

Professional measurement technology need not be demanding.

AMA 310

Antenna measurement device

- 5.5" colour TFT (680 × 480 pixel)
- Frequency range from 5–2,150 MHz
- Analogue: UHF, TV, SAT
- Digital: DVB-S, DVB-C, DVB-T
- High pass filter for special channel 2/3 measurement (switchable)
- Return path meas./downstream patch Euro-DOCSIS and US-DOCSIS
- Hum and phase jitter verification
- Broadband: MER up to 40 dB, S/N (analogue) up to 55 dB
- Digital analyzer for all ranges
- Constellation diagram for all TV standards and DOCSIS
- Echo measurement for DVB-T (impulse answer)
- Printer for measurement results and graphics
- Videotext analogue/digital
- DiSEqC 1.0/1.1/1.2/2.0 plus UNICABLE commands
- MPEG 2 decoder with NIT display
- Monitor signal quality (level, BER, MER, S/N)
- USB-A, USB-B, SCART, Ethernet (RJ 45)

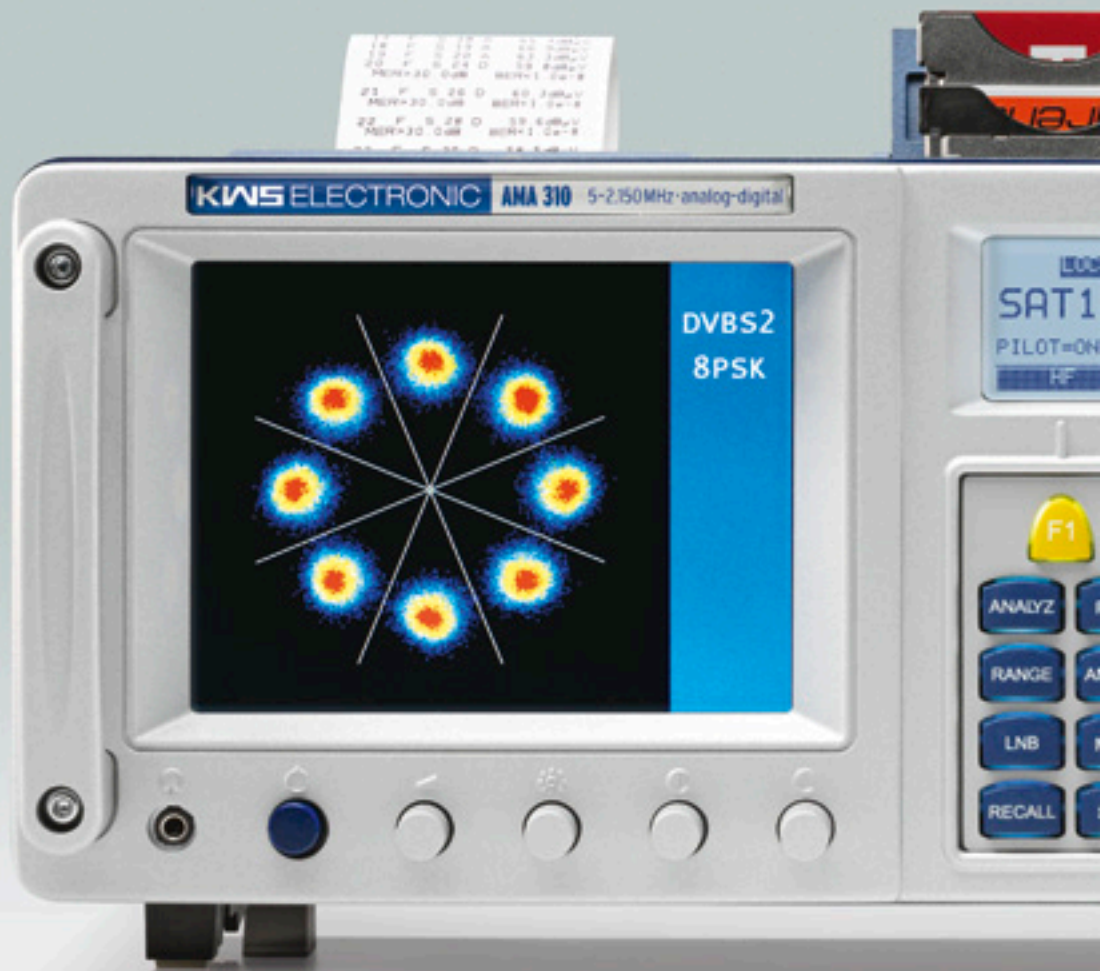
Optional extras:

- Analogue TV: S/N measurement module (evaluated) with SCOPE/hum
- MPEG 2/4 combi-decoder with ASI in/out und DVI out
- DVB-S2 frontend
- DOCSIS Analyzer (Version 2.0)
- EMI
- AMA.remote – SNMP management software for remote control and monitoring





AMA 310 with option bundle 2.



