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ALL ALL CE

Operation

Manual v1.0

micro line MLH-201



1. IMPORTANT SAFETY PRECAUTIONS INFORMATION

READ THE FOLLOWING WARNINGS BEFORE YOU USE YOUR DEVICE

WARNING

The following safety precautions must be observed to prevent fire or electric shock hazard. Safety precautions include but are not restricted to the following:

Power supply / Mains cord

- Operate the unit only within the voltage range defined as appropriate by the manufacturer.
- Occasionally check the power connector and remove dirt or dust that may have accumulated.
- Duse only the mains cord that comes with your unit.
- Do not operate the unit or plug in the mains cord if it is broken, split, or damaged in any way.
- Do not place the mains cord next to heating devices. Do not pull it, place heavy objects on it or damage it in any way. Keep it out of reach of children.
- Ensure that the device is plugged in a properly grounded socket. Insufficient grounding may cause electrocution.
- Always carefully disconnect all plugs by pulling on the plug and not on the cord. Make sure the unit's power switch is turned off before removing the cord from an outlet.
- Disconnect the mains cord when the unit is not in use for long periods of time or during storms.
- Do not connect the unit to a multiple-outlet to avoid plug overheating.

Disassembling

This unit contains parts that cannot be repaired by the user. Do not disassemble or try to repair it as this will void all warranties. Please contact the manufacturer if you experience any problems with your unit.

Water/humidity

- Do not keep the unit in a humid place or near water.
- Do not plug/unplug the unit with wet hands.



Fire

■ Never place a candle or another source of fire on the unit as it may fall and start a fire.

■ If the mains cord or the power connector is damaged or destroyed, or if there is a sudden loss of picture during operation, or if you notice a strange smell or there is smoke, immediately switch the unit off, disconnect the mains cord and contact the manufacturer's technical support department.

Installation / Storage

- This unit contains high precision pieces of electronics. To ensure optimal performance and avoid damage, do not store it in any location where it may collect dirt, duct, lint, etc. Do not expose it to extreme heat or cold (e.g. in direct sunlight, near a heater or in the car during the day). Place the unit in a secure place to avoid falls.
- Before moving the unit, always unplug all cords first.
- When installing the unit, make sure that an outlet is within easy reach. In case of malfunction, switch the unit off and unplug the power cord. When the unit is not in use for a long period of time, make sure that the mains cord is disconnected.

Connectivity

Before connecting the unit to other electronic devices, always switch off and unplug all devices.

Maintenance

Do not spill liquids on the unit. Do not use any diluents or volatile liquid to clean the unit. Instead, use a soft slightly damp cloth and allow the unit to dry completely before using again.

Handling

- Do not poke your finger into the openings on your unit.
- Never put paper, metal parts or other objects into the openings of your unit. If you suspect that there are foreign parts in your unit, switch it off and unplug the mains cord. Contact the manufacturer's technical support department.
- Do not step on or place heavy objects on top of the unit. To avoid hardware damage, handle all buttons, connectors and switches gently.

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2. INTRO

Congratulations on purchasing the MLH-201. You now own a high quality, professional DTV headend. To get the most out of your purchase, please take the time to carefully read through this manual.

3. INSTRUCTIONS

3.1 - Description

The MLH-201 is a very powerful, all-in-one mini headend device, able to receive up to 4 HD signals and convert them either in IPTV streaming using UDP/RTP protocols multicast/unicast.

The embedded web server of the MLH-201 provides a very friendly user interface as well as the ability of remote or local control of the device via LAN.

Its small size and its powerful features render the MLH-201 the ideal solution in case we want to distribute HD content eg. coming from STBs or blue ray to a CATV installation using the IPTV technology.

3.2 - Features

- ● 4 x HD inputs
- HDCP v1.4 support
- Gbit IP streaming (up to 64 x SPTS / 4 x MPTS)
- Dual power supplies offering redundancy mode
- DLocal or remote control via webserver
- Very friendly user interface
- Wall or rack mount options
- SNMP v2
- ● Ultra-compact size
- > 5-year warranty

3.2.1 - Auto-reset functions and watchdog

During the normal operation of the MLH-201, the main CPU monitors all the internal parts in order to ensure that the device works normally. In case of an internal error or module failure, the MLH-201 immediately initiates the recovery procedure by resetting the appropriate module or the device. Finally, watchdog timers ensure that the device will be reset in case of CPU failure..

