

## CW-4813 ASI & OFDM TS Analyzer



*CableWorld Ltd. has carried out developing activity in the field of digital television for more than a decade, and developed the whole range of professional digital television devices. The goal with developing the portable CW-4813 ASI & OFDM TS Analyzer was to create a device, which along with a PC or notebook is capable of analysing the parameters of the digital television signal down to the bit level, quickly, easily and effectively, especially in the fieldwork.*

*The CW-4813 is equipped with both ASI and OFDM input. The ASI input can advantageously be used in the head-end environment, whereas the OFDM input at any reception point of the DVB-T transmission system.*



*The device receives the input transport streams at its OFDM or ASI input, by its network board using the SW-4811 operating software it converts the transport stream into IP format and feeds it in the user's notebook, desktop, or other type computer to be analyzed there. Both inputs are equipped with loop-through outputs, so that the device can easily be inserted into the network without the need for any distributor device.*

*The applied most up-to-date receiving circuitry provides automatic transmission parameter detection including FFT size and Guard Interval, using the TPS (Transmission Parameter Signalling) information. As a device of the new generation, the CW-4813 has no controls; all settings and programming are made from the computer. The OFDM demodulator will be configured with the SW-4875 software, which at the same time allows also measuring the OFDM parameters (BER, MER, constellation etc.).*

*The device is equipped with individual IP address, thus it can be addressed and used any time, when connected in the system. The transport stream sample sent to the computer will be analyzed with the SW-4811B software and the results are displayed on the computer screen. The SW-4811B analyzer software permits the comprehensive analysis of the data stream thus it can excellently be used for checking up and measuring the data streams of remultiplexers, scramblers, pay TV systems and new services both at developing devices and operating systems as well as for education and training purposes.*

*All pieces of software for operating the particular functions of the device are available at the [www.cableworld.eu](http://www.cableworld.eu) web site always in the latest version for free download and use and they can be installed and studied even without the unit, prior to buying it. The CW-4813 is compatible also with other manufacturers' software since it has been designed for operation with all most widely used IP formats.*

### Main features:

- COFDM demodulator with loop-through input for the whole VHF-UHF band
- Automatic FFT size and Guard Interval identification
- Reception parameter setting manually or with TPS
- Measuring of the transmission characteristics: constellation diagram, TPS decoder, BER etc.
- Computer management system through the 'CW-Net' Ethernet network
- Comprehensive analysis of the data streams
- Picture and sound reproduction
- 5 V supply voltage, low power consumption, continuous service
- Small physical dimensions, very suitable for fieldwork

CableWorld Ltd that used to develop and manufacture analogue television equipment, today develops equipment for digital television with a fully new approach, and endeavours to make the very complex digital technology comprehensible and manageable for the technicians involved.

The CW-4813 ASI & OFDM TS Analyzer consists of a simple hardware and a software package, which is being continuously developed and can be developed even by the user. The hardware is offered at a favourable price, the software is offered free of charge. For developing own software, the user can find all necessary information in the CW-Net.pdf file at [www.cableworld.eu](http://www.cableworld.eu).

The applied Philips COFDM demodulator IC belongs to the latest generation of integrated circuits; it is equipped with automatic FFT size (2k/8k) and automatic Guard Interval detection, it is capable of demodulating hierarchical mode transmissions, and it offers a special solution for suppressing the short time impulsive noise.

Operating the CW-4813 portable ASI & OFDM TS Analyzer needs a computer, which can be the user's notebook, PC, the central computer of the system or any other one. The requirements for the computer are given in the 'Software' page of the web site.

The SW-4811B analyzer software was designed for the comprehensive analysis of the data streams, thus it can advantageously be used both by equipment designers, system operators and also in the education and training field.

The SW-4811B software consists of following modules:

- Input selector control and data format setting
- Data analyzer for 188, 204 and 256 Byte formats, completed with a PID tester
- PSI analyzer
- Program Map display
- Data rate analyzer, elementary stream analyzer
- Picture and sound reproducer
- PCR analyzer
- TS storing and loading
- Real time Analyzer

There are numerous pieces of free TS analyzer software to be found on Internet. Most of them support analyzing UDP data streams, thus the CW-4813 can excellently be used e.g. with the „TSReader” software, too. This software supports also continuous real time analysis.

## Technical data

### Input data

<b>RF input</b>	loop-through type
Input frequency range	49 ... 861 MHz
Raster frequency	1/6 MHz
Frequency accuracy	better than $1 \times 10^{-4}$
Minimal input level	typ. -80 dBm @ 64QAM, FEC 1/2
Maximal input level	typically -25 dBm
RF AGC range	min. 35 dB, typically 45 dB
Total AGC (RF+IF)	typically 65 dB
RF input impedance	75 ohm
RF input connector	IEC (female)
RF (loop-through) output connector	IEC (male)
Loop-through insertion gain	+4 ... +9 dB

### ASI input

Input voltage	acc. to EN50083-9:1998
Input impedance	min. 200 mV <sub>pp</sub> / max. 880 mV <sub>pp</sub>
Input connector	75 Ω
Input data rate	BNC socket (insulated)
	max. 60 Mbps, depending on the PC

### ASI output

Output voltage	(bridged input)
Output connector	min. 800 mV <sub>pp</sub> @ 75 Ω
	BNC socket (insulated)

### Transmission parameters

Modulation/coding	COFDM, full DVB-T compatibility with ETS 300 744
FFT size	2k, 8k
Modulation	QPSK, 16QAM, 64QAM
Code Rate	1/2, 2/3, 3/4, 5/6, 7/8
Guard Interval	1/4, 1/8, 1/16, 1/32
FEC	Reed-Solomon, Viterbi
IF frequency	36.166 MHz
Bandwidth	6, 7 and 8 MHz, variable
Frequency pull-in range	±90 kHz
Special facilities	
FFT Size and Guard Interval	automatic recognition
Noise reduction	Pulse Killer
TPS	decoding and applying
Hierarchical mode	supported ( $\alpha=1$ , $\alpha=2$ , $\alpha=4$ )
Constellation	display
Transport Stream	analysis and display

### Output data

'CW-Net' Ethernet output	100 Mbit/s
Connector	RJ-45 socket
MPTS	UDP format
	(CW-Net, 7 × 188 Bytes or 7 × 204 Bytes)

### General data

Mass	approx. 0.75 kg
Physical dimensions	90 × 50 × 160 mm
Service period	continuous
Power requirements	5 V DC / max. 4 VA
Operating temperature range	+5 ... +40 °C
Relative humidity	max. 80 %
Storage temperature range	-25 ... +45 °C
Relative humidity	max. 95 %, non condensing