AMA TECHNOLOGIE

The AMA 310 is a further step in the direction of broadband measurement technology. Many new features and innovations were integrated with the established functions from the predecessor devices.

Despite numerous functions as a result of the proven KWS philosophy the device has a user-friendly user interface. Furthermore, state-of-the-art modules guarantee the utmost ruggedness and low weight.

Economical factors also weigh heavily in its favour in: a future orientated hardware platform enables the upgrading of the device and protects your investment for many years ahead.

The perfect all-rounder demonstrates its strengths in its everyday use. Insensitive and eager to please it responds to the daily demands of the technicians.



The content of the AMA 310 bundle can be found in our current price list on our homepage: www.kws-elektronik.de.



The light-intensive TFT ensures contrast-rich images.

Figure: 8PSK constellation diagram.

The background-lit keyboard allows work to be carried with confidence in all conditions.

Figure: measurement of a DVB-S2 transponder.

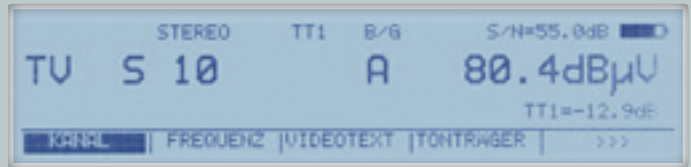


The measurement results as well as spectrum screenshots, constellation images or LCD screen captures can be stored as bmp files for the final documentation or for error reports.

There is a clipboard in the internal flash memory of the measurement as well as the possible direct transfer to a USB memory stick.

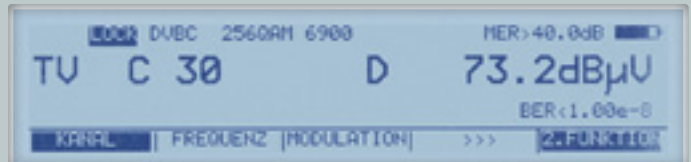


The functional bag not only provides protection for the equipment it also enables the smooth operation of the measurement device. By opening the side flaps the technician has access to the various interfaces.



S/N Analogue (CATV)

S/N measurement is gaining importance as a result of the provision of analogue signals for large high resolution flat panel displays. A flat panel requires a much higher quality of signal than a CRT to convey the viewer with a similar dynamic.



MER with CATV

MER allows the evaluation of the signal reserve of digital transponders in the cable network. With the AMA 310 it's possible to execute measurements for 64 QAM and 256 QAM up to 40 dB MER.

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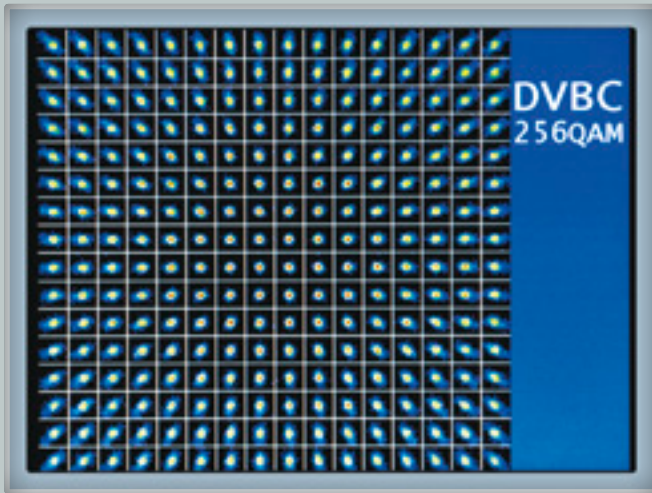
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Quality for the professional.

Faster computing and operational processes, even higher resolution video images as well as useful copy and memory functions are among the immediately noticeable changes to the AMA 310.