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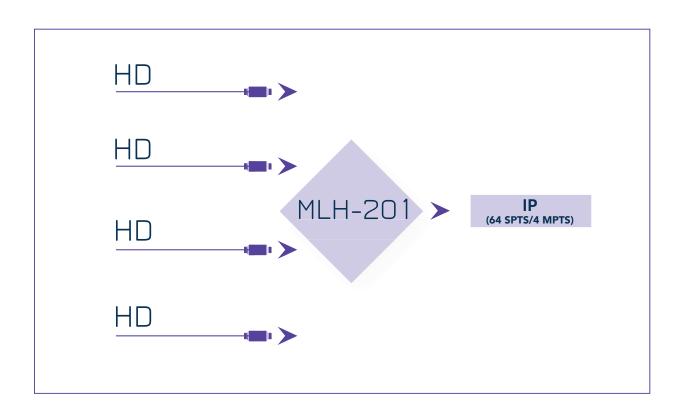


3.2.2 - IP streaming

The MLH-201 is able to make IP streaming of all programs coming from the 4 x HD inputs using UDP or RTP protocol in multicast/unicast IP addresses. The max. output bitrate can be up to 480 Mpbs.

3.2.3 - Dual power supplies

The MLH-201 is powered from one or two external power supplies of +12VDC/2.5A. In case we connect two external power supplies then they will work in redundancy mode. Thus, in case of failure of one of the two external power supplies the device will continue working without stoping.

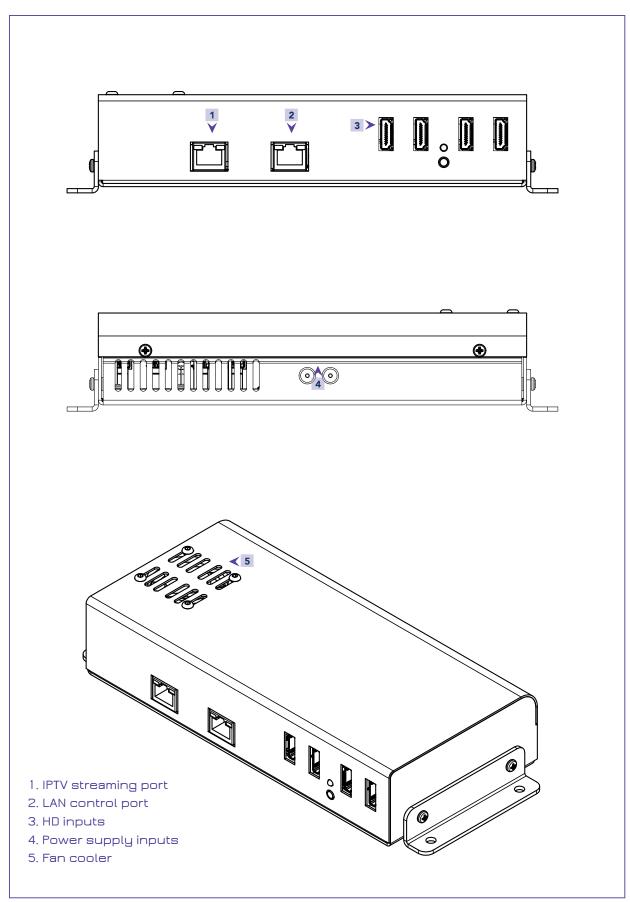


3.3 - Block Diagram



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3.4 - Product drawing views



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4. INSTALLATION

4.1 - General

The MLH-201 has a very friendly interface for programming and monitoring purposes. The user is able to gain access to the embedded webserver, by opening an Internet browser (e.g. Internet Explorer, Firefox or Chrome) and type the following static IP: **192.168.1.205**.

