

Manual v.1.1

DTV - Headend



MLF-201

4 x DVB-S/S2/S2X to IP

www.lemco.gr

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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.
- Use 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.

2. INTRODUCTION

Congratulations on purchasing the MLF-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 MLF-201 is a very powerful, all-in-one device, able to receive up to four (4) independent satellite (DVB-S/S2/S2X) signals supporting multistream reception and convert them in IPTV streaming using UDP/RTP protocols multicast/unicast. Moreover, it supports "pool" technology, meaning that the user is able to select any program from any of the four (4) inputs and assign it to any of the four (4) IP outputs providing great flexibility.

The embedded web server of the MLF-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 MLF-201 the ideal solution in cases we want to distribute FTA (Free-To-Air) coming from satellite (DVB-S/S2/S2X) sources to a CATV installation using IP technology.

3.2 - FEATURES

- 4 x independent multi-standard inputs DVB-S/S2/S2X
- Multi-stream support
- Gbit IP streaming (up to 64 x SPTS / 4 x MPTS)
- "Pool" technology
- Dual power supplies offering redundancy mode
- PID Filtering
- Local or remote control via webserver
- Very friendly user interface
- Wall or rack mount options
- Ultra-compact size
- 5year warranty

3.2.1 - Auto-reset functions and watchdog

During the normal operation of the MLF-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 MLF-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.

3.2.2 - "Pool" technology

The MLF-201 supports "pool" technology, meaning that the user is able to select any TV or Radio program from any input and assign it to any of the 4 outputs providing great flexibility.

3.2.3- IP streaming

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

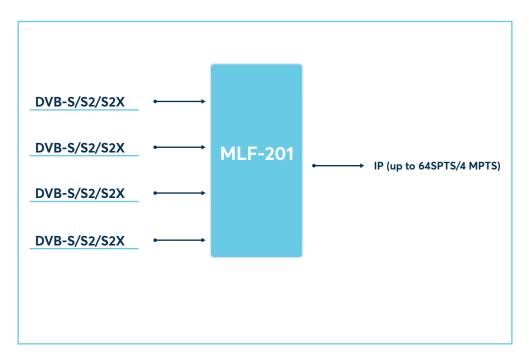
3.2.4 - Dual power supplies

The MLF-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 stopping.

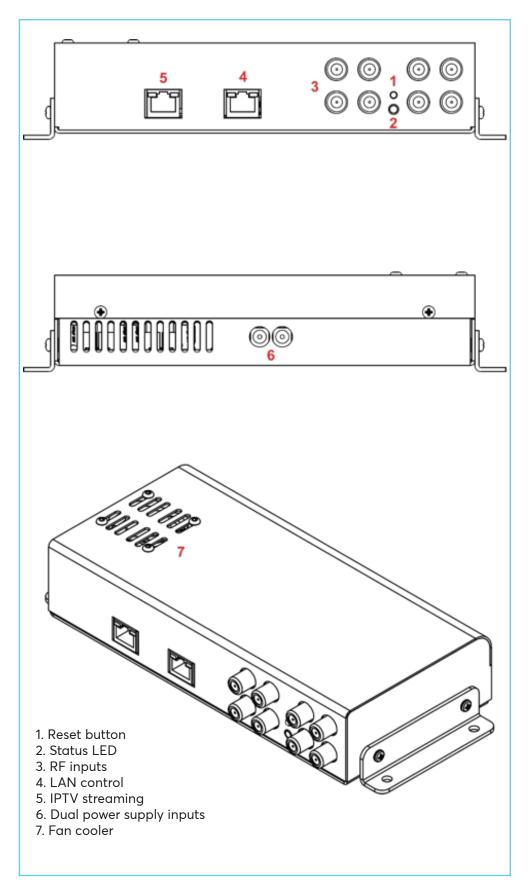
3.2.5 - Multi-stream SAT reception

The MLF-201 is able to receive and analyze any kind of multi-stream satellite signal.

3.3 - BLOCK DIAGRAM



3.4 - Product drawing views



4. INSTALLATION

4.1 - General

The MLF-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:

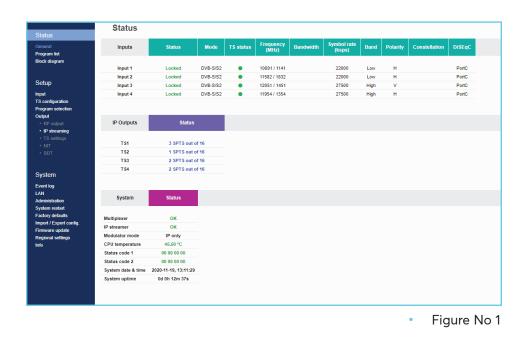
Username: admin Password: 12345

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.