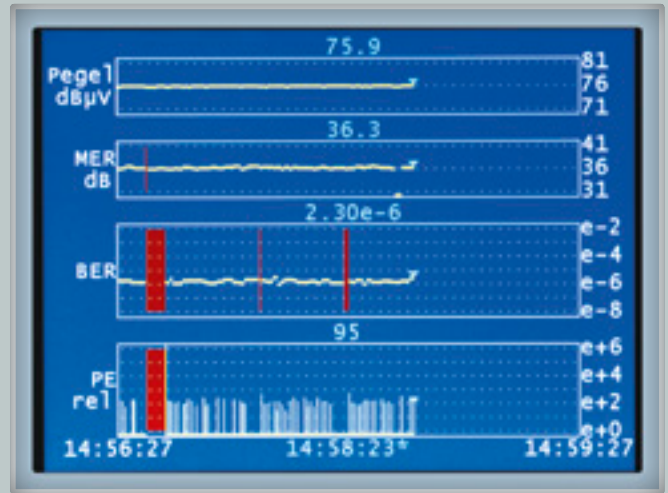
The modern housing design and future orientated battery management make the measurement device even more ergonomic. Despite a high degree of module integration all required EMC guidelines are fulfilled.

It is therefore practically impossible that modules interfere with each other thereby causing a falsification of measurement results.



Hum modulation

The display shows a 256 QAM constellation diagram with a clearly visible network hum overlapping. In normal operation these signal changes are compensated by the receiver. This error is only detectable with the help of the special function "hum".



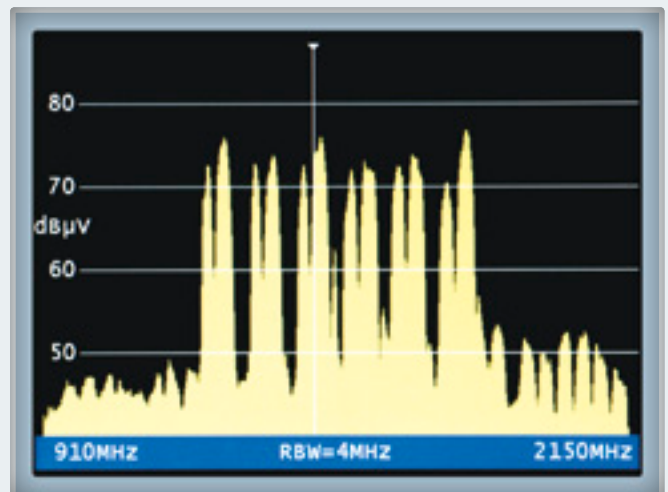
Recording measurement results

With the function "data grabber" it is possible to monitor and record changes for an analogue or digital signal for up to 24 hours. The recordings are presented in a clear graphic and can be stored as such. Using the cursor time tracking for the measurement parameters is possible.



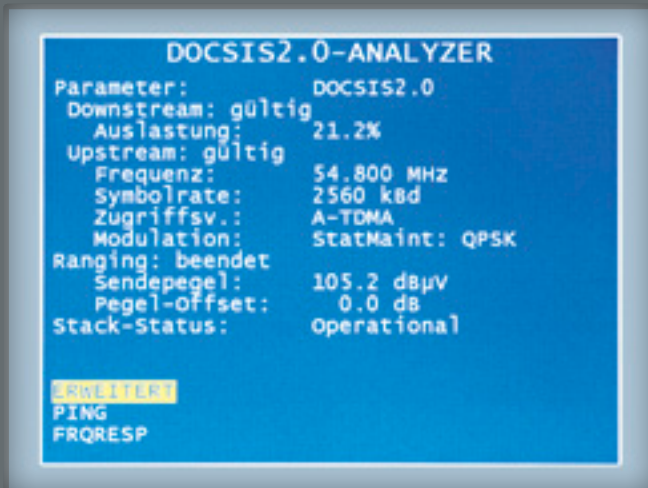
Cable spectrum with analogue/digital recognition

Spectrum representations enable a rapid and secure control of the signal level. The graphical representation of analogue and digital CATV transponders is distinguished by colours in the AMA 310.