The default username and password are the following: Username: admin Password: 12345

4.2 - Embedded Webserver

Status

4.2.1 - "General" page

Every time that the user is connected to the device, the "General" page (Figure No 1) is loaded providing a current general status information of the device.

	ſ		- 5 - 6		- 5 4 - 5 4	5 C				MLH-201
Status	Status					5 A				🔛 EN 🔻
General Program list	Inputs	Status	TS status	Service name	Service ID	Video bitrate	Audio bitrate	LCN		
Block diagram	Input 1	Running		ARTE HDProgram 1	100	14000	320	101		
	Input 2	Running	•	BBC World News	200	12000	320	201		
Setup	Input 3	Running	•	CNNi	300	13500	320	301		
Input	Input 4	Disabled	•	TV5	400	14000	320	401		
Program selection										
Output > IP streaming	IP Outputs	Status								
	TS1	0 SPTS out	of 16							
System	TS2	MPTS								
Event log	TS3	0 SPTS out	of 16							
LAN	TS4	0 SPTS out	of 16							
Administration										
System restart Factory defaults	System	Status								
Import / Export config. Firmware update	Multiplexer	ок								
Date & time	IP streamer	ок								
Info	CPU temperature	32.5 °C								
	Status code 1	00000000								
	Status code 2	00000000								
	System date & time	2019-10-16, 06:30:41								
	System uptime	0d 20h 42m 56s								
	Copyright © 2019 Lemoo									

Status - Inputs 1...4

Figure No 1

In these fields, the user is able to see the status of each HD input e.g. if the H.264 encoder is running or if it is in idle state, its Service name, its Service ID, video/audio PID and LCN number.

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Outputs – IP

In these fields, the user is able to see the status of all the IP outputs of the device.

System

This section provides general information of the device, like internal status of all device's modules, CPU temperature and fan state as well as error codes for troubleshooting purposes.

4.2.2 - "Program list" page

In "Program list" page (Figure No 2) the MLH-201 provides information of all programs that are currently being distributed via its IP outputs.

	(MLH-201
Status General Program list Block diagram	Output 1 Output 2 Output 3 Output 4	🗱 en 🔻
Setup Input Program selection Output > IP streaming	Program title Service ID LCN From Input IP out	
System Event log LAN Administration System resant Packry defaults import / Export config. Firmware update Date & time Info		
	To export all program lists clock on an icon.	

Figure No 2

At the same time, the device offers the whole channel list to be exported under the follow file types:

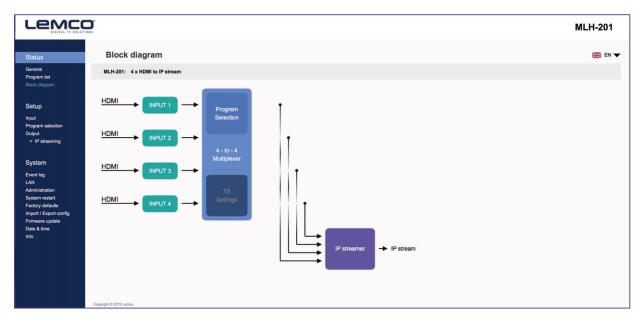
- Excel All the program list is exported in .xlsx format
- CSV All the program list is exported in .csv format
- ▶ M3U All the program list is exported in .m3u

4.2.3 - "Block diagram" page

The "Block diagram" page (Figure No 3) provides a general view of device's internal modules and architecture.

All icons are clickable providing the ability to the user to go directly to the setup page of all internal modules of the device. The grey icons mean that the current module is disabled.

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Setup

Figure No3

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4.2.4 "Input" page

In the "Input page" (Figure No 4) the user is able to setup each HD input independently.