Status - Inputs 1...4

In these fields, the user is able to see the status of each tuner e.g. If it is locked / unlocked or disabled, the working mode eg. DVB-S/S2/S2X etc...

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 like Multiplexer and modulator, CPU temperature, system uptime and CI interface status as well as general status codes of the device for troubleshooting purposes.

4.2.2 - "Program list" page

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

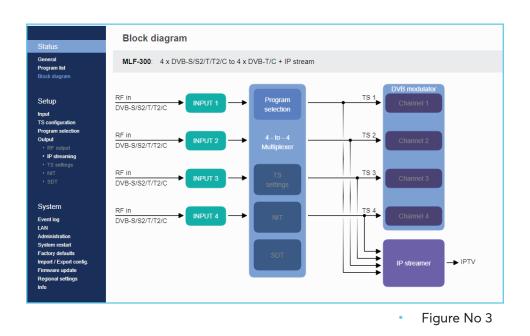
tatus						
neral ogram list	Output 1	Output 2	Output 3) OI	utput 4	
ock diagram						
-4	Program	ı title	Service ID	LCN	From input	IP out
etup	rbb Branden	burg HD	10350	0	1	
put S configuration	rbb Berlin HI	D	10351	0	1	udp://@192.168.1.240:1250
gram selection	MDR Sachs	en HD	10352	0	1	udp://@192.168.1.240:1251
tput	MDR S-Anh	alt HD	10353	0	1	
RF output IP streaming	MDR Thürin	gen HD	10354	0	1	
TS settings	hr-fernseher	n HD	10355	0	1	udp://@192.168.1.240:1252
• SDT ystem rent log						
• SDT ystem rent log w						
• SDT ystem vent log uN fministration						
ystem ent log N ministration stem restart						
 SDT ystem vent log NN dministration ystem restart sciory defaults uport / Export config. 						
SDT ystem ent log N iministration stem restart cory defaults port / Export config. mware update						
SDT ystem vent log N dministration vstem restart uctory defaults uport / Export config. mware update egional settings						
SDT ystem vent log N dministration vstem restart sclory defaults sport / Export config. mmware update egional settings						
SDT ystem vent log N dministration vstem restart uctory defaults uport / Export config. mware update egional settings						
SDT ystem went log went log an dministration stem restart actory defaults sport / Export config. rmware update egional settings fo						
SDT ystem vent log N dministration vstem restart sclory defaults sport / Export config. mmware update egional settings	To our		wan liata	x==		
SDT vstem ent log N ministration stem restart ctory defaults port / Export config. mware update gional settings		port all proj n an icon.	gram lists	×III CSV	XLS	

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

4.2.4 - "Input" page

At the "Input" page (Figure No 4) the user is able to select the working mode for each input.

Status	Input					
ieneral Irogram list lock diagram	Input 1	Input 2 Input 3	input 4			
Setup	Settings			Status		
nput S configuration	Tuner	DVB-S/S2 🗸		Tuner	Locked	Re-lock
rogram selection Dutput		IF		Bit rate	42501 Kbps	
 RF output IP streaming TS settings 	Frequency	10891 MHz	(11700 12750)	Signal strength	46%	
• NIT • SDT	Symbol rate	22000 ksps	(1000 55000)	Signal quality	51%	
	LNB voltage	Horizontal (18V) 🗸				
System vent log	Band	Low 🗸				
AN dministration ystem restart	DiSEqC	Port C 🐱				
actory defaults nport / Export config. irmware update tegional settings fro		Apply	Refresh			
					Refresh E	ivery 5 sec 🗸 Now

There are four tabs, one for each input. The user is able to select the working mode of each input as follows:

For Satellite signal reception the user must select DVB-S/S2/S2X mode:

- 1. Tuner Enabled/Disabled Enable or disable the specific tuner
- 2. SAT or IF frequency Select how to insert the SAT frequency
- 3. Symbol rate Insert the symbol rate
- 4. LNB voltage Select the LNB voltage (13V,18V, OFF)
- 5. Band Select the appropriate SAT band (works only if IF frequency is selected as input method)
- 6. DiSEqC Select DiSEqC A, B, C, D
- 7. PLS Enter the PLS number of the stream

