

MX SERIES

Modular Power Amplifier

Owner's Manual

MX

MYRYAD

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INTRODUCTION

The Myryad MX Modular Power Amplifier has been designed to provide a flexible solution to a wide range of power amplifier requirements. As a two-channel unit it can be partnered with the Myryad MXP2000 stereo preamplifier (or other high quality preamp) to deliver audiophile quality stereo. In multi-channel form it can be used to provide power for high quality Home Cinema or music surround systems when partnered by a suitable surround preamplifier-processor such as Myryad's MXD6000. It can also be used in install situations as a high-quality multi-channel distribution amplifier. All this is delivered with an unparalleled combination of high quality sound reproduction and simple yet elegant styling

The MX Modular Power Amplifier can be fitted with up to seven amplifier modules each of which can be either a single channel rated at 150W/8Ω output, or a two channel module rated at 2 x 80W/8Ω - resulting in a maximum of 7 channels of 150W or 14 channels of 80W, or various combinations in between. A table indicating the model number for each combination can be found on page 7.

Additional amplifier modules, up to the maximum of seven, can be fitted into the MX power amplifier, or existing modules can be exchanged for the alternative type, at any time. Modules must only be fitted or exchanged by qualified service personnel. Consult your Myryad dealer for details.

Each amplifier channel (80W and 150W) has a line input plus a directly linked line output both on high-quality gold-plated RCA phono sockets and a loudspeaker output on a pair of solid metal gold-plated 5-way binding posts.

The MX Modular PA may be controlled remotely via the My-Link communications bus when used with other Myryad products. My-Link allows remote control of standby and mute functions. In addition to this, the MX Modular PA may be switched into or out of standby remotely using its DC trigger input.

Applications of the MX Modular Power Amplifier include:

- Use in conjunction with the MXP2000 Stereo Preamplifier in a high quality stereo system
- Use in conjunction with the MXD6000 Digital Preamplifier-Processor, delivering up to seven channels at 150W (or 80W) in Home Cinema systems of the highest quality.
- Use in a multi-room setup, possibly together with other MX Modular PAs, to deliver high-power high-quality audio to a number of different rooms with minimal crosstalk between channels.
- Various bi-amplifier or tri-amplifier configurations at 80W or 150W.

INSTALLATION AND SAFETY

This amplifier generates a significant amount of heat when operating and thus requires good ventilation. Do not place it on a rug or other soft surface into which it could sink, obstructing the air inlets in its underside. Do not allow papers or cloth to obstruct the ventilation grille in the top cover. The amplifier should not be installed in a built-in situation such as a bookcase or cabinet unless proper ventilation is provided. If the amplifier is moved shortly after operation take care not to touch the heatsinks, which are accessible from below, as they may be very hot. The amplifier is designed for use in moderate climates.

CAUTION: TO PREVENT A FIRE OR SHOCK HAZARD, DO NOT PERMIT THIS PRODUCT TO BECOME WET. IF LIQUID IS ACCIDENTALLY SPILLED ON IT, IMMEDIATELY SHUT OFF ITS POWER AT THE WALL SOCKET AND UNPLUG THE AC POWER CORD. ALLOW SUFFICIENT TIME FOR COMPLETE EVAPORATION TO OCCUR BEFORE OPERATING THE UNIT AGAIN. IF THE LIQUID IS ANYTHING BUT WATER AND/OR ALCOHOL, A QUALIFIED SERVICE TECHNICIAN SHOULD EXAMINE THE UNIT BEFORE IT IS USED AGAIN