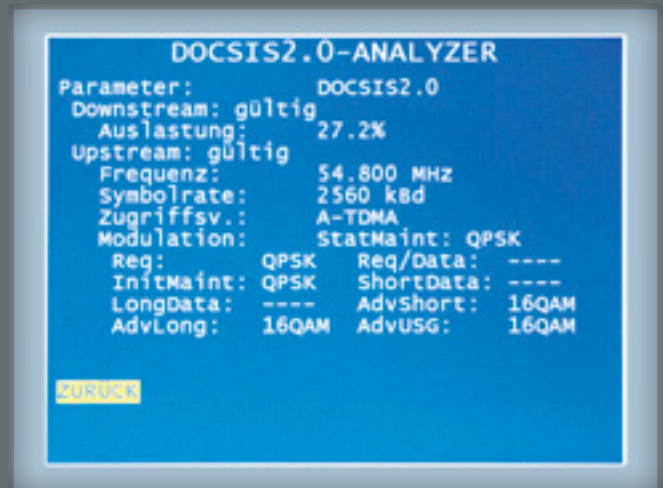
UniCable Spectrum

It is possible to insert satellite TV in a tree structure using the UniCable system. The control signals are based on the DiSEqC commands.



DOCSIS standard screen

Display of the downstream channel usage and a summary of the most important upstream parameters. A statement with regards the basic operation of the DOCSIS connection on a physical layer is possible. The most important measurement parameter here is the transmission level necessary at the measurement location.



Sub-menu EXTENDED

Display of the modulation types in the various upstream time slots as they are given by the CMTS.

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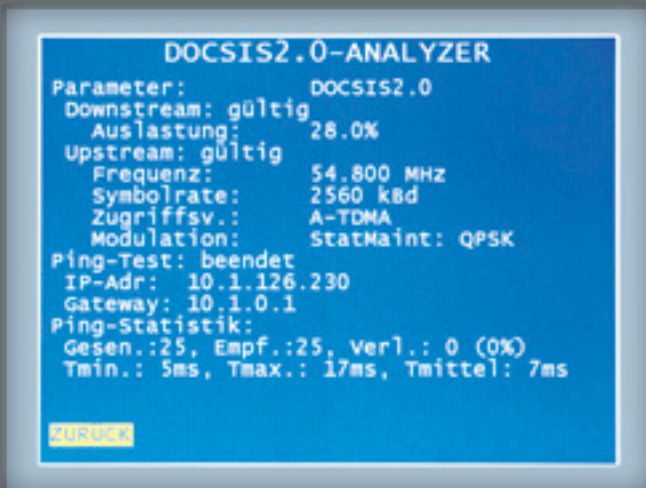
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DOCSIS 2.0 Analyzer option in AMA 310

DOCSIS stands for "Data-Over-Cable Service Interface Specification".

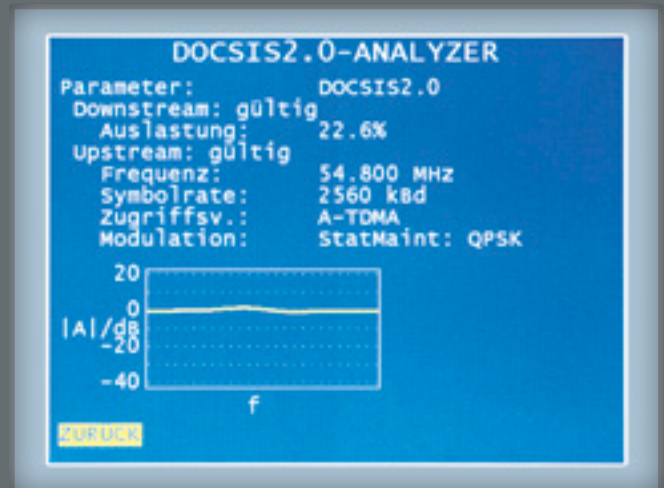
The standard lays down the rules for a fast, bi-directional communication and IP data exchange between the headend and the user. The transmission medium is in this case the coaxial TV cable network. With the help of a cable modem it is possible for to access the Internet using the same cable network providing the TV signal.

The new DOCSIS Analyser in the AMA 310 measurement device conforms to the DOCSIS 2.0 specification. Both the Euro-DOCSIS and US-DOCSIS standards can be measured with this option.