Multi-stream section

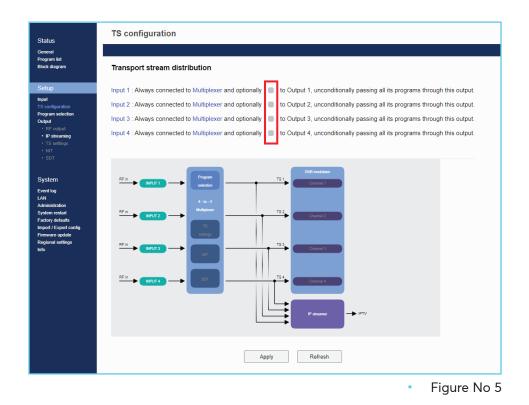
In case the tuner is lock to a satellite multi-stream transponder the first available stream will be chosen by default. The user is able to freely select which stream he wants to receive/ distribute from the Stream ID selection area. Moreover, in case PLS is needed the user is able to set the PLS from the available field.

Tuner status

For each input the MLF-201 provides several information such as tuner status (Locked/Unlocked), total bitrate, signal strength, quality etc.

4.2.5 - "TS configuration" page

At the "TS configuration" page (Figure No 5) the user is able to setup the by-pass mode of the device.



Bypass Mode

With the term "Bypass" we mean that the device is able to receive the transport stream (TS) from one input and send it to one output (modulator) without doing any kind of multiplexing. In this case, all PIDs or programs are not able to be changed and there are transfer transparently to one output.

The user is able to select if Input No 1,2,3 or No 4 wants to be send to Output No1,2,3 or No4 respectively using bypass mode by selecting the appropriate check box. (Figure No 5)

4.2.6 - "Program Selection" page

At the "Program Selection" page (Figure No 6) the user is able to select any program from any input and assign it to any output using the "pool" technology.

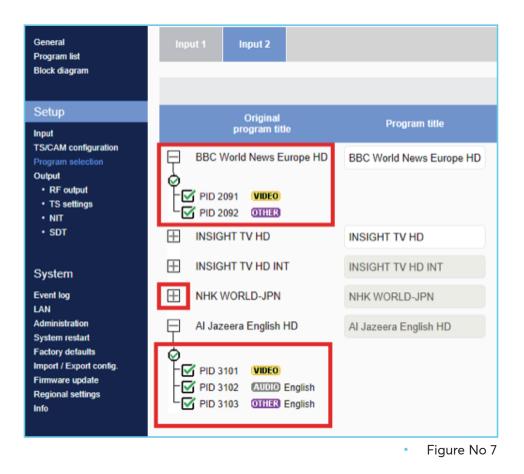
ral am list : diagram	Input 1 Input 2	Input 3 Input 4						
			Multiple	exer				
qı	Original program title	Program title	Original Service ID	LCN 11023	Bandwidth (Kbps)	Encrypted	Output	Output Service ID
onfiguration am selection	rbb Brandenburg H	D rbb Brandenburg HD	10350	0	7918	1	TS OUT 1 🗸	10350
ut ⊱Foutput	H rbb Berlin HD	rbb Berlin HD	10351	0	7918	_	TS OUT 1 🗸	10351
S settings	H MDR Sachsen HD	MDR Sachsen HD	10352	0	4853	1	TS OUT 1 🗸	10352
IT DT	H MDR S-Anhalt HD	MDR S-Anhalt HD	10353	0	4853	_	TS OUT 1 🗸	10353
tem	H MDR Thüringen HD	MDR Thüringen HD	10354	0	4853	1	TS OUT 1 🗸	10354
tlog	🕂 hr-fernsehen HD	hr-fernsehen HD	10355	0	10728	1	TS OUT 1 👻	10355
vare update onal settings								
	Status Bitrate (Max. TS OUT 1 120000 TS OUT 2 120000	Kbps) Peak Current detection 38547	Payload 32% 32%	Refr	esh			
	Bitrate (Max. TS OUT 1 120000	Kbps) — Peak Current detection 38547	Payload 32%	Refr	resh			

There are four (4) tabs, one for each input. Each tab depicts all the TV and Radio programs from the input that has being selected during the "Input page" processes.