There are four tabs including all the 4 HD inputs. For each tuner the user needs to program the following fields:

		MLH-201
Status	Input	👬 EN 🕇
rogram list	Input 1 Input 2 Input 3 Input 4	
lock diagram En	ncoder settings	
Setup Input	Nut Enabled 🗘	
rogram selection Sel	rvice name ARTE HDProgram 1	
> IP streaming Set	rvice ID 100 (165535)	
System Ou	tput resolution Auto \$	
AN	leo bilrate 14000 \$ kbps	
ystern restart	dio bitrate 320 ¢ kbps	
den and and an and a	dio encoding AAC \$	
	CP Enabled \$	
fo LC	N 101 (11023)	
PM	1T PID 5100 (318100)	
Vid	teo PID 5102 (318100)	
Au	dio PID 5101 (318100)	
	Apply Refresh	
En	ncoder status	
100 C 100	coderRunning	
En	coder version	

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- 1. Input Enabled/Disabled Enable or disable the specific HD input
- 2. Service Name Insert the preferred service name
- 3. Service ID Insert the service ID number
- 4. Video Bitrate Set the video bitrate (2000-19000 Kbps)
- 5. Audio Bitrate Set the audio bitrate (64,96,128,192,256,320 Kbps)
- 6. Audio encoding Set the audio encoding (AAC, AC3, MPEG2)
- 7. HDCP Enable/disable the HDCP function
- 8. LCN Set the LCN number
- 9. PMT PID Set the PMT PID
- 10. Video PID Set the Video PID
- 11. Audio PID Set the Audio PID

Once all settings are being written, the user must click the "Apply" button for the settings to be saved.

Encoder status

For each HD input the MLH-201 provides its current state e.g. if it is running or if it is in idle state.

4.2.5 - "Program Selection" page

In the "Program Selection" section (Figure No 5) the user is able to select any program from any input and assign it to any output using the "pool" technology.

I ONS					
Progr	am selection				
Encoder	Service name	Service ID	LCN	Bandwidth (Kbps)	Output
1	ARTE HDProgram 1	100	101	15000	TS OUT 1 🛊
2	BBC World News	200	201	13000	TS OUT 1 💲
3	CNNi	300	301	14500	TS OUT 2 💲
4	TV5	400	401	15000	TS OUT 2 💲
	Apply			Refresh	
Status					
	Max. Cur	rent de	Peak tection		Payload
TS OUT 1					0% 0%
TS OUT 2 TS OUT 3			_		0%
TS OUT 4	120000				0%
			Reset		
	Progr Encoder 1 2 3 4 4 Status TS OUT 1 TS OUT 2 TS OUT 3 TS OUT 4	Program selection Encoder Service name 1 ARTE HDProgram 1 2 BBC World News 3 CNNi 4 TV5 Apply Status TS OUT 1 120000 C TS OUT 2 120000 C TS OUT 3 120000 C	Program selection Encoder Service name Service ID 1 ARTE HDProgram 1 100 2 BBC World News 200 3 CNNi 300 4 TV5 400 4 TV5 400 Status TS OUT 1 120000 0 TS OUT 2 120000 0 TS OUT 3 120000 0	Arte HDProgram Service ID CCN 1 ARTE HDProgram 1 00 101 2 BBC World News 200 201 3 CNNi 300 301 4 TV5 400 401 Mark Current Current Peak 5 5 120000 0 1 15 0.017 120000 0 1 1 15 0.0174 120000 0 1	Program selection Encoder Service name Service ID LCM Bandwidth (Kbps) 1 ARTE HDProgram 1 100 101 15000 2 BBC World News 200 201 13000 3 CNNI 300 301 14500 4 TV5 400 401 15000 Apply Refresh Estrate (Kbps) Peak TS OUT 1 T20000 Peak Peak TS OUT 2 120000 0 TS OUT 3 120000 0 Teset Teset

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This page depicts all programs coming from the 4x HD inputs and their settings. For each program the MLH-201 provides the following information:

- Service Name which is the name of the program
- Service ID which is the Service ID number of the program
- ▶ LCN No which is the logic channel number of the program
- Bandwidth which is the bitrate of the program

