

2.1. Main window

Below is a capture of a Spectrum window with a brief explanation of its features:

Selected channel
Change using [Left] [Right]

Span
User can change it using [BACK] (+) or [OK] (-)

List of measurements
with pass/fail indicators

Reference level Change
[Up] [Down]

Spectrum CH 60
786.0000 MHz
Span: 25MHz
01:49AM

Measurements:
Pwr dBmV: -1.7
C/N dB: 38.9

- **Band:** Terr, Sat
- **LNB**
- **Save datalog:** Saves the current scan measurements. You can see the datalogs using the remote control application.



3. MPEG

The **H30FLEX**'s MPEG feature will show the image of the selected service.

In addition, you'll get the important parameters including the NIT (Network Information Table) of the channel. And for each individual service you'll get the SID and the VID (Video Id)/AID (Audio Id), and encode type all of which greatly help when trouble shooting your encoder configuration.

2.2. Setup

Press  to change Spectrum options.

Spectrum - Setup 03:45AM

- Span 12.5MHz
- dB/div 10dB/div
- Tuning Channel
- A/D Auto
- Ref. Level Auto
- Save datalog

- **Span:** 5MHz, 10MHz, 20MHz, 50MHz, 100MHz, 200MHz, 500MHz, Full.
- Set the span of the spectrum. To easily change the span, use the **OK** Button to decrease the span and the **Back** Button to increase the span.
- **Ref. Level:** Select the reference level of the spectrum graph
- **dB/div:** 5 dB/div, 10 dB/div
- **Tuning:** Channel, Frequency
- **A/D:** Auto, Analog, Digital.

3.1. Main window

Below is a capture of a MPEG Info window with a brief explanation of its features:

Selected channel
Change using [Left] [Right]

MPEG CUSTOMB 11:00PM

Press OK button to see the services list



4. System Scan

This function scans the selected channel plan and detects every existing analog and digital channel in real time to determine the overall frequency response of the system.

The scan measurement leverages the location based thresholds to clearly show whether or not signal levels comply with the cable system's specifications with their green, yellow and red bars. This gives an easy-to-understand real-time view of the system, including the BER and MER values of the selected channel.


4.1. Main window

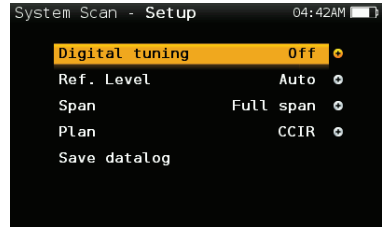
Below is a capture of a System Scan window with a brief explanation of its features:

The screenshot shows the 'System Scan' window with the following callouts:

- Channel Change using:** Indicated by a double-headed arrow icon.
- Frequency:** Points to the '858.0000 MHz' display.
- Channel plan:** Points to the 'CCIR' display.
- Measurements of the selected channel with pass/fail indicators:** Points to the 'Power -3.0 dBmV' and 'C/N 34.5 dB' displays.
- Bar graph representing all the found channels. Color according to checkmarks:** Points to the bar graph at the bottom of the window.

4.2. Setup

Press  to change the System Scan options.



- **Digital tuning:** If it is ON, allows to see MER and CBER measurements when a digital channel is selected and the user presses Ok button.
- **Ref. Level:** Select the reference level of the bar graph
- **Span:** Select the number of channels showed in the bar graph
- **Band:** Terr, Sat
- **LNB**
- **Save datalog:** Saves the current scan measurements. You can see the datalogs using the remote control application



5. Satellite Test

This feature checks that the input signal correspond to the selected channel. To do that, this feature makes automatically all the digital measurements in the channels selected by the user.

This feature extracts from these channels all the information needed to identify the satellite.

5.1. Main window

Selected channel
Change using

List of measurements
with pass/fail indicators
Press OK to see all the measurements

Satellite checked

Satellite Test As Astra19-HH OUT 03:42 100%


H65
1120.0 MHz 19.2°E
DVBS2

Power 60.1 dBμV
C/N 13.6 dB

Bar graph representing the selected channels
Color according to checkmarks

1/4 Ref. 70.0 dBμV

5.2. Setup

Press  to change the Ssatellite Test options.

