outline TTM 8K4 Multipurpose Amplifier User Guide
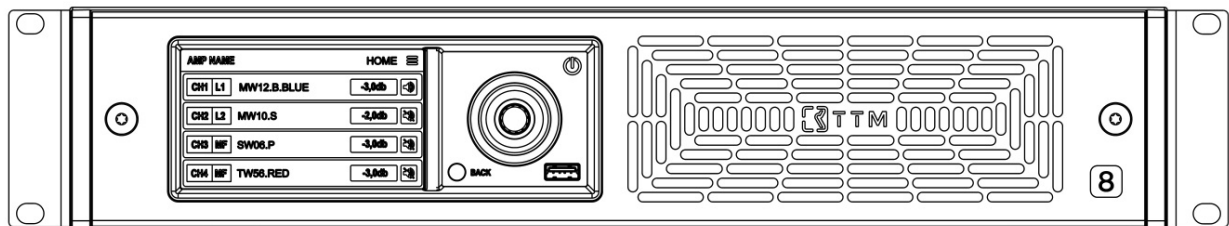
**outline TTM 8K4 Multipurpose
Amplifier User Guide**

Koutline

TTM 8K4

Preset Guide

v 3.7

TTM 8K4 Preset Guide
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Refer all servicing to qualified personnel, through your Outline dealer.

INTRODUCTION

TTM series offers a loudspeaker preset library.
The presets can be loaded connecting the amplifiers to a PC running ArmoníaPlus through a Fast Ethernet connection.
ArmoníaPlus is the default configuring interface that allows system setting and customization of the TTM amplifier.
It is available for free from the Armonía website, where a startup guide and in-depth tutorials are also provided:
https://armonia.powersoft.it/
Each loudspeaker model has one or more presets, the aim of this guide is to provide help on how to use them and have an overview of each to choose the one which best suits the needs.
The following data is given:

- **N° of ways,** indicates the number of ways for the relative preset, as well as the number of channels required;

- **Type of ways**, ways description that defines the section of the channel (LF Low Frequencies, HF High Frequencies…).

- **Application**, defines the preset contour (Full Range, High Pass, etc.) or use the preset is designed for (Rear Cardio 2+1, Down fill, Bass, etc.);

- **Maximum number of linked speakers**, shows the maximum number of loudspeakers that is possible to link for each preset. Exceeding the maximum number of elements per channel can result in damage to the amplifier and the speakers;

- **Manufacturer EQ**, they are a set of equalizations aimed at settling known behaviors (like low frequency compensation due to loudspeakers coupling, air loss etc.). This guide indicates whether the preset model has the MEQs and which one of the two categories (category A and category B). Please, refer to the relative section here below for more details.

- **HPF/LPF**, preset cut-off frequency: High Pass Filter is given for Top loudspeakers and Low Pass Filter for the Subwoofers.

PRESET LAYOUT

Here's a little explanation of the preset layout, with delay, gain and equalization configurations.
Please, note that the multi-way speaker presets already include all required output channels, which are linked together ensuring that the speaker is driven correctly.

DELAY

All systems are pre-aligned and phase compliant: it means that from the largest system down to the smallest one, all Outline products feature the same
phase curve slope. In fact, positioning the enclosures with the front grilles one above the other, the enclosures will be perfectly aligned over time.
To align two enclosures, it is sufficient to measure the difference in signal path between the sources to find the delay that must be added to obtain the perfect audio signal sum.
So even if you do not have sophisticated measurement systems, you can actually make a good tuning process.

GAIN

Furthermore, the preset structure is designed to use different loudspeaker models of different sizes together (again, from the largest system down to the smallest one), reaching their limiters at the same input level with default Gain settings.

Contents

MANUFACTURER EQ

MEQ are a set of equalizations designed to compensate low frequencies (loudspeakers coupling), air loss (long, medium, short throw) or just for High / Low contour equalizations based on configurations and needs.

There are two categories (A, B) available:

- Category A: selectable amount of boxes that make up the array to compensate loudspeaker coupling, providing the right contour for the system. The brand new Ai 41 and Ai 81 offer just two options related to use a 'Single Speaker' or a 'Stereo Set';
- Category B: selectable distance to be covered to compensate the air absorption. A series offers two distinct options for different configurations, as 'Wall Mounted' or 'Free Standing'.