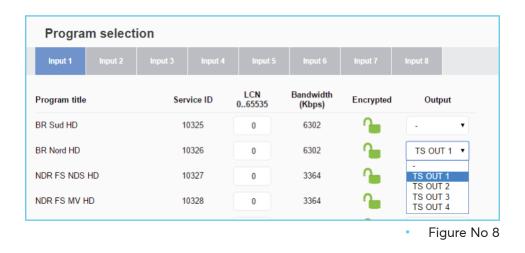
When the user selects one input, the device's multiplexer does a real time analysis and depicts the program list from this specific input. For each program the MLF-201 provides the following information/options:

- Original Program Title which is the name of the program
- Program Title The ability to enter a custom name for this specific program
- Original Service ID which is the original 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 in Kbps
- Encrypted which depicts if the program is encrypted or not
- Output To select in which the program must be assinged
- Output Service ID The user is able to provide custom Service ID number

Each program title has a small cross at the left which can be expanded if the user will click on it. During this procedure, all the available PIDs of this specific program are reveled (Figure No 7). In this case, the user is able to select/deselect which PID want to be outputted.



Using the Drop-down menu from "Output" column (Figure No 8) 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 his own 4 custom multiplex in the output



Caution!

The number of programs that the MLF-201 is able to distribute depends on the resolution (SD, HD, 4K etc.), the compression (MPEG2, H.264 etc...) and in general from the total bitrate of each program.



The status section in (Figure No 9) provides a general idea to the user of the current payload (according to the selected programs) comparing it 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.

Peak Detection mechanism

As shown in Figure No 8 there is a colored indicator of the peak detection mechanism, for each output transport stream. This indicates if any overflow has occurred on modulator's output bitrate with the following colors:

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

4.2.7 - "IP streaming" page

At "IP streaming" section the user is able to setup the IP streamer of the device (Figure No 10).

Status	IP strea	ming				
General Program list	IP settings	TS OUT 1	TS OUT 2	TS OUT 3	TS OUT 4	
Block diagram	Setup					
Setup Input	IP address	192.168.1.2	20			
TS configuration Program selection Output	MAC address	54:10:ec:6d	bd:27			
 RF output IP streaming TS settings 		A	pply			
• NIT • SDT	Status					
System	TS OUT 1	3 SPTS out of	16			
Event log	TS OUT 2	1 SPTS out of	16			
LAN Administration	TS OUT 3	2 SPTS out of	16			
System restart Factory defaults Import / Export config. Firmware update	TS OUT 4	2 SPTS out of	16			
Regional settings Info						

Figure No 10

In Figure No 10 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

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.

itus	IP	strea	ming					
eral ram i st k diagram	IP s	ettings	TS 1	TS 2	TS 3	TS 4		
	9 ھ	SPTS	MPTS					
tup	Servi	ce name		Encrypted	IP out	Destination IP address	Destination port	Protocol
pram selection put RF output	BR N	ord HD		1				×
IP streaming TS settings	arte H	D		1		230.0.0.1	1240	RTP •
stem								
ninistration								
tem restart tory defaults ort / Export config.		Appl	y					
ware update	Statu	IS						
	TS1	1 SPT	S out of 16					
	TS2	MPTS						
	TS3	1 SPT	S out of 16					
	TS4	2 SPT	S out of 16					
							•	Figure I

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

By selecting e.g. the TS1 tab (Figure No 11) 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 IP MPTS 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 MLF-201, the user is able to setup the IP streamer of the device.

4.2.8 - "TS settings" page

At this section (Figure 12), the user is able to setup all the TS settings of the four multiplexes at device's output.

al m list		TS ID (1-65535)	Network ID (1-65535)	Original net ID (1-65535)	Network name (20 characters max.)	NIT	NIT version	SDT
fiagram	Output 1	101	102	103	DTV	Default	× 11	Default
D	Output	101	102	105	DIV	Delauli		Delaun
v vote ot	Output 2	104	105	106	DTV	Global	~	Default
M configuration m selection	Output 3	107	108	109	DTV	Custom	~	Custom
output	Output 4	110	111	112	DTV	Default	~ 14	Default
г T	Global NIT	Of	f v					
2m	LCN provid	ler Eu	ropean 🗸					
og								
stration n restart	-	Apply		Refresh				
r defaults / Export config. re update al settings								

For each multiplex output the user can setup the following settings:

