CW-4000

CW-4411	**MPEG-4 Encoder**
	H.264 encoder with ASI and IP output
CW-4412	**MPEG-4 Encoder Duo**
	Two independent H.264 encoders with ASI and IP output
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USER'S GUIDE

The MPEG-2 compression that brought a revolutionary advance in the transmission of picture and sound, by today was superseded by the MPEG-4 compression technique. On the customers' intensive demand CableWorld developed the new generation of its encoders, the MPEG-4 (H.264) Encoder series.

1. MECHANICAL CONSTRUCTION

The MPEG-4 Encoders are built in standard 19" x 1 HU instrument frame. They are delivered along with the following accessories:

1. Power cord	1 ea.
2. Spare fuse T 1.25 A	
(placed in the fuse holder mounting)	1 ea.
3. Crossover cable with RJ45 connectors	1 ea.

The power consumption in all versions is very low therefore no special cooling or ventilation is needed.

2. ELECTRICAL CONSTRUCTION

The devices are equipped with own switching mode power supply. The supply voltage of the interface circuitry is +3.3 V, whereas the signal processing circuitry works with supply voltages as low as +1.2 V, +1.8 V and +2.5 V. The effective power consumption is low; the unit is suitable for continuous operation.

The device circuitry comprises high complexity circuits that need to be configured to the given task by the user. The device can be configured with items of software, free available for downloading from the www.cableworld.eu web site. CableWorld's devices and software compose a system, where some items of software will be used with multiple devices, and some devices need the use of multiple items of software.

The programs run in Windows XP or Vista environment, but CableWorld's open system allows controlling the devices by anyone, from any environment with his own software, via IP.

3. HARDWARE AND SOFTWARE SUPPORT

The software for programming the devices can be downloaded from the 'Software' page of the www.cableworld.eu web site. The downloaded installer exe file installs the software in the C:\Program Files\CableWorld directory. These items of software can be simply removed with the 'Uninstall' function from the PC any time, so they can be installed for preliminary test, too.

The user's guide of the software that is at the same time the instruction manual of the device can be found in the 'Help' of the software. The 'Help' can be downloaded also separately in pdf format from the 'Software' page.

Programming the MPEG-4 Encoder requires installing the SW-4412 basic software and the SW-4901 auxiliary software. For examining the output stream we suggest installing the SW-4811B TS Analyzer software, but other manufacturers' software can be used, as well. It is useful, if the printed form of the software Help file is available, too. In our latest guides the important steps are emphasized with large letters and pictures, those interested in the details are informed with small letter descriptions.

After installing the software, the device and the PC can be interconnected with the delivered crossover cable in 100Base-T mode. However we suggest interconnecting the device and the PC via an Ethernet switch with straight cable.

In the first tests a simple switch can be used, but we suggest changing to a switch suitable for managing IGMP messages.

The MPEG-4 Encoder (as all CableWorld products) will be delivered factory set to the 10.123.13.101 IP address. When using more than one device in one system, you must set the devices to different IP addresses using the SW-4901 software to avoid IP address conflict. Users find help in descriptions CW-Net.pdf and Using_CW-Net.pdf, which can be downloaded from the 'Papers' page of the web site.

Probably, transmitting the transport stream over IP network holds surprises even for users having good networking knowledge. The most important knowledge is summarised in the publication 'Transport Stream Managing over IP' (TSMoIP.pdf).

Important note: CableWorld's gigabit system transmits the transport streams and the device control commands in a common network, decreasing your expenses and increasing the potential of remote control. The transport streams and the control commands are selected by Port numbers. The user's job is assigning the Port number range to be used for transmitting the TS, and programming this Port number range in the device. The device control must be performed outside the TS Port Interval. The device control may totally be disabled by transport streams transmitted outside their TS Port Interval.

In CableWorld's system the gigabit transmission is performed by FPGA circuitry, so the data rate is not limited by the performance of internal processors, and the gigabit data rate can be utilized up to 100%.

4. PUTTING THE DEVICES IN OPERATION

After unpacking the device remove the protection foil from the stainless steel cover of the device. Connect the device to the specified mains voltage and switch the power switch to ON. Within a few seconds the device is ready to operation.

Programming the device and saving the settings is required only when putting the device in operation first or when modifying the settings.

5. TECHNICAL DATA

The technical data of the devices are published in their data sheets, which are available at the web site www.cableworld.eu.

Additional technical data:

All ASI inputs and outputs are separated by transformers, which assure 2000 V separation. This design is very advantageous in applications, where arising of earth currents due to transmission of the ASI signal between different rooms or laboratories have to be prevented.

From the point of view of electromagnetic radiations and protection against disturbances, it is advantageous if the outer shielding of the ASI connecting cable is earthed to a proper point. This point has to be found individually in each application.

In the CableWorld CW-4000 system the ASI inputs have metallic BNC connectors, the shielding of the coaxial cable is earthed here. The output connectors are insulated.

6. SUPPLEMENT

We appreciate if the the users integrate our products into their systems and undertake writing own software for operating these products. CableWorld assures extra technical support for these creative users; in the CableWorld system the instruction sets are free available for everyone, and major users can have even the source codes of the software.

Beyond serial products, CableWorld is ready to deliver products for special demands and also to implement individual ideas.

We appreciate receiving all remarks, experiences, measuring results with our products and we pay respect to them at our further developments.

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