

## CW-4956 64-Channel IPTV Remultiplexer

64-channel transport stream remultiplexer with 60 IP and 4 ASI inputs, mainly for delivering SPTS streams for IPTV systems

## USER' GUIDE

Dear User!

*The digital technology offers new possibilities in the field of radio and television broadcasting, too. The IPTV is a branch of the possibilities which brings worldwide interest.*

*The CW-4956 type 64-Channel IPTV Remultiplexer is made for the IPTV head ends, it can be used for producing 64 STPSs for 64 radio or television programs. The 60 IP and the 4 ASI inputs allows processing the signals from any sources. The input signal format can be SPTS, MPTS and Elementary Stream.*

*The SW-4956 device controlling software configures the device for IPTV services. But remember, the device configured by other software can be used in many other applications.*

### 1. MECHANICAL CONSTRUCTION

The CW-4956 64-Channel IPTV Remultiplexer is built in standard 19" x 1 HU instrument frame. It is delivered along with the following accessories:

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|--|-------|
| 1. Power cord  | 1 ea. |
| 2. Spare fuse T 1,25 A<br>(placed in the fuse holder mounting) | 1 ea. |
| 3. Crossover cable with RJ45 connectors                        | 1 ea. |
| 4. Cover cap for the optical receptacle                        | 2 ea. |

### 2. ELECTRICAL CONSTRUCTION

The device is equipped with own switching mode power supply. The supply voltage of the interface circuitry is +3.3 V, but the signal processing circuitry works with supply voltages of +1.0, 1.8 or +2.5 V. The real power consumption is low the unit is suitable for continuous operation. The low consumption needs no special heating, the normal environmental temperature (20...22°C) and natural ventilation will significantly increase the lifetime and reliability of the device.

The device circuitry comprises high complexity FPGA circuits, which should be configured to the given task by the user. The device can be configured with

the software, free available for downloading from the [www.cableworld.eu](http://www.cableworld.eu) web site. This product of CableWorld Ltd is the member of a new generation, where the instruction set is different from the previous releases. The compatibility with the previous software is only so much, that the device sends a response to the SW-4901 software Gigabit query, so at querying the network devices the CW-4956 indicates the presence. The programs run in Windows XP or Vista environment, but the open system of CableWorld allows controlling the devices by anyone, from any environment with his own software via IP.

### 3. HARDWARE AND SOFTWARE SUPPORT

The SW-4956 64-Channel IPTV Remultiplexer Controller software for programming the device can be downloaded from the 'Software' page of the [www.cableworld.eu](http://www.cableworld.eu) web site. The downloaded installer exe file installs the software in the C:\Program Files\CableWorld\ SW\_4956 directory. This item of software can be simply removed with the 'Uninstall' function from the PC any time, so it can be installed for preliminary test, too.

The user's guide of the software and the detailed user's guide for the device can be found in the 'Help' of the software. The 'Help' can be downloaded in pdf format from the 'Software' page separately, to

All the parameters of the 64-Channel IPTV Remultiplexer can be set with the SW-4956 software. Putting the device in operation requires no additional software. For finding the IP network devices the finder of the SW-4901 can be used, other software can not communicate with the IPTV Remultiplexer.

For examining the input and output streams 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 attached crossover cable in 100Base-T mode for studying. But we suggest interconnecting the device and the PC via switch with straight cable in order to supply the external data streams as soon as possible. The connection with 100 Mbit/s rate can be used until the transport streams fit in this data rate, beyond this, change to gigabit data rate. In the first tests simple switches can be used, but we suggest using switches that are suitable for managing IGMP messages as soon as possible.

The factory setting for the 64-Channel IPTV Remultiplexer input is IP address 10.123.13.101, for the output is IP address 10.123.13.102. When using several devices, set different IP addresses as soon as possible 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. The basic parameters of the CW-4956 (IP Address, MAC Address, etc.) can be set in the Full version of the SW-4956 software on the System Configuration page.

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: The gigabit system of CableWorld is a very advanced, high performance system, where the transport streams and the device control commands are transmitted in a common network; decreasing your expenses and increasing the potential of remote control. The transport streams and the control commands are selected according to the Port numbers. The user's job is, assigning the Port number range to be used for transmitting the TS and programming it in the device. The device control must be performed outside the TS Port Interval. The device control can be totally disabled by the transport streams outside the TS Port Interval.

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

#### 4. PUTTING THE DEVICES IN OPERATION

After unpacking remove the protection foil from the stainless steel cover of the device. Connect the device to the specified mains voltage and switch on the power switch. After a few seconds (max. 60 sec) 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.hu](http://www.cableworld.hu).

The novelty of the A CW-4956 is, that besides the UTP cable, the optical cable connection is also possible. When optical cable is used, remove the protective plug from the SFP housing, then gently slide the SFP module according to the required transmission (distance and wavelength) in place. The supply voltage of the module is +3.3 V, the maximum current consumption is 300 mA. After connecting the optical cable the device will prefer the optical transmission and will switch over to the UTP input only, if the communication is unsuccessful.

The consumption of the optical modules is high, so if the optical input is not used, do not store the module plugged in the SFP connector. After removing the module, put back the protective plug.

Additional technical data:

The CW-4956 is equipped with loop-through ASI inputs, but despite the plastic BNC house, the external parts (shield) of both the input and output BNC connectors are connected to the device frame. The isolating transformer here is used only for balancing the signal.

#### 6. SUPPLEMENT

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

Beyond serial products, CableWorld is ready to deliver products for special demands and 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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