Status Program selection General Program ist Block diagram 1 ARTE HDProgram 1 100 101 15000 T TS CLUT 1	
Program list Block diagram	
Setup 2 BBC World News 200 201 13000 TS OUT 2 TS OUT 3 TS OUT 3 TS OUT 4	
Program selection 3 CNNii 300 301 14500 TS OUT 2 > IP steaming > <td></td>	
4 TV5 400 401 15000 TS 0012 \$	
System Event log LNN Adresitation System restart	
Factory defaultat Import / Export config. Firmware update Peak Peak Peak Peak Peak Peak Peak Pea	
Firmware update Bitrate (Kbps) Peak Max. Payload Date & time Max. Current detection 0% Info TS OUT 1 120000 0 0% 0% TS OUT 2 120000 0 0% 0% 0% TS OUT 3 120000 0 0% 0% 0% 0%	
Reset	R

Figure No 6

Using the Drop down menu from "Output" column (Figure No 6) the user is able to assign any program to any of the four outputs. By doing the same process for each program, from all inputs the user is able to create the four custom multiplexes in device's output.

					Status	Import / Export config.
	Payload	Peak detection	(Kbps) — Current	Max.		Firmware update Date & time
	0%		0	120000	TS OUT 1	Info
	0%		0	120000	TS OUT 2	
	0%		0	120000	TS OUT 3	
	0%		0	120000	TS OUT 4	
Refresh Manual 💠		Reset				

Figure No 7

The status section in (Figure No 7) provides a general idea to the user of the current payload (according to the selected programs) comparing to the max. output payload. It is recommended that the user must not exceed the 85% from each output, since all the bitrate are variable according to their specific content.

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Peak Detection mechanism

As shown in Figure No 7 there is a colored indicator of the peak detection mechanism, for each output transport stream. This indicates if any overflow has occurred on IP streamer's output bitrate with the following colors:

- Green No overflow occurred
- I Yellow No overflow occurred but the input bitrate is close to the output bitrate
- Red Overflow occurred. The user must decrease the input bitrate

4.2.6 - "IP streaming" page

In "IP streaming" section the user is able to setup the IP streamer of the device.

		MLH-201
Status	IP streaming	🐹 EN 🔻
General Program list	IP settings TS OUT 1 TS OUT 2 TS OUT 3 TS OUT 4	
Block diagram	Setup	
Setup	IP address 192.168.1.220	
Program selection Output	MAC address d8:80/39:55:6d/3f	
> IP streaming	IGMP V2 V3 OFF	
System Event log	Apply	
LAN Administration	Status	
System restart Factory defaults Import / Export config.	TS OUT 1 0 SPTS out of 16	
Firmware update Date & time	TS OUT 2 MPTS TS OUT 3 0 SPTS out of 16	
Info	TS OUT 4 0 SPTS out of 16	
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Figure No 8

In Figure No 8 we have general settings of the IP streamer as follows:

- IP address: This is the IP address of the streamer for ping purposes.
- ► MAC address: This is the MAC address of the streamer
- ▶ IGMP: The user is able to select IGMP v2 or v3 or disable the IGMP.

The Status section provides a general view of how many programs and in what format are currently being streamed from the device is its four outputs.

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	<u></u>	MLH-20
Status	IP streaming	· · · · · · · · · · · · · · · · · · ·
General Program list Block diagram	IP settings TS OUT 1 TS OUT 2 TS OUT 3 TS OUT 4	
Setup	SPTS MPTS	
Input	Service name IP out Destination Destination Protocol	
Program selection Output > IP streaming		
System		
Event log LAN		
Administration System restart Factory defaults Import / Export config.	Apply	
Firmware update Date & time	Status	
Info	TS OUT 10 SPTS out of 16	
	TS OUT 2MPTS	
	TS OUT 30 SPTS out of 16 TS OUT 40 SPTS out of 16	
	Copyright © 2019 Lenno	

Figure No 9

In order to setup the IP address for each program there are four tabs one for each IP output of the MLH-201.

By selecting e.g. the TS1 tab (Figure No 9) the user is able to setup the IP streamer for this specific output, following the steps below:

- 1st step:Select SPTS or MPTS streaming mode.SPTS mode: Means that each program has its own IPMPTS mode: Means that all the programs of the current output (e.g.TS1) will be streamed in a single IP.
- 2nd step: For each program (in SPTS mode) or for the whole TS (in MPTS mode) the user is able to assign a multicast IP address from 224.0.0.0 to 239.255.255.255 or a unicast IP address as well as its destination port and protocol (UDP or RTP).