TS ID:	Which is the ID No of the specific multiplex (165535)
Net ID:	Which is the Net ID No of the specific multiplex (165535)
Original Net ID:	Which is the Org. Net ID No of the specific multiplex (165535)
Network Name:	Which is the network name of the specific multiplex
NIT:	Select from Global, Default and Custom options
NIT version:	Select the NIT version
Global NIT	Select the input source of Global NIT. In this case NIT will be the same for all outputs.
LCN provider:	Choose the appropriate LCN provider (EACEM, ITC, Nordig, APN)

4.2.9 - "NIT" page

At this section (Figure 13), the user is able to create custom NIT table for each of the four outputs of the device. Moreover, this section offers the ability to export / import a NIT table.

agram	_	1	output 2	Output 3	Output 4	Export											
	NIT	node		Defa	ult												
	Netw	ork nam		DT			NIT version	11									
configuration selection	Netw	ork ID		102			LCN provider E	uropean									
output settings		Curre	int settings														
														5	Services		
ni.			TSID	Orig. Net ID	Freq (MHz)	Bandwidth	Constellation	Transmission mode	Code rate	Guard interval	Private data		Svc ID	LCN	Туре	Visible	Manag
1		1	101	103	474.00	8 MHz 👻	64-QAM 👻	8К ♥	7/8 🛩	1/32 🛩	60000028	1	5001		01 🛩		0 0
ration												2	5010		19 👻		00
defaults Export config cupclate i settings																	

For more information on how to create a custom NIT table please refer to "Lemco NIT creation guidelines.pdf" document in Lemco's website.

4.2.10 - "SDT" page

At this section (Figure 14), the user is able to create custom SDT table for each of the four outputs of the device. Moreover, this section offers the ability to export / import a SDT table.

us	_				ion Table		_						
an int	Ou	tput 1	Output 2	Output 3	Output 4	Export							
diagram	SDT	mode :	Default										
ıp.			TSID	Orig. Net ID	Table	Version		A		rvices			
M configuration	17	1	101	103	type Actual 🛩	1	1	Svc ID 5001	Service name BBC World News Europ	Provider name SES ASTRA	01	type	Manage
arn selection 4		1	101	105	Actual								
Foutput							2	5010	INSIGHT TV HD	SES ASTRA	19	~	80
S settings IT													
em													
log													
istration													
m restart													
ry defaults t / Export config.													
are update nal settings													
										-			
	C	Add	O Dele	le l	C Export	(Q) Imp			Apply Refresh				

Figure No 14

For more information on how to create a custom SDT table please refer to "Lemco SDT creation guidelines.pdf" document in Lemco's website.

System

4.2.11 - "Event log" page

At "Event log" page (Figure No 15) 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.

	y severity 🕅 High	Mediur Mediur	m Info Info	
Delete	selected events.			
	u cannot select arbitrary or ind	Evidual avante		
	is older than the selected even			
	Date & time	Severity	Description	
	2019-02-13, 15:56:50	Info	User logged in	_
	2019-02-13, 15:55:59	Info	User logged out	
	2019-02-13, 15:54:52	Info	User logged in	
	2019-02-13, 15:47:30	Info	User logged out	
	2019-02-13, 15:46:12	Info	User logged in	
	2019-02-13, 15:44:33	Info	User logged out	
	2019-02-13, 15:43:05	Info	User logged in	
	2019-02-13, 15:40:32	Info	User logged out	
	2019-02-13, 15:39:26	Info	User logged in	
	2019-02-13, 15:23:28	Info	User logged out	
	2019-02-13, 15:22:22	Info	User logged in	
	2019-02-13, 15:18:46	Info	User logged out	
	2019-02-13, 15:17:23	Info	User logged in	
	2019-02-13, 14:25:28	Info	User logged out	
	2019-02-13, 14:23:27	Info	User logged in	
	2019-02-13, 14:06:32	Info	User logged out	
1773	0040 00 40 44-04-50	1-6-	I leas lossed in	•

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:

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

4.2.12 - "LAN" page

At "LAN" page (Figure No 16) the user is able to setup all the parameters of the LAN control of the device as follows:

Status	IP address	configuration					
General Program list	All fields are required if DHCP is disabled.						
Block diagram	Enable DHCP						
Setup	IP address	192.168.1.200					
Input Program selection Output	Subnet mask	255.255.255.0					
> RF output	Gateway	192.168.1.1					
> IP streaming > TS settings	Primary DNS	192.168.1.1					
System	Secondary DNS	0.0.0.0					
LAN							
Administration System restart	Port	80					
Factory defaults Import / Export config. Firmware update	MAC address	d8:80:39:30:6c:2a					
Info		Save					
		• Figure No					

- DHCP Enable or disable DHCP
- IP address: Set a static IP address for controlling the device
- Subnet mask: Set the specific Subnet mask
- Gateway: Set the gateway's IP address
- Primary DNS: Set the IP address of the primary DNS
- 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

4.2.13 - "Administration" page

At "Administration" section (Figure No 17) the user is able to change the default password of the webserver.

