

Migration Guide from firmware V2 to V3

This document gives you a short overview of the differences between V2 and V3 firmware.

Incompatibilities

How do I determine the Firmware Version?

<u>GUI</u>

<u>Overview Page</u> <u>Selection Groups / Multi Edit</u> <u>Preset Editor</u> <u>Logging</u>

DSP functionality

EQ Limiter Input Mixer Mute Groups Output Routing Volume / Gain

<u>API</u>

URL Query based API (in V2 firmware) REST based API mDNS Hostname resolver SNMP AES70 / OCA Remote Mute Server IDFM (Innosonix Discovery & Firmware Manager)

Upgrading V2 to V3

IBAN: DE 06540502200000525758 BIC: MALADE51KLK You can find us on: www.innosonix.de www.facebook.com/innosonix.gmbh www.instagram.com/innosonix.gmbh

Incompatibilities

There are some Incompatibilities between V2 and V3 Firmware, so have a look at those sections to verify that V3 satisfies your requirements.

<u>API</u>

Output Routing

Volume / Gain

Presets

DSP functionality

How do I determine the Firmware Version?

The Firmware V2 Version is located on the Web Page in the right upper corner and is indicated by the string "V2.xx.xx"

BUILD V2.10.0-5305

On the V3 Firmware, it's located in the lower-left corner overview Page and is indicated by the "Version 3.x.x" string

VERSION: 3.1.2

GUI

Complete rework of the GUI which offers a much easier user interface with easy access to the most common parameters. The webpage is also optimized for different window sizes and tablet / mobile phone views.

Overview Page

V2:

N.												
	MAST REMO SYNC AMP S PSU L	ERMUTE DTE MUTE STATUS IMIT	•			MA	\32D-Demo					innosonix BUILD V210.0-5306 SERIAL 240818000117
	OVERVIEW DSP CONFIG DEVICE CONFIG PRESETS SOFTWARE UPDATE					SOFTWARE UPDATE						
	СН	NA	ME INPUT	PHASE	VOLUME	LEVEL	FIR	EQ	LIMIT	GR	DELAY	AMP SP
	1	Ch 1	DANTE 1	Ø	0.2dB	-55.7dB	Bypass	E	L	0dB	0	🧕 27.5°C 🔎
	2	Ch 2	DANTE 2	Ø	0dB	-56.2dB	Bypass	E	L	0dB	0	🧶 27.5°C 👱
	3	Ch 3	DANTE 3	Ø	0dB	-56.2dB	Bypass	E	L.	0dB	0	🔍 26.5°C 👱
	4	Ch 4	DANTE 4	Ø	0dB	-56.2dB	Bypass	E	L	0dB	0	🧶 26.5°C 👱
	5	Ch 5	DANTE 5	Ø	OdB	-56.2dB	Bypass	E	L.	0dB	0	🧶 26°C 🖉
	6	Ch 6	DANTE 6	Ø	OdB	-56.2dB	Bypass	E	L.	0dB	0	🧶 26°C 🖉
	7	Ch 7	DANTE 7	ø	OdB	-56.2dB	Bypass	E	L.	0dB	0	🧕 25.5°C 🧶
	8	Ch 8	DANTE 8	Ø	0dB	-56.2dB	Bypass	E	ι.	0dB	0	🜻 25.5°C 🧶
	9	Ch 9	DANTE 9	Ø	0dB	-56.2dB	Bypass	E	L.	0dB	0	🧶 26.5°C 📒
	10	Ch 10	DANTE 1	Ø	0dB	-56.2dB	Bypass	E	Ц.,	0dB	0	🜻 26.5°C 🧶
	11	Ch 11	DANTE 1	Ø	0dB	-56.2dB	Bypass	E	Ц.,	0dB	0	🧕 27.5°C 💄
	12	Ch 12	DANTE 12	2 Ø	0dB	-56.2dB	Bypass	E	Ц.,	0dB	0	🜻 27.5°C 🧶
	13	Ch 13	DANTE 1	Ø	OdB	-56.2dB	Bypass	E	L	0dB	0	● 25.5°C ●
	14	Ch 14	DANTE 14	4 Ø	0dB	-56.2dB	Bypass	E	Ц.,	0dB	0	● 25.5°C ●
	15	Ch 15	DANTE 1	Ø	OdB	-56.2dB	Bypass	E	L.	0dB	0	
	16	Ch 16	DANTE 1	5 Ø	0dB	-56.2dB	Bypass	E	L	0dB	0	● 26°C ●
	17	Ch 17	DANTE 1	Ø	OdB	-56.2dB	Bypass	E	L.,	0dB	0	🧶 23.5°C 📒