By repeating the above procedure for all four outputs of the MLH-201, the user is able to setup the IP streamer of the device.



System

4.2.7 - "Event log" page

In "Event log" page (Figure No 10) the system logs all the events occurs in the device during its operation. These logs are divided in three different categories based on their priority as follow:

High	Using the red color the system logs the events which are of high priority.
Medium	Using the orange color the system logs the events which are of medium
	priority.
Low	Using the red color the system logs the events which are of low priority.

		MLH-201
Status General	System log	🗱 EN 🔻
Program list Block diagram	Filter by severity I High I Medium I Low I Info	
Setup Input Program selection Output > IP streaming	Delete selected events. Note: You cannot select arbitrary or individual events. All events older than the selected event are automatically selected.	
	Date & time Severity Description	
System Event log LAN Administration System restart Factory driaults Import / Export config. Firmware update Date & time Info	To export log click on an icon.	
	Copyright © 2019 Lemos	

Figure No 10

The user has the ability to select which kind of events to display as well as the device gives the opportunity to export these logs as follow:

- D Excel All the program list is exported in .xlsx format
- CSV All the program list is exported in .csv format

4.2.8 - "LAN" page

In "LAN" page (Figure No 11) the user is able to setup all the parameters of the LAN control of the device as follows:

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	D .			MLH-201
Status	IP address	configuration		👬 EN
General Program list	All fields are require	ed if DHCP is disabled.		
Block diagram	Enable DHCP			
Setup	IP address	192.168.1.200		
Input Program selection	Subnet mask	255.255.255.0		
Output > IP streaming	Gateway	192.168.1.1		
System	Primary DNS	192.168.1.1		
vent log	Secondary DNS	0.0.0.0		
AN Administration System restart Factory defaults	Port	80		
mport / Export config. Firmware update	MAC address	d8:80:39:30:6c:2a		
Date & time Info		Apply		

Figure No 11

LP

- DHCP Enable or disable DHCP
- ▶ IP address: Set a static IP address for controlling the device
- D Subnet mask: Set the specific Subnet mask
- Gateway: Set the gateway's IP address
- ▶ Primary DNS: Set the IP address of the primary DNS
- D Secondary DNS: Set the IP address of the secondary DNS
- Port: Assign the control port
- ▶ MAC address: Depicts the MAC address of the LAN control

4.2.9 - "Administration" page

In "Administration" section (Figure No 12) the user is able to change the default password of the webserver.

) .			ML
Status	Administration			
General Program list Block diagram	Enter a new username and pas	sword in the fields below:		
	New username	admin		
Setup Input	New password			
Program selection Output > IP streaming	Confirm new password			
	Keep username & password after applying factory defaults	0		
System Event log		Apply		
LAN Administration System restart				
Factory defaults Import / Export config.				
Firmware update Date & time				
Info	Copyright © 2019 Lemoo			





<u>Caution!</u>

In case of factory default procedure, the username and password will be reset unless we select the check box "Keep username & password after applying factory defaults".

4.2.10 - "System restart" page

In "System restart" section (Figure No 13) the user is able to apply a full reset to the device.

		MLH-201
Status General Program fait Block diagram Setup Input Program selection Output > IP streaming	System restart Click the Restart button below to cause the device to perform a software restart. Wait a minute before logging into the device again. Restart	XX EN ▼
System Event log LAN Administration		
System restart Factory defaults Import / Export config. Firmware update Date & time Info		
	Copylyl 6 2019 Lanco	

Figure No 13

4.2.11 - "Factory default" page

In "Factory default" section (Figure No 14) the user is able to apply a factory default reset either as DVB-T or DVB-C.