MANTAS 28

Model	Ways		Application	Max. number of linked speakers	Manufacturer EQ		HPF	LPF
	N°	Type			Cat. A	Cat. B		
Mantas 28	2	LF | HF	High Pass	2	✓	✓	100 Hz	-
	2	MF | HF	Down Fill for GTO	2	✓	✓	100 Hz	-

BUTTERFLY – MANTAS

| Model | Ways | | Application | Max. number of linked speakers | Manufacturer EQ | | HPF | LPF |
	N°	Type			Cat. A	Cat. B		
Butterfly	2	LF | HF	High Pass	1	✖	✖	110 Hz	-
Butterfly CDL 1815	2	FR | RE	Sub	1	✖	✖	-	110 Hz
Mantas	2	LF | HF	High Pass	2	✖	✖	100 Hz	-

STADIA

| Model | Ways | | Application | Max. number of linked speakers | Manufacturer EQ | | HPF | LPF |
	N°	Type			Cat. A	Cat. B		
Stadia 28	2	LF | HF	Horizontal Array FR	2	✔	✖	55 Hz	-
	2	LF | HF	Horizontal Array HP	2	✔	✖	100 Hz	-
	2	LF | HF	Vertical Array FR	2	✔	✔	55 Hz	-
	2	LF | HF	Vertical Array HP	2	✔	✔	100 Hz	-
STSUB-215	1	SB	Sub	1	✖	✖	-	100 Hz
	1	SB	Infra	1	✖	✖	-	60 Hz
	2	SB | SB	Sub 2 Ch.	2	✖	✖	-	100 Hz
	2	SB | SB	Infra 2 Ch.	2	✖	✖	-	60 Hz

ARENA

| Model | Ways | | Application | Max. number of linked speakers | Manufacturer EQ | | HPF | LPF |
	N°	Type			Cat. A	Cat. B		
Arena 215CX MonoAmp	1	PA	Full Range	1	✖	✖	35 Hz	-
	1	PA	High Pass	1	✖	✖	100 Hz	-
Arena 215CX BiAmp	2	LF | MH	Full Range	2	✖	✖	35 Hz	-
	2	LF | MH	High Pass	2	✖	✖	100 Hz	-

SCALA

| Model | Ways | | Application | Max. number of linked speakers | Manufacturer EQ | | HPF | LPF |
	N°	Type			Cat. A	Cat. B		
Scala 90	2	LF | HF	Horizontal Array FR	2	✔	✖	55 Hz	-
	2	LF | HF	Horizontal Array HP	2	✔	✖	100 Hz	-
	2	LF | HF	Vertical Array FR	2	✔	✔	55 Hz	-
	2	LF | HF	Vertical Array HP	2	✔	✔	100 Hz	-

EIDOS

| Model | Ways | | Application | Max. number of linked speakers | Manufacturer EQ | | HPF | LPF |
	N°	Type			Cat. A	Cat. B		
Eidos 265	1	PA	Full Range	2	✓	✗	70 Hz	-
	1	PA	High Pass	2	✓	✗	100 Hz	-
Flysub 15	1	SB	Sub	2	✗	✗	-	100 Hz
Eidos 6.5	1	PA	Full Range	4	✗	✗	53 Hz	-
	1	PA	High Pass	4	✗	✗	100 Hz	-
Eidos 10	1	PA	Full Range	4	✗	✗	60 Hz	-
	1	PA	High Pass	4	✗	✗	100 Hz	-
Eidos 12	1	PA	Full Range	3	✗	✗	50 Hz	-
	1	PA	High Pass	3	✗	✗	100 Hz	-
Eidos 15	1	PA	Full Range	2	✗	✗	40 Hz	-
	1	PA	High Pass	2	✗	✗	100 Hz	-
Eidos X123W	1	PA	Full Range	2	✗	✗	40 Hz	-
	1	PA	High Pass	2	✗	✗	100 Hz	-
Eidos 108 S	1	SB	Sub	3	✗	✗	-	100 Hz
	1	SB	Sub High	3	✗	✗	-	160 Hz