V3:

69 in	Innosonix overview interfaces device mutegroups presets logging								MA32	2LP-Office				ä	ALL OKAY PSU LIMIT
		GROUPS	1: Speak	er (3)		×	1		MAST	ER VOLUME	0.	0 dB	! ₇₂	b 24	◄١)
	-	СН	NAME	POWER	INPUT	MUTE	VOLUME	PHASE	DELAY [sample]	EQ	LIMIT		LEVEL [dB]	AMP STATUS	SPEAKER STATUS
	\checkmark		Office Right		Σ	۹)	-25.0 dB	ø	0	\geq		0.0	-48.9 '30 '20 '10 b	ОК	ОК
			Office Left	ዑ	Σ	۹)	-25.0 dB	ø		\geq		0.0 -60	-48.2 130 120 110 b		
	\checkmark		Office Sub	ዑ	Σ	(ا	-22.0 dB	Ø	96	\geq		0.0	-43.3 130 120 110 b		ОК
	✓		CH 4		DANTE 4	4 1)	0.0 dB	Ø	0	⊵		0.0 -60	-16.8 -130 -20 -10 b		
			СН 5		DANTE 5	×	0.0 dB	Ø		\geq		0.0 60	UFL 130 120 110 b		OFF
	\checkmark		СН 6		DANTE 6	()	0.0 dB	Ø	0	\geq		-22.8 -60	-40.9 -30 -20 -10 b	OFF	OFF
			СН 7	Ċ	DANTE 7	(ا	0.0 dB	ø		\geq		0.0 -60	-17.9 130 120 110 b		OFF
	\checkmark		СН 8	ل	DANTE 8	(ا	0.0 dB	Ø	0	⊵	Ł	0.0 -60	-16.5 -30 -20 -10 b		OFF
					DANTE 9	(ا	0.0 dB	ø		\geq		-10.8 -60	-27.6 -30 -120 -10 b		
				ዑ	DANTE 10	۹)	0.0 dB	ø		\searrow		0.0 -60	-16.5 -130 -120 -110 b		OFF
				ዑ	DANTE 11	(ا	0.0 dB	Ø		\searrow		0.0 -60	-16.5 130 120 110 b		
					DANTE 12	()	0.0 dB	ø		\succeq		0.0 -60	-16.5 -130 -20 -110 b		OFF
					DANTE 13	20	0.0 dB	ø		\searrow		0.0 60	UFL 130 120 110 b		
	\checkmark		CH 14		DANTE 14	×	0.0 dB	ø	0	\searrow		0.0 60	UFL 130 120 110 b		OFF

- Sample synchronous Level and Gain Reduction meter with ~100ms update rate
- Upload / Download of channel names via .csv file for easy naming

Selection Groups / Multi Edit

Multiple channels can be selected by clicking on the "ok hook" symbol. This feature enables the "Multi Edit" functionality indicated by the active headline buttons (NAME, POWER, ...).

The selection/deselection of all channels can be achieved using the "ok hook" / "hyphen" symbol on the headliincne row.