Satellite Test - Setup 03:44 100%

- Powering Off
- DiSEqC Off
- SCR
- Ref. Level Auto
- Channels

- **Powering:** Select the powering of the LNB if needed.
- **DiSEqC:** Select the SAT of the DiSEqC command.
- **SCR:** Select all the parameters needed to setup the SCR command.
- **Ref. Level:** Select the reference level of the bar graph.
- **Channels:** Select the number of channels as well as the channels from the channel plan.



6. Learning plan

Analyzes the input signal to the meter and automatically detects all channels.

This feature automatically identifies the channels as either analog or digital and performs measurements on each.

A bar graph is displayed with the height representing the power for digital channels and the level of the video carrier for the analog channels.

The measurements made for analog channels are video carrier level and V/A. For digital channels the measurements are power and C/N.

The analog channels will have an extra, smaller white bar indicating the level of the audio carrier.

6.1. Main window

Below is a capture of a Learning Plan window with a brief explanation of its features:

Selected channel
Change using

List of measurements
with pass/fail indicators


Learning Plan CCIR 04:51AM 100%

CH 69
858.0000 MHz

Power 57.0 dBμV
C/N 34.2 dB

Bar graph representing found channels
Color according to checkmarks

17/17 Ref. 80.0 dBμV

Indicates that the scan is finished.
Press  to save the plan



7. Constellation

Digital video often does not show signal impairment until it is too late due to the small margin between acceptable quality and failure.

Constellation diagrams are an indispensable tool to help detect the presence of noise, phase jitter, interference, and gain compression, all of which impact overall signal quality and thus reduce Modulation Error Ratio (MER).

Ideally, each of the symbols in a constellation diagram should display a clean dot indicating a perfect signal.

The **H30FLEX's** real time constellation, allows the installer to assess the size and shape of the build up of dots indicative of problems which contribute to bit errors leading to service disruption

7.1. Main window

Below is a capture of a Constellation window with a brief explanation of its features:

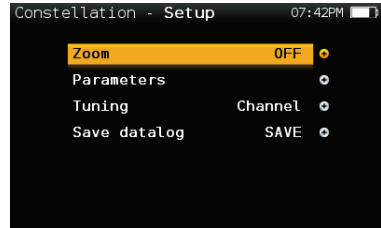
The screenshot shows the 'Constellation' window with the following callouts:

- Selected channel:** Change using (indicated by left and right arrow buttons).
- Modulation:** Indicated by a yellow arrow pointing to the 'QAM64 6108' text.
- List of measurements with pass/fail indicators:** Points to the measurement list:
 - Pwr: 8.3 dBmV
 - C/N: 41.5 dB
 - MER: 36.0 dB
 - CBER: 1.0E-8
- Constellation diagram:** Points to the grid of signal symbols.

7.2. Setup



Press  to change Constellation options.



- **Zoom:** OFF, 1st, 2nd, 3rd, 4th.

Select a quadrant of the constellation to be represented for more detailed view. Select Zoom OFF for the full constellation.

- **Tuning:** Channel, Frequency

- **Band:** Terr, Sat

- **LNB**

- **Save datalog:** Saves the current scan measurements. You can see the datalogs using the remote control application.



8. Echoes

It is important to check that no echoes can cause problems in the reception of DVB-T and DVB-T2 signals.

This feature you allows to visualize the echoes of the received signal, helping the installer to minimize as much as possible same for optimal signal reception.

8.1. Main window

Below is a capture of a Constellation window with a brief explanation of its features:

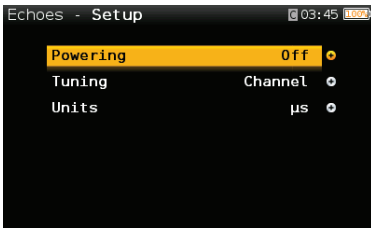
Selected channel
Change using

Constellation diagram

List of measurements with pass/fail indicators and **number of echoes**

8.2. Setup

Press to change Echoes options.