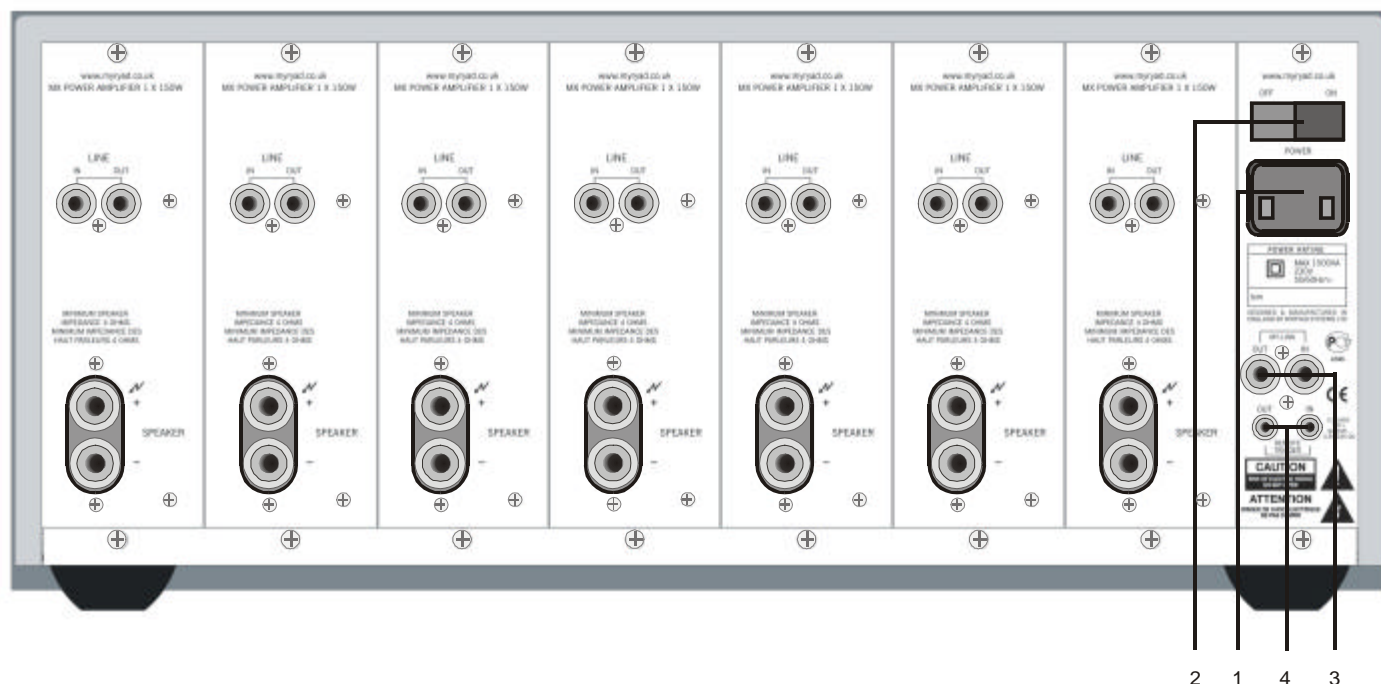
Do not remove the cover, or attempt to modify or repair the amplifier yourself. Refer all servicing to a qualified technician.

ACCESSORIES

Your Myryad Power Amplifier is supplied complete with the following accessories:

- My-Link interconnect (0.5m RCA-RCA)
- Separate mains power cord to suit country of sale.

SETTING UP YOUR SYSTEM



REAR PANEL CONNECTIONS

1. Power Inlet

Before making any connection, check that the mains voltage setting printed on the rear panel is the same as your local mains supply.

Plug the female (socket) end of the power cord into the power inlet on the rear of the amplifier. Plug the male (plug) end of the cord into a "live" wall socket or a suitable heavy-duty extension cable.

UK version: The mains plug is supplied fitted with a 13A fuse. It should only be replaced with a fuse of the same rating (13A) which complies with BS1362.

2. Power Switch

Press one side of this rocker switch (the side nearer the edge of the rear panel) to switch amplifier ON and the other side (towards the speaker terminals) to switch it OFF. When the POWER switch is in the OFF position all power is disconnected from the amplifier. In this condition the amplifier cannot be powered up from the front panel or the My-Link or remote trigger. When the POWER switch is in the ON position (and the power cord correctly inserted and plugged into a live wall socket) the amplifier will power up in standby mode (see FRONT PANEL CONTROLS, STANDBY, below).