G	ROUPS	1: Speaker	r (3)		~ 1	B
\checkmark	СН	NAME	POWER	INPUT	MUTE	VOLUME
\checkmark	1	Office Right		Σ	4))	-25.0 dB
\checkmark	2	Office Left	ዑ	Σ	◄١)	-25.0 dB
\checkmark	3	Office Sub	ዑ	Σ	◄ 1)	-22.0 dB
\checkmark	4	СН 4	С	DANTE 4	◄ 1)	0.0 dB
\checkmark	5	СН 5	Ċ	DANTE 5	×	0.0 dB

	GROUPS	1: Speaker	r (3)		~ <u>1</u>	✓ ▲ 🖺		
-	СН	NAME	POWER	INPUT	MUTE	VOLUME	F	
 ✓ 	1	Office Right	ር በ	Σ	◄))	-25.0 dB		
\checkmark	2	Office Left		Σ	◄ ۱)	-25.0 dB		
\checkmark	3	Office Sub		Σ	◄ ۱)	-22.0 dB		
\checkmark	4	CH 4	С	DANTE 4	◄ 1)	0.0 dB		
✓	5	CH 5	С С	DANTE 5	×	0.0 dB		

The desired selection can also be saved as a group, by choosing a group slot (1-16) and pressing the "DISK" on the right side of the dropdown menu. An already saved selection can be applied by pressing the "ARROW UP" button.

GROUPS	4: GROUP 4 (0)		▲ ●				
– сн	NAME POWER	INPUT	MUTE	VOLUME			
√ 1	Office Right	Σ	(ا	-25.0 dB			
✓ 2	Office Left	Σ	⊲))	-25.0 dB			
✓ 3	Office Sub	Σ	⊲۱)	-22.0 dB			

Clicking on the Headline opens the "Multi Edit" Popup, clicking on the actual channel setting opens the "Single Channel" Popup, which shows more detailed information in some tabs.

C	HANNE	L1-3					1: Spea	ker (3)	~ <u>1</u>		×
	NAME	POWER	INPUT	MUTE	VOLUME	PHASE	DELAY	EQ	LIMIT	SPEAKER	
		SELECTED	E	-25.0 dB	<	-25.0			SET		
	СН	NAME	STATE								
	1	Office Left		-25.0 dB							
	2	Office Left		-25.0 dB							
	3	Office Sub		-25.0 dB							



Preset Editor

NOTE: There is currently no Preset Storage on the devices with production date before Q1 2021, thus calling a predefined set of settings with a single API call is not possible. This is currently a difference compared to the V2 firmware (Presets / Channel Presets)

The new Preset Editor allows you to load either device presets, channel presets or files.

GENERATE PRESET				IMPORT PRESET
DEVICE PRESET	1	CHANNEL PRESET	CH1 - Office Right 🖌 🛨	Datei auswählen Keine ausgewählt
PRESET STORAGE				
PRESETS	MA32LP-Office_preset	* ± ✓		

Once a Preset is loaded, the editor shows all settings included. It's now possible to deselect/select different settings to modify the editor's actual content before it's applied to the device/channel or downloaded as a file.

Device Preset can only be applied to the whole Device since it includes everything.



Channel preset instead, can be applied to multiple channels.

EDIT PRESET								
EXPAND COLLAPSE	SELECT ALL	UNSELECT ALL						
🔺 🖌 name								
🔺 😑 dsp								
▼ 🖌 speaker								
threshold -								
debounce -								
📈 pilote50								
mute - fals								
🔺 🚺 ampenable								
APPLY TO CHANNEL	s CH	H1 - CH 1 H2 - CH 2						ŕ
	CH CH	13 - CH 3 14 - CH 4						.
			1					
DOWNLOAD SETTINGS	MA32D-00022	1_CH 1_preset				Mute during update	2:	APPLY SETTINGS

Logging

A new Syslog client is implemented, which shows imported events. The logging events will be extended in further releases, so it's not complete yet. MA32 devices shipped before 2021, may not have an RTC (real-time clock) and SD-Card for log storage included.

Thus using the log on those devices may not be persistent after a power cycle, but it still shows all messages available. Time is acquired via the NTP-protocol, if an internet connection is available, but can also be set manually.