Status	Administration		
General Program list Block diagram	Enter a new username ar	nd password in the	e fields below:
.	New username	admin	
Setup Input	New password	••••	Ð
TS/CAM configuration Program selection Output	Confirm new password		٩
 RF output TS settings NIT 	Keep username & password after applying factory default		
• SDT		Арр	bly
System			
Event log LAN Administration			
System restart Factory defaults Import / Export config.			
Firmware update Regional settings Info			
	Copyright © 2019 LEMCO		

Caution!

• 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".

4.2.14 - "System restart" page

At "System restart" section (Figure No 18) the user is able to apply a full reset to the device.

Status	System restart	
General Program list Block diagram	Click <u>Restart</u> to cause the device to perform a software restart.	
	Wait a minute before logging into the device again.	
Setup	Restart	
Input Program selection		

4.2.15 - "Factory default" page

In "Factory default" section (Figure No 19) the user is able to apply a factory default reset to the device and select if the event logs should be deleted or not.

Status	Factory defaults
General Program list Block diagram	Click the following button to cause the device to revert all settings to factory defaults.
Setup Input TSICAM configuration Program selection Output • RF output • TS settings • NIT • SDT	Load factory defaults Erase all event logs after applying factory defaults.
System	
Event log LAN Administration System restart Factory defaults Import / Export config. Firmware update Regional settings Info	Copyright © 2019 LEMCO
	• Figure No 19

4.2.16 - "Import/Export Config" page

At "Import/Export Config" section (Figure No 20) 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.

Status	Export configu	ration		
General Program list Block diagram Setup Input Program selection Output > IP streaming	Click the icon below to do DAT		tion file from the device to	your computer.
System	To upload a configuration	file (*.dat) from your o	computer to the device, fo	llow the steps below:
Event log LAN Administration	1. Select file	Choose file	(No file chosen)	
System restart Factory defaults	2. Start file upload	Upload file		
Import / Export config. Firmware update Date & time Info	 Wait for confirmation. Copyright © 2019 Lemco 	The device will restart	L	
			•	Figure No 20

4.2.17 - "Firmware update" page

In "Firmware update" (Figure No 21) section the user is check if there is any new firmware for the device. In case of new firmware, the user is able to proceed with the firmware update procedure.

Caution!

For the above procedure a internet connection is mandatory.

Status	Firmware update
General	
Program list	
Block diagram	
	Check for firmware update
Setup	
Input	
TS/CAM configuration	
Program selection	
Output	
 RF output TS settings 	
• NIT	
• SDT	
System	
Event log	
LAN	
Administration System restart	
Factory defaults	
Import / Export config.	
Firmware update	
Regional settings	
Info	
	Copyright © 2019 LEMCO

Figure No 21

4.2.18 - "Date & Time" page

In "Regional settings" (Figure No 22) 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 time zone of his country and his region.

Status	Regional settings
General Program list Block diagram	Date & time
Setup Input TS/CAM configuration Program selection Output • RF output • TS settings • NIT • SDT	System date & time: 2020-11-10, 12:48:22 System uptime: 0d 1h 16m 14s Clock source From Input 2 ~ From NTP server Default Custom
System	Timezone UTC 🗸
Event log LAN Administration System restart Factory defaults	Apply
Import / Export config. Firmware update Regional settings Info	Region
	Please select your region Europe V
	Apply
	Copyright © 2019 LEMCO
	Figure No 22

4.2.19 - "Info" page

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In "Info" (Figure No 23) section the user is able to see the serial No of the device as well as firmware and hardware versions.