		MLH-201
Status	Factory defaults	🇱 en 🔻
General Program list Block diagram	Click the following button to cause the device to revert all settings to factory defaults.	
Setup	Load factory defaults	
Input Program selection Output > IP streaming	Erase all event logs after applying factory defaults.	
System		
Event log LAN Administration System restart Factory defaults Import / Export config. Firmware update Date & time Info		
	Copyright © 2019 Lemoo	



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4.2.12 - "Import/Export Config" page

In "Import/Export Config" section (Figure No 15) the user is able to do the following:

- 1. Export: Save all the configuration is a specific file
- 2. Import: Upload a previously save configuration file.

		MLH-201
Status General Program list Block diagram Setup Input Program selection	Export configuration Click the loon below to download the configuration file from the device to your computer. Dat	in variation and the second s
Output > IP streaming	Import configuration	
	To upload a configuration file (*.dat) from your computer to the device, follow the steps below:	
System		
Event log LAN Administration	1. Select file Choose file (No file chosen)	
System restart	2. Start file upload Upload file	
Factory defaults Import / Export config. Firmware update Date & time Info	3. Wait for confirmation. The device will restart.	
	Copyright (b 2019 Lemos	

Figure No 15

4.2.13 - "Firmware update" page

In "Firmware update" (Figure No 16) section the user is able to upload a new firmware update using the appropriate file..

	ans.	MLH-201
Status General Program list Block diagram Setup Input Input Output > IP streaming	Firmware update Check for firwmare update Estimated duration: 18 minutes Begin update	in ►
System		
Event log LAN Administration System restart Factory defaults Import / Export config. Firmware update Date & time Info	Capyright 6 2019 Lamos	



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4.2.14 - "Date & Time" page

In "Date & Time" (Figure No 17) section the user is able to select the NTP server in order for the device to receive the date and time as well as to set the timezone of his country.

		MLH-201
Status General	Date & time	∰ EN ▼
Program list Block diagram Setup	System date & time: 2019-10-16, 06:32:44 System uptime: 0d 20h 42m 47s	
Input Program selection Output > IP streaming	Clock source From NTP server	
System	Default Custom blabla Timezone UTC+3 \$	
Event log LAN Administration System restart	Apply	
Factory defaults Import / Export config. Firmware update Date & time		
Info	Copyright © 2019 Lemon	

Figure No 17

4.2.15 - "Info" page

In "Info" (Figure No 18) section the user is able to see the serial No of the device as well as firmware and hardware versions.

			MLH-201
Status	Info		🎇 EN 🥆
General Program list	Hardware and Firmware inf	ormation	
Block diagram	Serial number	123456	
Setup	Firmware version	0.90	
Program selection Output	Platform HW version	08040A0D05550087	
> IP streaming	Platform FW version	0C0800000	
System	VHDL version	1.234	
Event log LAN Administration	Controller MAC address	d8:80:39:30:6c:2a	
System restart Factory defaults	IP streamer MAC address	d8:80:39:55:6d:3f	
Import / Export config. Firmware update			
Date & time Info			
	Copyright © 2019 Lemoo		

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5. TECHNICAL SPECIFICATIONS

Input	Sne	cifica	ations
iniput	Opc		

HD Input	
Туре	4 x HD inputs
Video coding	MPEG-4 AVC / H.264
Profile	High profile 4.0
Input resolution	Up to 1920 x 1080 - 50/60 p & i
Output resolution	Up to 1920 x 1080 - 30p
HDCP support	Yes, v1.4

Lemco

Audio

HD
MPEG-1 Layer II
64, 96, 128, 192, 256, 320 Kbps
MPEG2, AAC, AC3

H.264 encoder

Standard	MPEG-4 AVC / H.264
Bit Rate	1 – 19 Mbps adjustable
Configurable Parameters	Service Name, Service ID
LCN processing	Yes

Output Specifications

IP Streaming	
IP TS Out	Yes
Protocol	UDP / RTP (Multicast/Unicast)
Speed	1Gbit (480 Mbps in IP only mode)
IGMP support	Yes, v2, v3
Туре	MPTS (up to 4 TS)
	SPTS (up to 4 HD programs)
Max. Bitrate	480Mbps max.