OVERVIEW	INTERFACES DEVICE MUTEGROUPS	5 PRESETS LOGGING		MA32LP-Office	(
	SYSLOG				
	NUMBER LINES REFRESH E	EXPORT CLEAR SYSL	OG	Search	ţ≞.
	2021-01-28 11:48:42	informational	Device	Reboot for update	
	2021-01-28 11:44:47	informational	Device	Power on with firmware: 3.1.1	
	2021-01-28 11:41:41	informational	Device	Reboot for update	
	2021-01-28 11:18:31	informational	Device	Power on with firmware: 3.1.1	
	2021-01-28 11:15:23	informational	Device	Reboot for update	
	2021-01-27 17:20:15	informational	Device	Power on with firmware: 3.1.1	
	2021-01-27 17:17:10	informational	Device	Reboot for update	
	2021-01-27 16:34:08	informational	Device	IP mode set to STATIC IP with ip 10.77.180.90 subnet 255.255.0.0 gateway 10.77.178.1	L.
	2021-01-27 14:29:25	informational	Device	Power on with firmware: 3.1.0	
	2021-01-27 14:26:15	informational	Device	Reboot for update	
	2021-01-26 20:17:28	informational	Device	Power on with firmware: 3.1.0	
	2021-01-26 20:14:21	informational	Device	Reboot for update	
	2021-01-21 13:07:09	informational	Device	IP mode set to STATIC IP with ip 10.77.180.90 subnet 255.255.0.0 gateway 10.77.178.1	H.
	2021-01-21 13:06:57	informational	Device	IP mode set to STATIC IP with ip 10.77.180.91 subnet 255.255.0.0 gateway 10.77.178.1	27

DSP functionality

Feature	V2	V3
EQ	5x IIR	32x IIR
Limiter	1x Voltage, 1x Clip	 1x Current, which limits the actual current flows into the speaker. [Ampere Peak] 2x Voltage, with variable time constants [Output Volt Peak] 1x Active Power, multiplication of Output Voltage * Output Current [Watt]
Input Mixer	1x 16x16 Mixer which can sum up 16 Inputs Sources and supply them to 16 DSP channels	32x 16x1 Mixer Each DSP channel got its own Input Mixer. Thus, up to 16 Input Sources can be summed up with different gains for each individual amplifier channel.
Mute Groups	8 Mute Groups	16 Mute Groups

With firmware V3, we improved the DSP capacity of the following parameter:

EQ



Complete EQ rework which improves the usability.

Limiter

CHANNEL	_9 \				~	± ×
NAME	POWER INPUT	MUTE	VOLUME PHASE	DELAY EQ	LIMIT SPEAKER	
	REDUCTION [dB]	ENABLE	THRESHOLD [Ap]			
CURRENT	0 -50 -40 -30 -20 -10 0		1			SET
	REDUCTION [dB]	ENABLE	THRESHOLD [Vp]	ATTACK [ms]	RELEASE [ms]	
VOLTAGE 1	-19.0 -50 -40 -30 -20 -10 0		0.5	10	250	SET
VOLTAGE 2	0 -50 -40 -30 -20 -10 0		22	200	1000	SET
	REDUCTION [dB]	ENABLE	THRESHOLD [W]	ATTACK [ms]	RELEASE [ms]	
POWER	0 -50 -40 -30 -20 -10 0		20	500	1000	SET

Input Mixer

(HANNEL	1								v	± ×
	NAME	POWER	INPUT	MUTE	VOLUME	PHASE	DELAY	EQ	LIMIT	SPEAKER	
	2/16	INTERFACE						CHAI	NNEL GAIN [dB]	
E		AES3 1 (ASRC)						∨ 2	0.0	SET	CLEAR
	2	DANTE						∨ 64	0.0	SET	CLEAR
Si -	3	OFF						~ 1	0.0	SET	CLEAR
5 5 7 3		OFF MADI FIBRE MADI COAX 1 MADI COAX 2 DANTE AES3 1 (ASRC) SINUS 100Hz SINUS 200Hz SINUS 200Hz SINUS 200Hz SINUS 2000Hz SINUS 2000Hz	2					1 SI SI SI SI SI SI		160 130 120 0.0 130 120 160 130 120 6.4 - - 160 130 120 0.0 - - 160 130 120 160 130 120 129.2 - - 160 130 120 160 130 120 0.0 - - 160 130 120 0.0 - - 18.9 - - 0.0 - - 0.0 - - 0.0 - - 0.0 - - 0.0 - - 0.0 - - 0.0 - - 0.0 - - 0.0 - -	410 b

Up to 16 Input Sources can be summed up with individual gain values per channel.