Status	Info Hardware and Firmware information	
General Program list		
Block diagram		
	Serial number	3333333333
Setup	Firmware version	1.198
Input TS/CAM configuration	Filliware version	1.190
Program selection	Platform HW version	04040B0205550087
Output • RF output • TS settings	Platform FW version	0E66000000
• NIT • SDT	CI stack HW version	1.0.25 -
	CI stack FW version	1.0.84
System	VHDL version	11.18
Event log LAN Administration	Controller MAC address	04:91:62:12:ea:95
System restart Factory defaults Import / Export config. Firmware update Regional settings Info		
	Copyright © 2019 LEMCO	
		• Figure No 23

5. TECHNICAL SPECIFICATIONS

Input Specifications

Input

Туре	2 x DVB-S/S2/S2X
Frequencies	9502150 MHz
Connector	75Ω - F, female

LNB

Voltage	OFF / 13V / 18V
Current	< 400mA
22 KHz signal	On / Off
-Voltage	0.65V ±0.35V
-Frequency	22 KHz ±4Hz
-DiSEqC	1.0 (Port A, B, C, D)

DVB-S

Standard	EN 300-421 V1.1.2
Symbol Rate	1 - 55 MBaud
Roll off factor	0.2, 0.25, 0.35
Code Rate	1/2, 2/3, 3/4, 5/6, 7/8 (automatic)
Spectral Inversion	Reverse, Non-reverse (automatic)

DVB-S2

Standard	EN 307-421 V1.2.1	
Constellation	QPSK, 8PSK (automatic)	
Symbol rate	1 - 55 MBaud (QPSK)	
	1 - 45 MBaud (8PSK)	
Roll off factor	0.2, 0.25, 0.35 (automatic)	
Code rate	1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 8/10 (QPSK- automatic)	
	3/5, 2/3, 3/4, 5/6, 8/9, 9/10 (8PSK- automatic)	
Spectral inversion	Reverse, Non-reverse (automatic)	

DVB-S2X

Standard	EN302 307-1 V1.4.1
Constellation	QPSK, 8PSK (automatic)
Symbol rate	1 - 45 MBaud (QPSK)
	1 - 30 MBaud (8PSK)
Roll off factor	Από 0.05 to 0.35 (automatic)
Code rate	1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 8/10 (QPSK- automatic)
	3/5, 2/3, 3/4, 5/6, 8/9, 9/10 (8PSK- automatic)

Output Specifications

Transport Stream Processing

Services	User selection by service names
Automatic Regeneration	PAT, CAT, SDT, PMTs, EITs tables
PCR	re-stamping
Bypass Mode:	Yes

IP Streaming

ii Streaming	
IP TS Out	Yes
Protocol	UDP / RTP (Multicast/Unicast)
Speed	1Gbit
IGMP support	Yes, v2, v3
Туре	MPTS (up to 4 TS)
	SPTS (up to 64 programs)
Max. Bitrate	480Mbps max. (in IP only mode)

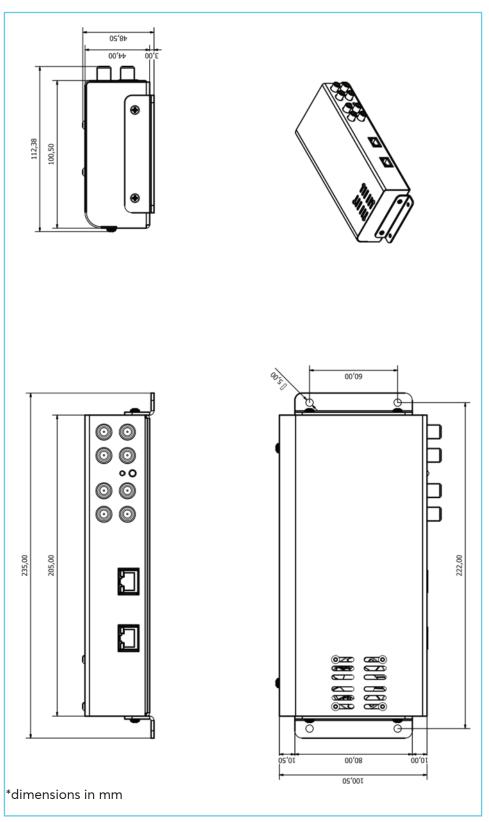
Programming Interface

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

General

Power Supply	2 x +12VDC
Power supply consumption	1.8A max.
Operating Temperature	0 °C to 40 °C
Storage Temperature	-10 °C to +70 °C
Humidity	Up to 90%
Dimensions	235 x 115 x 48 mm
Weight	0.45 Kg

6. **DIMENSIONS**



7. WARRANTY TERMS & CONDITIONS

Lemco provides warranty for its products under the following terms and conditions:

1. Products covered by Lemco warranty

Products covered by Lemco warranty policy are products solely produced by Lemco and labeled under the Lemco logo, as well as products sold by Lemco and labeled under the Lemco Addons logo. No third-party products or parts of products are covered by Lemco warranty policy. Lemco bears not responsibility for third party products sold along with Lemco products. Such third-party products are covered by the warranty policy of their manufacturer. Lemco warranty does not cover any accessories and/or consumables that come along with its products (i.e. cables, batteries, remote controls etc.).