- **Powering:** Off, 13V, 18V, 24V.
- **Tuning:** Channel, Frequency
- **Band:** us, Km



9. Setup

Change main configuration settings:



- **Band:** Terr, Sat
- **Ter. Network:** Aerial, Cable
- **Terr Plan:** FCC STD, FCC RETURN, FCC IRC, FCC HRC, FCC OFFAIR, CCIR, and customers plans
- **Sat Plan:** F68E INTEL C, 68E INTEL, 42E TURK, 39E HELLAS, 33E EUTEL, 28E EUTEL, 28E ASTRA, 26E BADR, 25E EUTEL, 23E ASTRA, 21E EUTEL, 19E ASTRA, 16E EUTEL, 13E HOTB, 10E EUTEL C, 10 EUTEL, 9E EUTEL, 7E EUTEL, 4E ASTRA, 1W THOR5, 1W THOR6, 5W EUTELC, 5W EUTEL, 7W NILE, 30W HISPA, 48W AMZC, 48W AMAZ, SIM, and customers plans
- **Sat. Freq.:** IF, real Freq.
- **Sat. LNB:** Universal, C Band, Other.
If Other is selected, you must enter the frequency.
- **Language:** English, Español.
- **Units:** dBµV, dBmV, dBm
- **Quality profiles:** Trunk, Tap, End Line, Ground.
Different thresholds are available for different testing locations.
- **Audio Carrier:** 4.5 MHz, 5.5 MHz, 6.0 MHz, 6.5 MHz.
- **Volume**
- **Time and Date:**
Set current time (hour and minutes) and date (day of the month, month and year).
- **Energy:**

- Auto suspension
- Auto shutdown

- **USB Storage:** Connect your H30FLEX to your computer using the USB connector and turn USB Storage ON, so you can use your H30FLEX as a storage unit.

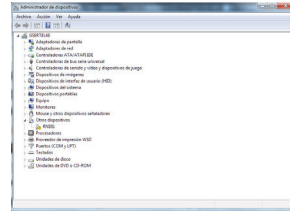
- **Update firmware:** See section *Firmware update*

- **Reset configuration:** Resets the H30FLEX to factory settings

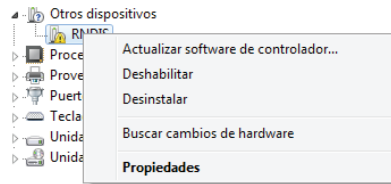
- **Licenses:** Shows a list with all the licenses included in your H30FLEX

- **About SW**

- **About HW**



3.3.- Select *Other devices* and right-click on it



3.4.- Select *Update driver*

3.5.- Select the option that allows you to find the driver in your computer.

3.6.- Select *Network adapters* from the list

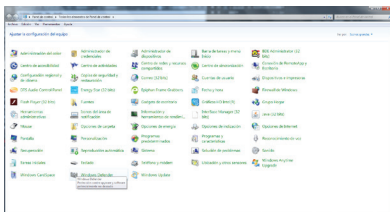
Driver Installation

1. Connect your **H30FLEX** to your computer using the USB

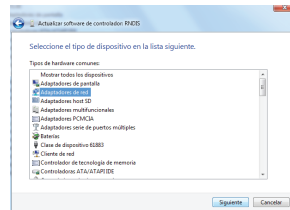
2.- Depending on your Windows version and configuration, it may happen that your computer installs automatically the corresponding driver.

3.- If it does not occur, you must follow the next steps:

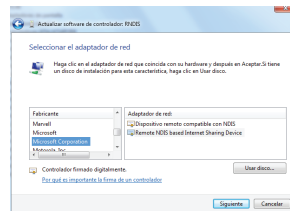
3.1.- Open the *Control panel*



3.2.- Select *Device Manager*



3.7.- Select *Microsoft Corporation* from the list of manufacturers and *Remote NDIS based Internet Sharing Device* from the list of network adapters:



3.8.- Wait until the driver is installed

Web Application

Once you have installed the corresponding driver, open a web browser in your computer (Chrome recommended).