It is recommended that the POWER switch be turned OFF if the amplifier is not going to be used for an extended period of time.

IMPORTANT: Make sure the POWER switch is turned OFF before making or changing any connections to the amplifier.

3. Smart My-Link®

When the MX power amplifier is used in a system with other Myryad products (e.g. MX-Series, M-Series, Cameo or Z-Series) all may be joined together via the My-Link. This will allow the different products to be remotely controlled via the infra-red receiver on, for example, an MXD6000 Preamplifier-Processor or any Myryad Preamplifier or Integrated Amplifier.

When joined via the My-Link, the MX power amplifier will respond to STANDBY and MUTE operations on the preamplifier (whether operated from the front panel or by remote control). For example, if both the preamplifier and the MX power amplifier are in STANDBY, then switching the preamplifier out of standby will also bring the MX power amplifier out of standby. In this way an MXD6000 + MX power amplifier can be operated with the same ease as an integrated unit. If a number of MX power amplifiers are being used in a multi-room system *all* the amplifiers may be My-Linked so that they can be controlled as one.

Use a short RCA-to-RCA (phono-to-phono) interconnect cable to connect from the MY-LINK OUT socket on the integrated or preamplifier to the MY-LINK IN socket on the MX power amplifier. A suitable 0.5m long My-Link cable is supplied with the MX power amplifier. A second cable can then

run from the MY-LINK OUT socket on the MX power amplifier to the MY-LINK IN socket on a third Myryad component (if desired) and so on – in "daisy-chain" fashion. Inexpensive interconnects may be used as the My-Link bus carries only control signals, not audio, so these cables have no effect on sound quality.

Please note:

- Manually switching the MX power amplifier into standby will not switch other My-Linked units into standby.
- When the My-Link is connected it is recommended that no connection be made to the REMOTE TRIGGER input (see below).
-

4. Remote Trigger Control input/output

If the MX power amplifier is being used in a system without a Myryad preamplifier, processor or integrated equipped with My-Link, the REMOTE TRIGGER input may be used to allow the MX power amplifier to be remotely switched into or out of STANDBY.

If your preamplifier or processor has a TRIGGER output which delivers a DC trigger signal when the unit is switched on (or out of standby) then it can be linked to the MX power amplifier to switch that out of/into standby also. A lead must be used which is fitted with a 3.5mm mini-jack plug to connect to the MX power amplifier's REMOTE TRIGGER input socket. The lead must be wired according to the rules below:

Remote Trigger Control Details

Connector to MX power amplifier REMOTE TRIGGER input:	3.5mm mini-jack plug
Jack plug wiring:	sleeve negative, tip positive
Trigger voltage:	DC, 4.5V to 24V
Nominal loading of MX power amplifier REMOTE TRIGGER input:	2200 Ohms
Operation:	TRIGGER voltage change from 0 to +ve: MX power amplifier switched from standby to active
	TRIGGER voltage change from +ve to 0: MX power amplifier switched from active to standby

IF YOU ARE IN ANY DOUBT ABOUT MEETING ANY OF THESE CRITERIA, OR PREPARING A SUITABLE LEAD, ASK YOUR DEALER OR INSTALLER TO HANDLE THIS FOR YOU.

Note: If the TRIGGER input is active when the rear panel POWER switch is

turned ON, then the amplifier will not power up into standby mode as usual. It will power up immediately into its "active" state - with its normal power-on mute delay (see FRONT PANEL CONTROLS, STANDBY below).

The REMOTE TRIGGER output is wired

directly to the input. Using this output, further MX power amplifiers, or other products, may be connected from a single trigger source without needing any special adaptors.

1 x 150W AND 2 x 80W AMPLIFIER MODULES

Each MX Power Amplifier is supplied fitted with two or more amplifier channels, made up from a combination of 1 x 150W and 2 x 80W amplifier modules. The single and dual channel modules both interface in exactly the same way. The text below therefore refers to a single channel and applies equally to a 1 x 150W module or either channel of a 2 x 80W module.