Mute Groups

Mute Groups are derived from the saved selection groups.

CLANNEL GROUP		SOLO AUTO CLE	1 Office R	2 Office L	3 Office Sub	4 CH4	5 CH 5	6 CH 6	7 CH 7	8 CH 8	9 CH 9	10 CH 10	11 CH 11	12 CH 12	13 CH 13	14 CH 14	15 CH 15	16 CH 16	17 CH 17	18 CH 18	19 CH 19	20 CH 20	21 CH 21	22 CH 22	23 CH 23	24 CH 24	25 CH 25	26 CH 26	27 CH 27	28 CH 28	29 CH 29	30 CH 30	
		AR				*2	*2	*2	*2	*2	*2	*2	*2	ž	*2	×	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	
1 Speaker	MUTE	SOLO	~		~																												
2 unused	MUTE						~			~		~	~		~	~		~	~		~	~	\checkmark	~		~		v		~	~		
3 GROUP 3	MUTE																																
4 GROUP 4																																	
5 GROUP 5																																	
6 GROUP 6																																	
7 GROUP 7																																	
8 GROUP 8																																	
9 GROUP 9																																	
10 GROUP 10																																	
11 GROUP 11																																	
12 GROUP 12																																	
13 GROUP 13																																	
14 GROUP 14																																	
15 GROUP 15																																	
16 GROUP 16	MUTE	SOLO																															

Volume / Gain

NOTE: Volume Gain range is reduced in V3, which shouldn't be a big deal for most applications and are mostly API related.

	V2	V3
Master / Channel Gain	-100.00dB - +24.00dB	-72.0dB - +24.0dB

API

URL Query based API (in V2 firmware)

The API Calls relies on HTTP GET to specific URLs e.g.

http://10.77.180.90/cgi-bin/maxx_data_service.cgi?action=9 to trigger the desired function.

Note: The main API in V2 is not fully supported in V3 anymore! Only certain commands are kept to ensure compatibility with the existing installations.

Note: The Volume calls can still use the "legacy" range of -100.00dB - +24.00dB but when read back, it's truncated to the new range restriction (<u>Volume / Gain</u>)

In V3 supported "legacy" API calls:

- GET / SET master volume
- GET / SET master mute
- GET / SET channel volume
- GET / SET channel mute
- GET / SET channel power
- GET channel speaker status

A full list of all supported commands is available on each device's web interface.

REST based API

The new API in V3, which is also used by the Control-Webpage, is based on REST calls with JSON payload. Every parameter of the amplifier is controllable over this interface.

E.g. Channel 1 Volume:

HTTP GET http://10.77.180.90/settings/channel/1/dsp/volume would return a JSON payload with the current active value: {"value": -12.5 }

HTTP PUT http://10.77.180.90/settings/channel/1/dsp/volume with JSON as payload will set the volume.

A full list of all supported commands is available on the web interface of each device.

mDNS Hostname resolver

V3 Firmware now fully supports Hostname IP resolving via mDNS queries (like http://MA32D-Demo.local) implemented by the avahi-daemon.

Note: This could lead to conflicts during hostname resolving when the Dante Brooklyn Module in the amplifier is set to the same hostname as the amplifier itself.

So ensure that hostnames in your systems are unique.

SNMP

Note: An SNMP status interface like in V2 is not yet available in V3.

AES70 / OCA

Note: AES70 / OCA is not yet available in V3, existing installations which use that API has to stay with V2 Firmware or contact us for further information.