Type **http://h30.flex** in the address bar of your web browser and press Enter.

The you can see the home window of the **H30FLEX** web application:



1. Measurements

In this window, you can see all the datalogs saved in your H30FLEX. They are grouped by date.



2. Plans

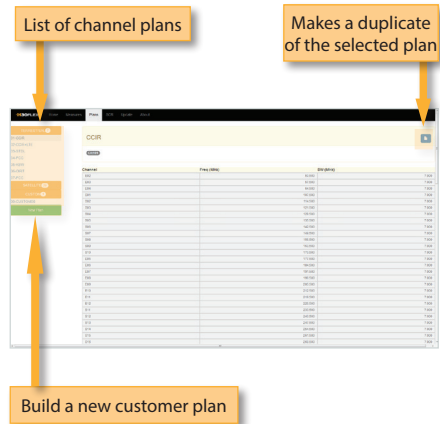
In this window, you can see all the channel plans of your H30FLEX.

They are grouped in three categories: Terrestrial, Satellite and Customer.

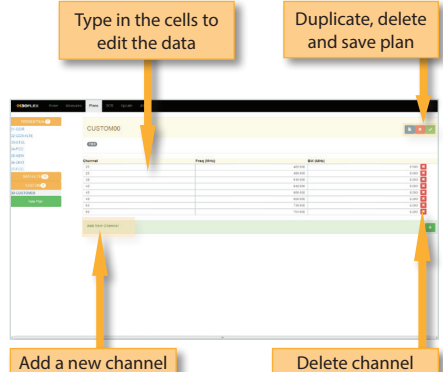
The Terrestrial and Satellite channel plan are the standard channel plans of the corresponding band.

These plans can not be deleted or edited. But you can make a copy of one of them to build a new customer channel plan from it.

The duplicated plans will appear in the Customer list automatically.

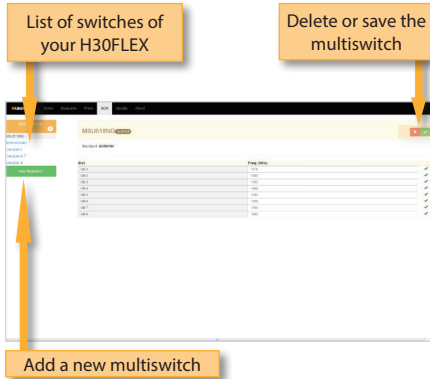


The Customer plans can be deleted and edited:



3. SCR

In this window, you can setup the multiswitches. The H30FLEX includes a list of multiswitches by default, but you can more or edit any of the existing ones.



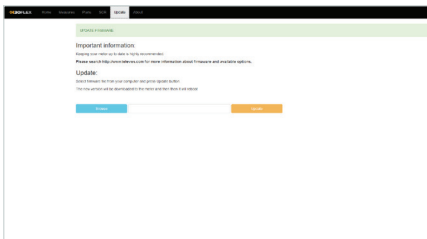
4. Update

In this section you can update the firmware of your H30FLEX.

The first thing that you must do is download the update file from the web of Televes and save it in your computer.

Then, click on the Browse button of this window and select the corresponding file.

Then click on the Update button:



Firmware update

There are two ways to update the firmware of your meter.

The first one is using the web application, explained in the paragraph 4. *Update* of the section *Web Application*

The second one is using the USB Storage feature of the Setup Menu (see section 9. *Setup* of the point *Product Operation*).

To update the firmware using this procedure, follow the next indications:

- 1.- The first thing that you must do is download the update file from the web of Televes and save it in your computer.
- 2.- Turn your H30FLEX on
- 3.- Press the Home button to go to the Main menu
- 4.- Select Setup
- 5.- Select USB Storage
- 6.- Turn USB Storage ON
- 7.- Connect your H30FLEX to your computer using the USB connector
- 8.- Then find the unit called **H30FLEX** in your computer and open the folder. You'll see a folder called *updates*
- 9.- Copy the two files corresponding to the update (*updater* and *version*) to the *updates* folder in the H30FLEX unit.
- 10.- Unmount the H30FLEX unit in your computer
- 11.- Select the *USB Storage* feature in the *Setup* menu of your **H30FLEX** to turn it off
- 12.- Select the *Firmware update* feature in the menu of your **H30FLEX** and press the OK button to confirm.