Additional amplifier modules, up to the maximum of seven, can be fitted into the MX power amplifier, or existing modules can be exchanged for the alternative type (1x150W or 2x80W), at any time. Modules must only be fitted or exchanged by qualified service personnel. Consult your Myryad dealer for details

1. Line input

The line input can be driven from the line outputs of any good quality processor or preamplifier (such as the Myryad MXD6000 or MXP2000) or any other suitable line level source. High quality RCA-to-RCA (phono-to-phono) interconnects should be used.

2. Line output

The line output is directly connected to its line input - without buffering. The line output allows power amplifiers to be "daisy-chained" so that more complex multi-room or multi-amplifier systems may be built.

3. Speaker output

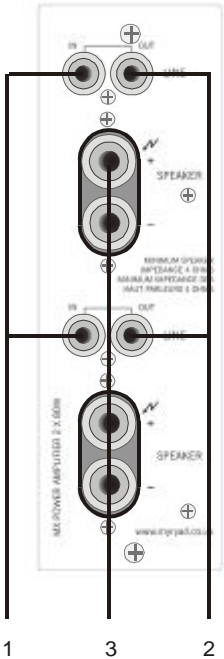
Each channel is capable of driving any loudspeaker with a rated impedance of 4 ohms or greater. The loudspeaker terminals are high-current binding-posts, coded red and black.

CAUTION: THE RED TERMINALS ARE MARKED WITH A HAZARD SYMBOL TO INDICATE THAT THEY CAN BE LIVE, READ ALL THE LOUDSPEAKER WIRING INSTRUCTIONS CAREFULLY. IT IS RECOMMENDED THAT READY-MADE LEADS BE USED WHERE POSSIBLE.

For correct imaging it is important that all the loudspeakers used in a single room are wired "in phase". To ensure correct phasing wire the black (-) terminal on the amplifier to the black or "-" terminal on the loudspeaker. The red (+) terminal on the amplifier should be wired to the red or "+" terminal on the loudspeaker.

