APPLICATION NOTES

DYNAMIC MUSIC DISTRIBUTION DESIGN GUIDE

INTRODUCTION

Dynamic Music Distribution offers System Integrators the ability to scale inputs and zones conveniently and efficiently with dynamic routing capabilities embedded in its amplifier platforms. This makes it simpler to share music between different zones independently from the source location, and to carry control signals in an automated fashion, and without the need of a centralized DSP. This document aims to give the system designer some guides to enable them to navigate through designing Powersoft system for Dynamic Music Distribution deployment.

Zoning Capabilities

Dynamic Music Distribution enables the system to differentiate zones assigned to one or more amplifier and amplifiers outputs without needing a central DSP or zone mixer. Do take note that the number of zones that an amplifier can have doesn't correspond to the number of outputs of the amplifier.

Here are a list the various amplifiers and their zoning capability.

AMPLIFIER SERIES	MAXIMUM ZONES AVAILABLE
X8	4 Zones
X4	2 Zones
T Series 4 Channels	2 Zones
T Series 2 Channels	1 Zone
Mezzo AD 2 Channels	2 Zones
Mezzo AD 4 Channels	2 Zones
Ottocanali DSP+D	4 Zones
Quattrocanali DSP+D	2 Zones
Duecanali DSP+D	1 Zone

Table 1 – Maximum zones available on Powersoft amplifiers.

Notes:
A rule of thumb, except for the 2 channels Mezzo, all other amplifiers would have 1/2 of the numbers of zoning capability comparing to the outputs.

DANTE Input and Output Capabilities

The Dynamic Music Distribution capability of the system also enables dynamic routing. What dynamic routing do is that it enables the user to easily share their analog or AES3 signal with other amplifiers in the network that has DANTE inputs. This is made possible with the DANTE outputs that are available in the amplifiers.

Some consideration needed to be taken into account on the number of simultaneous DANTE sources that an amplifier can convert to and the number of simultaneous DANTE sources that one particular amplifier can take as an input. This is largely due to the type of DANTE card that are being deployed by these amplifiers.

The table below shows the type of DANTE card that is being deployed in the amplifiers, the number of DANTE inputs/outputs and DANTE flows available.

AMPLIFIER SERIES	DANTE CARD	DANTE Input	DANTE Output	DANTE Flows TX	DANTE Flows RX
X Series	Brooklyn II	16	8	32	32
T Series	Ultimo XT	4	4	2	2
Mezzo AD	Ultimo XT	4	4	2	2
Ottocanali DSP+D	Brooklyn II	16	8	32	32
Quattrocanali DSP+D	Ultimo XT	4	-	-	2
Duecanali DSP+D	Ultimo XT	2	-	-	2

Table 2 – List of Dante-enabled Powersoft amplifiers.

Notes:
One Dante flow can contain up to 4 audio channels. Dante "transmit" flow is used when sending audio out from a Dante device and a "receive" flow is used to accept audio in from another Dante device.

Multicast DANTE Outputs

By default, the DANTE outputs of the amplifiers are set as unicast. In an event where more Dante devices needs to subscribe to the Dante outputs, (2 for Mezzo AD and T Series and 32 for Ottocanali) users will find themselves running out of flows for a unicast subscription or find themselves running into "fan out" error. To solve this, the user needs to create a multicast flow. To create a multicast flow, the user would need to use DANTE Controller.

Notes:
Please refer to Audinate website for guides on creating a multicast flow.

GPI Capabilities

Apart from controlling the system using the WM Touch, users can also configure the system to be controlled using the WM Passive wall controllers. The WM Passive wall controller need to be connected to the "GPI" inputs of the amplifiers. Do take note that not all the amplifiers comes with "GPI".

The table below shows the amplifiers models and their available "GPI" inputs.

AMPLIFIER SERIES	GPI AVAILABLE
X Series	NONE
T Series	NONE
Mezzo / Mezzo AD	4
Ottocanali / Ottocanali DSP+D	NONE
Quattrocanali / Quattrocanali DSP+D	4
Duecanali / Duecanali DSP+D	2

Table 3 – List of GPI on Powersoft amplifiers

Notes:

The "GPI" signal from one amplifier can be shared over the network with another amplifier. This will enable the user to have WM Passive wall controller controlling other amplifiers in the network.

While some the non DSP+D amplifiers like the Quattrocanali does have "GPI" inputs, these are mainly for VCA control. For zone, source and scene control, a DSP enabled amplifier is required.

For Mezzo both A and AD models are able to have zone, source and scene control on the "GPI" inputs.