VEGAS

| Model | Ways | | Application | Max. number of linked speakers | Manufacturer EQ | | HPF | LPF |
	N°	Type			Cat. A	Cat. B		
Vegas 4	1	PA	Full Range	8	✗	✗	100 Hz	-
	1	PA	High Pass	8	✗	✗	120 Hz	-
Vegas 24	1	PA	High Pass	6	✗	✗	100 Hz	-
Vegas 6.5	1	PA	Full Range	4	✗	✗	50 Hz	-
	1	PA	High Pass	4	✗	✗	100 Hz	-
Vegas 10	1	PA	Full Range	4	✗	✗	60 Hz	-
	1	PA	High Pass	4	✗	✗	100 Hz	-
Vegas 12	1	PA	Full Range	3	✗	✗	50 Hz	-
	1	PA	High Pass	3	✗	✗	100 Hz	-
Vegas 15	1	PA	Full Range	2	✗	✗	40 Hz	-
	1	PA	High Pass	2	✗	✗	100 Hz	-
Vegas 8CX	1	PA	Full Range	4	✗	✗	50 Hz	-
	1	PA	High Pass	4	✗	✗	100 Hz	-
Vegas 12CX	1	PA	Full Range	2	✗	✗	40 Hz	-
	1	PA	High Pass	2	✗	✗	100 Hz	-
Vegas 15CX	1	PA	Full Range	2	✗	✗	50 Hz	-
	1	PA	High Pass	2	✗	✗	100 Hz	-

MONACO

Model	Ways		Application	Max. number of linked speakers	Manufacturer EQ		HPF	LPF
	N°	Type			Cat. A	Cat. B		
Monaco 215CX MonoAmp	1	PA	Full Range	1	✖	✖	35 Hz	-
	1	PA	High Pass	1	✖	✖	100 Hz	-
Monaco 215CX BiAmp	2	LF | MH	Full Range	2	✖	✖	35 Hz	-
	2	LF | MH	High Pass	2	✖	✖	100 Hz	-

KI

Model	Ways		Application	Max. number of linked speakers	Manufacturer EQ		HPF	LPF
	N°	Type			Cat. A	Cat. B		
Ki10	1	PA	Full Range	4	✖	✖	50 Hz	-
	1	PA	High Pass	4	✖	✖	100 Hz	-
Ki12	1	PA	Full Range	3	✖	✖	50 Hz	-
	1	PA	High Pass	3	✖	✖	100 Hz	-

DVS

Model	Ways		Application	Max. number of linked speakers	Manufacturer EQ		HPF	LPF
	N°	Type			Cat. A	Cat. B		
DVS 12	1	PA	Full Range	2	✖	✖	40 Hz	-
	1	PA	High Pass	2	✖	✖	90 Hz	-
DVS 15	1	PA	Full Range	2	✖	✖	40 Hz	-
	1	PA	High Pass	2	✖	✖	80 Hz	-
DVS 115 SW	1	SB	Sub	2	✖	✖	-	100 Hz
	1	SB	Infra	2	✖	✖	-	80 Hz
DVS 118 SW	1	SB	Sub	1	✖	✖	-	100 Hz
	1	SB	Infra	1	✖	✖	-	80 Hz

SPECTRA 2

Model	Ways		Application	Max. number of linked speakers	Manufacturer EQ		HPF	LPF
	N°	Type			Cat. A	Cat. B		
Spectra 2 9075	2	MF | HF	Full Range	2	✖	✖	40 Hz	-
	2	MF | HF	High Pass	2	✖	✖	80 Hz	-

DOPPIA 2

Model	Ways		Application	Max. number of linked speakers	Manufacturer EQ		HPF	LPF
	N°	Type			Cat. A	Cat. B		
Doppia 2 A 5040	3	LF | MF | HF	Full Range	2	✕	✕	40 Hz	-
	3	LF | MF | HF	High Pass	2	✕	✕	80 Hz	-
Doppia 2 A 9075	3	LF | MF | HF	Full Range	2	✕	✕	40 Hz	-
	3	LF | MF | HF	High Pass	2	✕	✕	80 Hz	-
Doppia 2 P 5040	2	LF | MH	Full Range	2	✕	✕	40 Hz	-
	2	LF | MH	High Pass	2	✕	✕	80 Hz	-
Doppia 2 P 9075	2	LF | MH	Full Range	2	✕	✕	40 Hz	-
	2	LF | MH	High Pass	2	✕	✕	80 Hz	-