2. Liability

Lemco accepts no liability whatsoever for loss of profit, loss of associated product, loss of goodwill or other costs arising from any malfunction of the product in question before and after repairs are completed to return the product to normal operation.

3. Clauses

Equipment repaired under warranty shall be warranted to the end of the original warranty period - including any parts replaced.

4. State of the products

Warranty covers defective products. Defective products are products unfit for proper use due to a defect existing already at the time of their purchase. Any defect attributable to normal wear and tear or improper use by the customer does not constitute the merchandise defective and is not covered by the conditions of defective merchandize warranty.

It rests in Lemco's absolute discretion to determine whether the defect of the product is attributable to a misuse by the customer or is attributable to a defect existing already at the time of purchase.

5. Warranty does not cover any problem resulting from:

- a. Mechanical or electric damages resulting from incorrect installation, configuration, usage or other activities inconsistent with the operation manual or contradictory to technical specifications attached to the device;
- b. Damages caused by acts of God, floods, fires, lighting, electrostatic discharge, heat, humidity beyond product specifications, accident, abuse, neglect or other natural disasters, wars, unexpected events, inappropriate voltage, defective supply materials or other external factors;
- c. The device that has been tempered with by the Warranty beneficiary or any other person in any way, including reconfiguration, repair, willful constructional variations, modifications and adjustments;
- d. The device with serial numbers and/or the Guarantor seals damaged or illegible;
- e. The activities specified in the operation manual, which remain the sole responsibility of the Customer in his own capacity and at his own expense;
- f. Defects resulting from the usage of improper or non-genuine supply materials;
- g. Damages due to the user's fault or lack of knowledge;
- h. Defective functioning of the device caused by a conflict or incompatibility between software applications installed on the damaged device or on the equipment, which the device permanently cooperates with in accordance with the intended purpose of the device

6. Duration of the warranty

Lemco warranties for its products labeled under the "Lemco" logo for a period of five (5) years after their purchase. Lemco warranties for its products labeled under the "Lemco Addons" logo for a period of two (2) years after their purchase.

For the whole duration of the warranty period, and provided the product meets warranty requirements under paragraph No4 above, Lemco is obliged to repair or exchange the product at no cost to customer.

7. Warranty Claims

Claims under warranty must be reported and returned to Lemco within 30 days from the date of detection and need to specify at least the following information via the RMA procedure that can be found at www.lemco.gr (additional information may be requested):

- Details of the defective Products; and for System warranty also details of other used components.
- Installation date, invoice date.
- Detailed problem description, number and %, date and code of defects.
- Equipment operating hours.
- Photos (and videos if possible) of defective product.

Lemco does not bear any responsibility for the transportation of the products to its premises and/or back to customer's premises. Customer shall be solely responsible to ensure a safe transportation of its products at Lemco's premises.

After the product is received, Lemco Service Department will examine whether the product is covered by warranty and will notify customer respectively. Lemco undertakes all best-efforts obligation to inform customer within twenty-four [24] hours after the product has been delivered to Lemco.

If the product is covered by warranty, Lemco will repair or replace it and send it back to customer within 15 working days from receiving the product (depending on product's overall condition) at no repair costs to customer.

Lemco can charge Client for returned Products that are not found to be defective or non-conforming, in addition to shipping- test-, and handling costs associated therewith.

8. Competent Courts - Jurisdiction

The present warranty terms are construed in accordance to Greek law and the Courts of Athens shall have exclusive jurisdiction for any dispute arising out of or in connection with the present warranty terms.

Lemco reserves the right to refuse to provide any Warranty services if it would result in a breach of applicable laws.

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.

DTV - Headend | MLF-201 Manual

9. NOTES

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Address: Latheas 46, 13678, Acharnes, Greece Tel: +30 210 2811401, +30 210 2405237 - Fax: +30 210 2825755 Email: info@lemco.gr - Website: www.lemco.gr

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