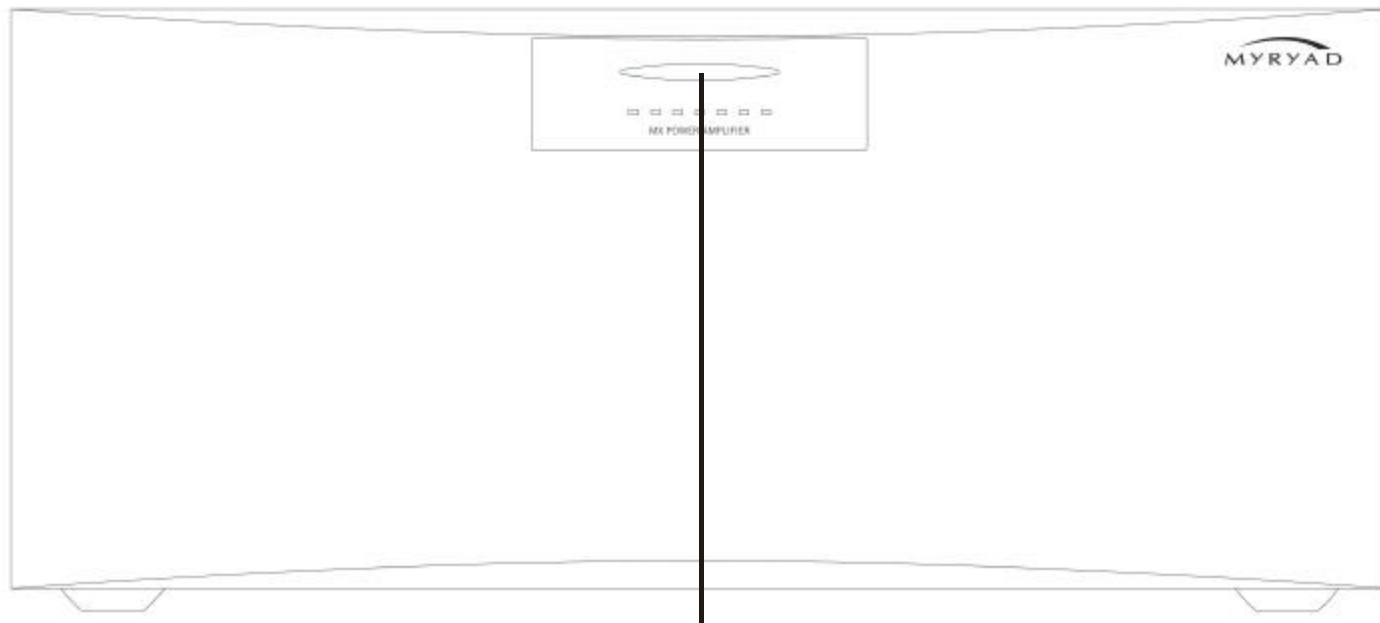


1 x 150W Module



2 x 80W Module

USING YOUR MXA



1

FRONT PANEL CONTROLS

1. Standby

When the amplifier is plugged into a live wall socket and the POWER switch is turned ON, it will power up in "standby" mode and the central standby LED (Light Emitting Diode) in the display window will glow red. In this mode only a small part of the internal circuitry of the amplifier is powered up, so it consumes very little power and all loudspeaker outputs are isolated by relays.

When the STANDBY ellipse is touched the red standby LED will extinguish and the amplifier will be activated. Power will be switched to each module location in sequence and a blue LED will light in the display window for each amplifier module installed (up to the maximum of seven modules). Once all seven locations are powered, the lit blue LEDs will flash while the loudspeaker outputs remain muted. After a delay of about eight seconds the relays will close, connecting the loudspeaker outputs to the amplifier and the blue LEDs will glow continuously. When the STANDBY ellipse is touched again the amplifier will be returned to standby mode, the blue LEDs will extinguish and the standby LED will light red again.

There are seven blue LEDs behind the display window and each is lit only if an amplifier module is installed in the corresponding location (either a 1x150W or a 2x80W module). So if a module is installed in the far left location, then the far left blue LED will light when the unit is switched out of standby - and so on. If modules are installed in all seven locations,

then all seven LEDs will light blue.

Please note: When the power amplifier is remotely activated from another unit, there may be a time difference between the closing of the loudspeaker output relays of the two units. This is normal and no cause for concern.

CAUTION: WHEN IN STANDBY MODE THE INTERNAL CIRCUITRY OF THE MX POWER AMPLIFIER IS STILL LIVE, SO ALL SAFETY PRECAUTIONS MUST BE FOLLOWED

2. Loudspeaker output protection and muting

When the amplifier is in standby mode the loudspeaker output terminals are isolated from the amplifier by high quality relays. When the amplifier is first switched on from standby mode the loudspeaker outputs remain disconnected for a few seconds to allow the internal voltage levels to settle. The loudspeaker outputs are immediately disconnected again when the amplifier is switched back into standby mode.

The same loudspeaker mute relays are used to protect both the amplifier and your loudspeakers against possible damage. If any one of a number of fault modes is detected in any channel (loudspeaker output short circuit, amplifier overheating, amplifier DC fault) the loudspeaker will be disconnected from that amplifier channel to protect both. In the case of a short circuit the loudspeaker will be re-connected after a few seconds, but will be disconnected again if the fault persists. If overheating has caused the protection system to operate,

then it will take some time for the module's heatsink to cool sufficiently to allow the loudspeaker to be re-connected (probably between ten and twenty minutes depending upon the room temperature and ventilation). The amplifier will cool more quickly if it is switched to standby mode.