TRIPLA 2

Model	Ways		Application	Max. number of linked speakers	Manufacturer EQ		HPF	LPF
	N°	Type			Cat. A	Cat. B		
Tripla 2 5040	3	LF | MF | HF	Full Range	1	✕	✕	35 Hz	-
	3	LF | MF | HF	High Pass	1	✕	✕	80 Hz	-
Tripla 2 9075	3	LF | MF | HF	Full Range	1	✕	✕	35 Hz	-
	3	LF | MF | HF	High Pass	1	✕	✕	80 Hz	-

SM

Model	Ways		Application	Max. number of linked speakers	Manufacturer EQ		HPF	LPF
	N°	Type			Cat. A	Cat. B		
SM 112	2	LF | HF	Monitor	2	✕	✕	70 Hz	-
SM 115	2	LF | HF	Monitor	2	✕	✕	50 Hz	-
SM 212	2	LF | HF	Monitor	2	✕	✕	45 Hz	-

HARD

Model	Ways		Application	Max. number of linked speakers	Manufacturer EQ		HPF	LPF
	N°	Type			Cat. A	Cat. B		
Hard 212	2	LF | HF	Full Range	2	✕	✕	65 Hz	-
	2	LF | HF	High Pass	2	✕	✕	100 Hz	-

SUB

Model	Ways		Application	Max. number of linked speakers	Manufacturer EQ		HPF	LPF
	N°	Type			Cat. A	Cat. B		
SUB 110	1	SB	Sub	3	✕	✕	-	100 Hz
	1	SB	Sub High	3	✕	✕	-	120 Hz
SUB 118	1	SB	Sub	1	✕	✕	-	100 Hz
	1	SB	Infra	1	✕	✕	-	80 Hz

A SERIES

Model	Ways		Application	Max. number of linked speakers	Manufacturer EQ		HPF	LPF
	N°	Type			Cat. A	Cat. B		
Ai 41	1	PA	High Pass	4	✓*	✓*	245 Hz	-
Ai 81	1	PA	High Pass	8	✓*	✓*	245 Hz	-
Charlie 4	1	PA	Full Range	8	✗	✗	100 Hz	-
	1	PA	High Pass	8	✗	✗	120 Hz	-
AS6	1	SB	Sub	4	✗	✓*	-	100 Hz
	1	SB	Sub High	4	✗	✓*	-	250 Hz

* A Series Manufacturer EQs offer two different options than the other models.
Category A refers to the use of a 'Single Speaker' or a 'Stereo Set'.
Category B control the contour plot in 'Wall Mounted' or 'Free Standing' configuration.
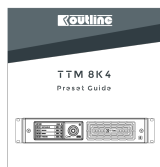
MOVIE

Model	Ways		Application	Max. number of linked speakers	Manufacturer EQ		HPF	LPF
	N°	Type			Cat. A	Cat. B		
MV1CX	1	PA	Full Range	2	✗	✗	52 Hz	-
MV2CX	1	PA	Full Range	1	✗	✗	28 Hz	-
MVFX101	1	PA	Full Range	4	✗	✗	45 Hz	-
MVH102	1	MH	Full Range	2	✗	✗	350 Hz	-
MVB215	1	BS	Bass	1	✗	✗	-	320 Hz
	2	BS | BS	Bass 2 Ch.	2	✗	✗	-	320 Hz
MVS118	1	SB	Sub	2	✗	✗	-	150 Hz
MVS218	1	SB	Sub	1	✗	✗	-	150 Hz
	2	SB | SB	Sub 2 Ch.	2	✗	✗	-	150 Hz

Outline carries out on-going research for product improvement. New materials, manufacturing methods and design upgrades are introduced to existing products without prior notice as a routine result of this philosophy. For this reason, any current Outline product may differ in some aspect from its description, but will always equal or exceed the original design specifications unless otherwise stated.

Documents / Resources

[outline TTM 8K4 Multipurpose Amplifier](#) [pdf] User Guide
TTM 8K4 Multipurpose Amplifier, TTM 8K4, Multipurpose Amplifier, Amplifier

References

- ˆ **Powersoft ArmoníaPlus System Design**

Manuals+,