Programming Interface

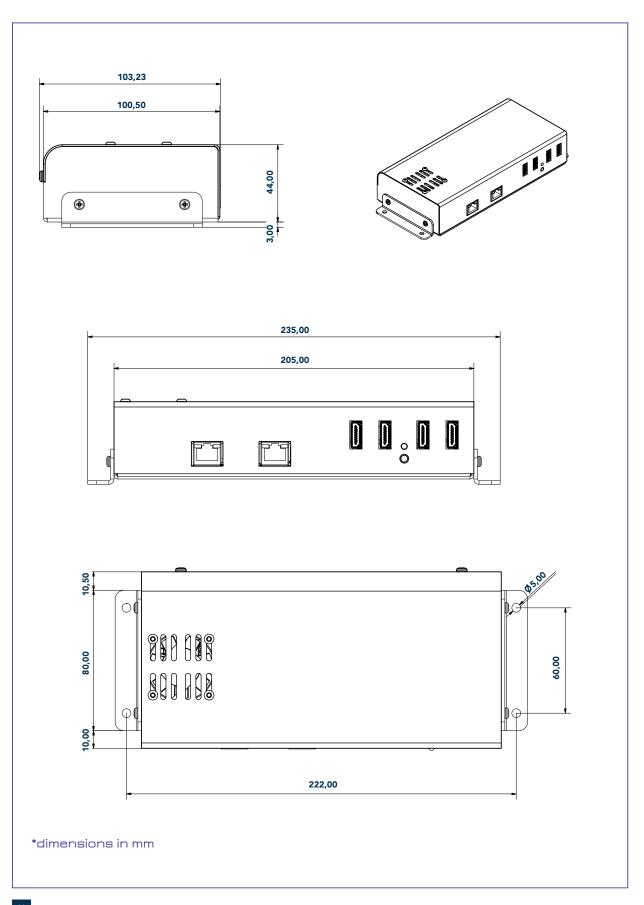
Ethernet webserver	Yes, embedded webserver
Speed	10/100 Mbps
Connector	RJ45
Browser compatibility	Chrome, Firefox, Safari, Opera, Edge etc.
	(Must support HTML v5.0)
SNMP support	Yes
SNMP version	v2.0

General Power Supply Power supply consumption Operating Temperature Storage Temperature Humidity Dimensions Weight

2 x +12VDC 2A max. 0 °C to 40 °C -10 °C to +70 °C Up to 90% 235 x 115 x 48 mm 0.45 Kg

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6. DIMENSIONS



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7. LEMCO LIMITED WARRANTY

This Lemco unit is guaranteed against defects in workmanship and materials for a period of five (5) years beginning on the date of purchase of the product. During the applicable warranty period, Lemco will repair or replace at our sole option, without charge, any defective component part of the purchased unit. The unit is to be delivered packed in adequate packing AFTER an authorization for return has been received.

The owner's responsibilities are to use the instrument in accordance with its written instructions, to provide transport to and from our facilities in the event service is required, and to provide proof of purchase if requested.

Our warranty does not cover any problem resulting from:

- accident; abuse; neglect; shock; electrostatic discharge; heat or humidity beyond product specifications; improper installation, operation, maintenance or modification
- (b) any misuse contrary to the instructions in the user manual
- (c) malfunctions caused by other equipment.

WARNING!!

Our limited warranty is considered void if a product is returned with removed, damaged or tampered labels or any alterations (including removal of any component or external cover) carried out by unauthorized personnel.

OUT OF WARRANTY SERVICING

We repair and service units of our production even once the warranty has expired, if this is economically the best solution to the customer.

The mechanical and electronic spare parts are replaceable for a five-year period after production when the circuits are assembled with discrete components. When integrated circuits are used, the supply of spare parts is guaranteed up to the depletion of our stock and, depending on the possibility of procuring them on the worldwide market. To avoid any unnecessary loss of time, it is very important that the instrument be re-

turned to our premises accompanied by a proper delivery note, duly completed with all the required information, as per the legal dispositions currently enforced.

8. WARNINGS

Content warning

This document contains preliminary information about a product of Lemco company. Lemco reserves the right to make any changes or modifications at any time without prior notice.

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9. NOTES





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