13.- Then a message will appear indicating that the **H30FLEX** is being updated. Wait until the **H30FLEX** resets automatically

Maintenance

Always disconnect the unit before cleaning. Use only a mild solution of detergent and water applied with a soft damp cloth. Dry thoroughly before use.

Do not use aromatic hydrocarbons or chlorinated solvents. These products may damage the unit.

Do not use alcohol or alcohol based products on the front panel, especially the display. These products may damage the unit.

Technical support

For any questions, contact Technical Support at www.televes.com

Before contacting Technical Support for repair, read the manual to ensure proper use and attempt to RESET the unit to clear any problems.

Repair service

Do not return the unit without first contacting Televes Technical Support.

If the unit needs to be returned, Televes will arrange for free shipping. The unit will need to be appropriately packed for shipping.

In compliance with IATA Regulations, when using our shipping service follow these instructions:

- ▶ Label the package.
- ▶ The equipment should fit as snugly as possible in the box. It is recommended to use the original packing materials.
- ▶ Attach the precaution label to the package.



Failure to comply with these shipping requirements may result in the shipping agent rejecting the package.

Warranty

- A) Televes warrants, only to the original Purchaser, all Products be free from any defect in materials or workmanship for a period of one (1) year, six (6) months for the battery, from the date of original purchase, unless otherwise specified.
- (B) Televes shall, free of charge and in its sole discretion, either repair, replace with a new or factory reconditioned equivalent, or refund the purchase price of the Product(s), that has been determined by Televes to be defective in material or workmanship, subject to the limits of this warranty.
- (C) This warranty excludes any inoperability resulting from:
- (I) use or installation that is not in strict compliance with the written instructions and specifications;
 - (II) any modification or alteration performed by any third party not authorized in writing by Televes;
 - (III) service or repair performed by any third party not authorized in writing by Televes;
 - (IV) misuse, abuse, intentional harm, or lack of reasonable care;
 - (V) fire, ice, snow, rain, wind, water, volcano, excessive heat or cold, lightning, flood, power surge, earthquake, or any other acts of God;
 - (VI) war, crime, strike, riot, electro-magnetic pulse, or any other acts beyond the control of Televes;
 - (VII) shipping.
- (D) All claims under the terms of this warranty must be made in writing, by the original Purchaser, within fourteen (14) days of the defect being known to the Purchaser. Such claims shall be accompanied by a description of any material facts related to the claimed defect and the invoice or other proof of original purchase date and price. If Televes so requests, the Purchaser shall, at Purchaser's expense, deliver the claimed Product(s) to Televes, within 14 days of the date of the return authorization. Under no circumstances shall the Product(s) be returned to Televes without a return authorization.
- E) Any refund to the Purchaser, shall be limited to the purchase price of the Product(s), excluding any applicable taxes, duties, freight costs, removal costs, installation costs, or any other charges incident to the purchase of the product.
- (F) Any damage caused by shipper shall be claimed with the shipper in accordance with the shipper's policies and procedures.
- (G) Televes shall in no event and under no circumstances be liable or responsible for any consequential, indirect, incidental, punitive, direct or special damages based upon breach of warranty, breach of contract, negligence, strict tort liability or otherwise or any other legal theory, arising directly or indirectly from the sale, use, installation or failure of any product acquired by Purchaser from Televes.
- (H) This limited warranty extends to the original Purchaser and cannot be assigned or transferred to any other party without the prior express written permission of Televes, which permission Televes may withhold for any reason or for no reason at all.
- (I) Televes will not assume any liabilities for any other warranties, whether statutory, express or implied, made by any other person.
- (J) Televes reserves the right to modify or discontinue this warranty at Televes' sole discretion without notification. No other warranties are expressed or implied.

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