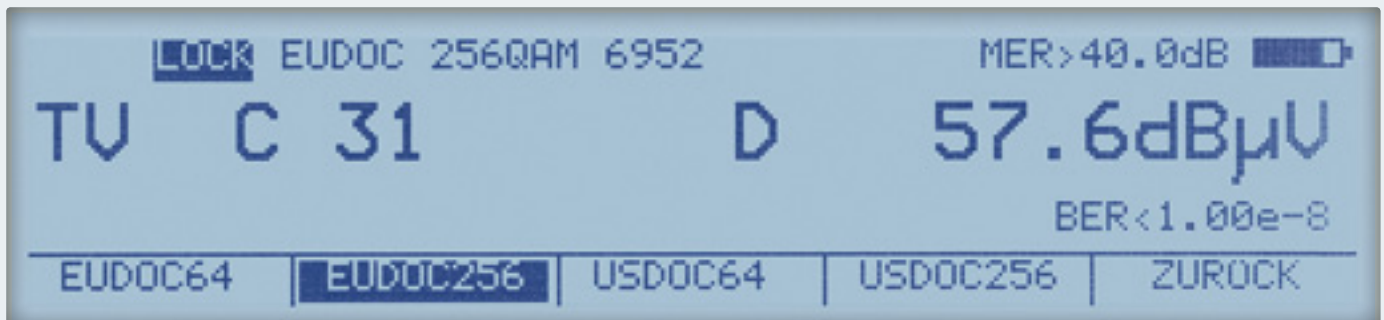
Sub-menu PING

Summary of statistics of the configurable ping tests. Up to 100 pings in intervals of 0.5 to 5 seconds (adjustable in 5 steps) are possible. The quality of the IP connection between a cable modem and the headend can be deduced from this



Sub-menu FRQRESP

Frequency response within the upstream transmission bandwidth. This is calculated from the filter parameters sent by the CMTS to the DOCSIS Analyzer. Thus, the frequency response in the transmission channel between the modem and the CMTS is compensated using a pre-equalizer. This function is not supported by all headends.



Measurement of the DOCSIS Downstream
(Figure: EURO-DOCSIS with 256 QAM)

The AMA 310 provides very accurate measurement results for both the downstream (signal from the headend to the modem) as well as the upstream (data from the modem back to the headend).

Both signals are transferred in the same cable, however in different frequency ranges.

The leakage probe EMI 241

can, because of its size,
be used indoors.



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EMI measurement option in AMA 310

Since May 2009 the German Federal Network Agency (BNetzA) has been checking cable networks with regards to compliance to the maximal permitted transmitted interferences. This test is based on the statutory requirements (SchuTSEV) to protect security relevant radio frequencies from interferences.

With the new EMI option in the AMA 310 and with help of additional KWS equipment it is possible to check cable networks for RF leakage.

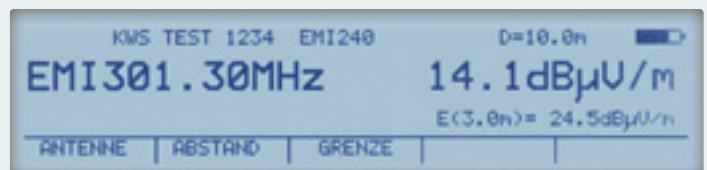
The localisation of leakages, responsible for increased interference, is thereby greatly facilitated.

Radio direction finder EMI 240

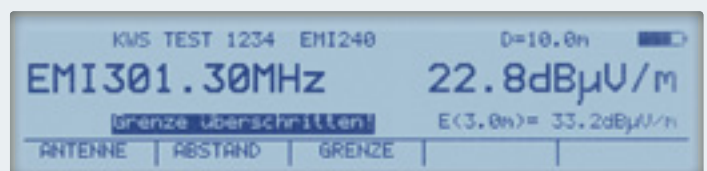
Outside the building the inserted tag is received and the interference measured using the EMI radio direction finder 240 and the laser range finder DLE.



The received identification of the tag frequency generator (in this case "KWS TEST 1234") is decoded. The interference field strength (24.5 dB μ V/m) normalized to 3 m lies under the threshold as stipulated by SchuTSEV.



The received identification of the tag frequency generator is decoded. The interference field strength (33.2 dB μ V/m) lies above the threshold as stipulated by SchuTSEV. A warning message appears in the measurement display.



For the EMI option KWS-Electronic offers the following accessories:

- EMI 240 · 301 MHz-direction finder with YAGI antenna, selective 301 MHz pre-amplifier, connection cable
- EMI 241 · leakage probe with in-built 301 MHz pre-amplifier
- KFG 242 · tag frequency generator (301.0 – 301.7 MHz) with adjustable tag
- DLE 70 · laser range finder