The protection circuit in each channel of the MX power amplifier is totally independent of the other channels (even within a 2x80W module). When a channel's protection is activated, for whatever reason, only that channel's speaker relay will open muting only that channel. The only exception may be with a 2x80W module overheating as both amplifier channels share a single heatsink. Each channel has its own temperature sensor, so one or both may protect if overheating occurs.

FAULT CONDITION INDICATION

The MX power amplifier modules have intelligent loudspeaker protection systems. If a fault occurs in any power amplifier channel it will report the nature and location of the fault using the seven LEDs in the amplifier's display window. When a fault occurs, the normal display showing the number and location of channels installed will change as follows.

First the display will show the fault type – numbered from 1 to 5 – indicated by the number of blue LEDs illuminated starting from the leftmost.

■ ~ ~ ~ ~ ~ Fault type 1
 ■ ■ ~ ~ ~ ~ ~ Fault type 2
 ■ ■ ■ ~ ~ ~ ~ Fault type 3
 ■ ■ ■ ■ ~ ~ ~ Fault type 4
 ■ ■ ■ ■ ■ ~ ~ Fault type 5

A blue LED illuminated is shown "■" and no LED illuminated is shown "~".

The above display will appear for about 2 seconds, after which it will change to show the location of the faulty module. The far left module (from the front of the amplifier) is module 1 and the far right is module 7. With 1 x 150W modules the channel and module numbers are the same. The amplifier module number is indicated by illuminating all LEDs, but only the one relating to the faulty module location will be blue "■", the others will be red "□".

Hence:

■ ■ ■ ■ ■ ■ ■ Module 1 reporting fault
 □ ■ ■ ■ ■ ■ ■ Module 2 reporting fault
 □ □ ■ ■ ■ ■ ■ Module 3 reporting fault
 □ □ □ ■ ■ ■ ■ Module 4 reporting fault
 □ □ □ □ ■ ■ ■ Module 5 reporting fault
 □ □ □ □ □ ■ ■ Module 6 reporting fault
 □ □ □ □ □ □ ■ Module 7 reporting fault

This display will appear for about 2 seconds, after which it will alternate with the "Fault type" display. The displays will continue to alternate while the fault persists, or until the unit is switched off or into standby.

With 2x80W modules, the upper amplifier channel in each module has the same number as the module (1 to 7), but the lower amplifier has that number plus 7, so the lower amplifier channels run from 8 to 14 (8 being the lower channel of the far left module). If a fault occurs in one of channel numbers 8 to 14 it is indicated by lighting the far right LED blue in the "Fault type" display, thus a fault type 2 (short-circuit) in channel 12 (the lower channel of module 5) is indicated by displaying:

■ ■ ~ ~ ~ ~ ■ Fault type 2 in lower channel alternating with

□ □ □ □ ■ ■ ■ Module 5 reporting fault

The table below indicates what action should be taken when a fault is reported. "Overheat" and "Short-circuit" faults can usually be cured by checking your amplifier setup. The other faults indicate a failure within the amplifier so the unit must be returned for service.

Fault Type	Description of Fault	Action required
1	"Overheat" Amplifier channel has overheated	Make sure that ventilation grilles in amplifier's top cover and bottom chassis are not obstructed. Allow amplifier channel to cool - typically 10 - 20 minutes depending upon the room temperature and ventilation - after which the channel's loudspeaker will be re-connected. The amplifier will cool more quickly if switched to standby. When the loudspeaker is re-connected, make sure that the volume is not set too high – i.e. that the sound is clean and undistorted. If the sound is distorted on loud passages, reduce the volume setting. If the problem persists return unit to approved Service Agent.
2	"Short-circuit" Loudspeaker wiring short-circuited, or very low impedance loudspeaker connected, or too many loudspeakers wired in parallel to one amplifier channel	Switch amplifier POWER off at rear. Check that load on each channel is no less than 4Ω (one 4Ω speaker or two 8Ω speakers to each channel). Check loudspeaker wiring – at both amplifier and speaker ends. Make sure there are no small strands of wire that might be causing a short circuit. Re-wire if necessary. If the problem persists return unit to approved Service Agent.
3	Excessive positive DC output	Return unit to approved Service Agent.
4	Excessive negative DC output	Return unit to approved Service Agent.
5	AC power failure to power amplifier channel	Return unit to approved Service Agent.