IDFM (Innosonix Discovery & Firmware Manager)

With V3 Firmware we introduce a new tool which can do:

- discovering our device in the network
- changing IP-settings
- changing Hostname
- identify single units by a flashing display
- all discovery commands are sent via UDP-Broadcast, so no IP-subnet boarders can hinder a discovery or IP change
- local firmware storage which can be updated from our web service, to stay always up to date
- offline updating devices from your local firmware storage, even when no internet connection is available

🦛 idfm									-	\times
69 i	nn esen i	DEVICES	FIRMWARE							
	ONLINE: 4/4	NOT IN LIST: 0					٢ı	UPDATE MAN	AGER	
	HOST	NAME	түр	FIRMWARE	INFO	IP-ADDRESS	STATUS	IDENT	PAGE	
	MA320	>			i	10.77.150.240/16	51%	Ø	₽	
	MA320	0-000221	MA32D	3.1.3	i	10.77.178.235/16	Running	Ø	R	
	MA320	D-Demo	MA32D	3.1.3-19- ga38f1fa	i	10.77.178.237/16	Running	Ø	₿	
	MA32L	.P-Office	MA32LP	3.1.3	i	10.77.180.90/16	Running	Ø	₽	
	App Version: 1.2.0	-47-gcfe053e								

Upgrading V2 to V3

This process is not reversible, so only perform if you agree with major changes listed above!

- 1. update to latest <u>V2.10.6</u>
- 2. upload and update the device via webpage to V2.10.6
- 3. download the latest IDFM tool: <u>https://innosonix.de/downloads.html?product=idfm</u>
- 4. download User Data and Config on device Page

E CONFIG	PRESETS	SOFTWARE UPDATE							
1. DOWNLOAD USER DATA (PRESETS, CHANNEL PRESETS, FIR FILTER)									
	DOWNLOAD								
2. DOWNLOAD CONFIG (COMPLETE SETTINGS DUMP, MAY TAKE 2 MINUTES)									
	DOWNLOAD								

5. Download Mirgration File:

https://download.innosonix.de/dl/legacy/update-to-maxx-loader-2.1.5.1.inx

6. Upload the downloaded file on device Page. The Update will start automatically

3.	UPLOAD & UPDATE									
	UPLOAD DRAG & DROP FILE									
	!Do not turn off amp during update is in progress!									
4.	Wait until update is completed. Amp will be restarted after update. Reload Webpage after reboot.									

- 7. Wait till Update is complete
- 8. Start the tool and search for existing devices in the network.
- 9. Your Amp will appear in the device list in **FW-Loader** status

ONLINE: 1/1 + 🖺 f	<u>i</u> <u>1</u>	2				UP	DATE MAN	IAGER
HOSTNAME	MODEL	FIRMWARE	INFO	IP-ADDRESS	STATUS	IDENT	PAGE	
AMP1			i	10.77.178.90/16	FW-Loader	Ø	₿	UDP

- 10. navigate to the firmware page
- 11. If not already done, **DOWNLOAD** the newest Firmware to your firmware storage (3.15.3 in our example here)

MA32D, MA32LP	UPDATE NOTIFICATION:
3.15.3	DOWNLOAD

- 12. navigate to Devices Page again and open the UPDATE MANAGER
- 13. Select the newest Firmware and Press Update

UPDATE DE	VICE		×
NAME	STATE	CURRENT VERSION	UPDATE TO
AMP1	FW-Loader		~
			3.15.3
			UPDATE

14. Wait till Update completed, the status will be shown in the device list.

15. If you need to recover your configuration, the Downloaded "**.json**" Config File represents a device Preset. So you can upload the File on the Webpage and restore the settings

STEP 1: CHOOSE A PRESET SO	URCE:		
CREATE A FULL PRESET FROM YOUR CURRENT DEVICE SETTINGS.	CREATE A CHANNEL-PRESET FROM THE SELECTED DEVICE- CHANNEL. CH 1 - CH 1	IMPORT A PRESET FROM YOUR COMPUTER. Datei auswählen Keiählt	CHOOSE A PRESET FROM YOUR PRESET LIBRARY.
STEP 2: EDIT PRESET:			
EXPAND COLLAPSE SELEC	T ALL UNSELECT ALL		
 Channel channel interface device dsp dsp of grouping of mainsvoltage of fan 			
STEP 3: DOWNLOAD/APPLY S	ETTINGS:		
AMP1	DOWNLOAD	ARY MUTE DURING UPDAT	E APPLY SETTINGS