TROUBLE- SHOOTING GUIDE –

Some of the most common problems:

No sound from any channel:

- Power turned off or system in standby mode. Check that the module LEDs in the display window are lit blue.
- Input connections loose or missing. Check that all connections are secure.
- UK version only: The fuse in the mains plug has failed. Check and replace if necessary.

No sound from one channel only:

Loudspeaker cable pulled loose. Check all connections, both at the loudspeakers and amplifier.

- Interconnect cable pulled loose or making poor contact. Check and, if necessary, un-plug and re-plug all relevant cables.
- Protection relay has operated because of a short circuit loudspeaker wire or amplifier overheating (see Fault Condition Indication on Page 6). Carefully check all wiring after switching amplifier POWER OFF. Allow amplifier to cool.

Incorrect operation - some functions not working:

- Control processor latched. Switch off POWER on rear panel and wait for 5 minutes. Then switch POWER on and switch out of standby. Normal operation should resume.

Amplifier fails to respond to Smart My Link® remote commands from Myryad Preamplifier, Preamp-Processor or Integrated:

- My-Link cable is loose or not connected. Check connections on all linked units.

Loud buzz or hum:

- Interconnect cable pulled partially out of its socket.
- Defective interconnect cable.

MX POWER AMPLIFIER MODEL NUMBERS

No. of 1 x 150W modules	No. of 2x80W modules							
	0	1	2	3	4	5	6	7
0	N/A	MXA0151	MXA0152	MXA0153	MXA0154	MXA0155	MXA0156	MXA0157
1	N/A	MXA1151	MXA1152	MXA1153	MXA1154	MXA1155	MXA1156	
2	MXA2150	MXA2151	MXA2152	MXA2153	MXA2154	MXA2155		
3	MXA3150	MXA3151	MXA3152	MXA3153	MXA3154			
4	MXA4150	MXA4151	MXA4152	MXA4153				
5	MXA5150	MXA5151	MXA5152					
6	MXA6150	MXA6151						
7	MXA7150							

N/A = Not Available

SPECIFICATIONS

1 x 150W Amplifier Module

Continuous rated power output:

8 Ohms: 150 W
4 Ohms: 230 W

THD: @ 80% rated power, 8 Ohms, 20Hz-20kHz)

Signal/Noise ratio (A weighted, ref. 150W)

Input sensitivity (ref. 150W into 8 Ohms)

Input impedance

Frequency response

20Hz - 20kHz
96kHz

1.23 V

20 k Ohms / 440 pF

±0.2 dB

-2 dB

Weight (net)

4.8 kg

2 x 80W Amplifier Module

Continuous rated power output:

8 Ohms: 80 W
4 Ohms: 120 W

THD: @ 80% rated power, 8 Ohms, 20Hz-20kHz)

Signal/Noise ratio (A weighted, ref. 80W)

Input sensitivity (ref. 80W into 8 Ohms)

Input impedance

Frequency response

20Hz - 20kHz
96kHz

0.02 %

>116 dB

900 mV

60 k Ohms / 440 pF

±0.2 dB

-2 dB

Weight (net)

4.8 kg

Physical Specification – MXA Power Amplifier

Dimensions (width x height x depth)

Weight (net – 7 modules installed)

Power Requirements

Voltage (set by internal wiring)

436 x 190 x 479 mm

44 kg

120 or 230 V

POWER RATING

The power rating of the MXA Power amplifier will depend upon the total number of modules installed, irrespective of whether they are 1 x 150W or 2 x 80W, as shown in the table below.

Total number of modules	Power rating in Volt-Amperes
1	215 VA
2	430 VA
3	645 VA
4	860 VA
5	1070 VA
6	1285 VA
7	1500 VA

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