Locating the GPI port

The diagrams below shows the location of the "GPI" port of each amplifiers.
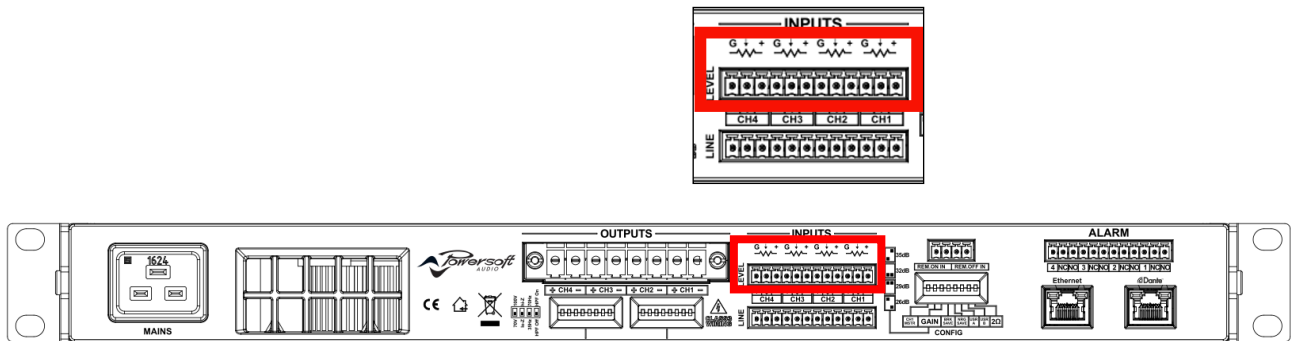
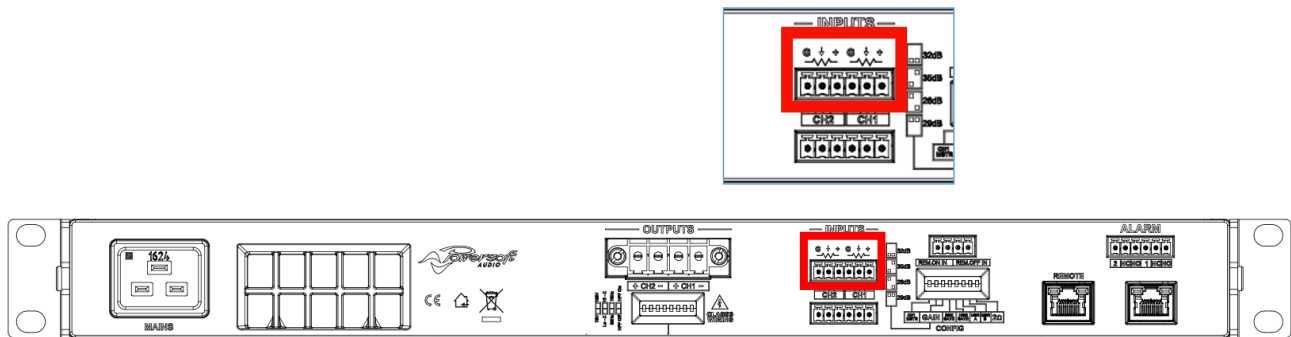

Figure 1 – Quattrocanali DSP+D GPI port location
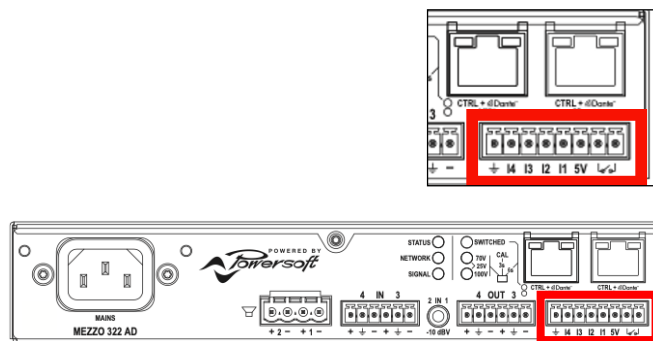

Figure 2 – Duecanali DSP+D GPI port location

Figure 3 – Mezzo GPI port location

Notes:
Please refer to the Application Notes on how to set up GPI control at www.powersoft.com or check out our YouTube channel for a tutorial video.

Deploying the project

To have zone, source and scene control on your project, the project need to be run or deployed first. If the project isn't run, the WM Touch will not have the control interface loaded and the WM Passive will only act as a VCA volume control for your amplifiers.

To run the project, you would need to make sure that your project are set up properly. If the project wasn't set up properly, an error will pop up when you try to run the project. To run the project, click on the "Rocket" icon and then click "Run".
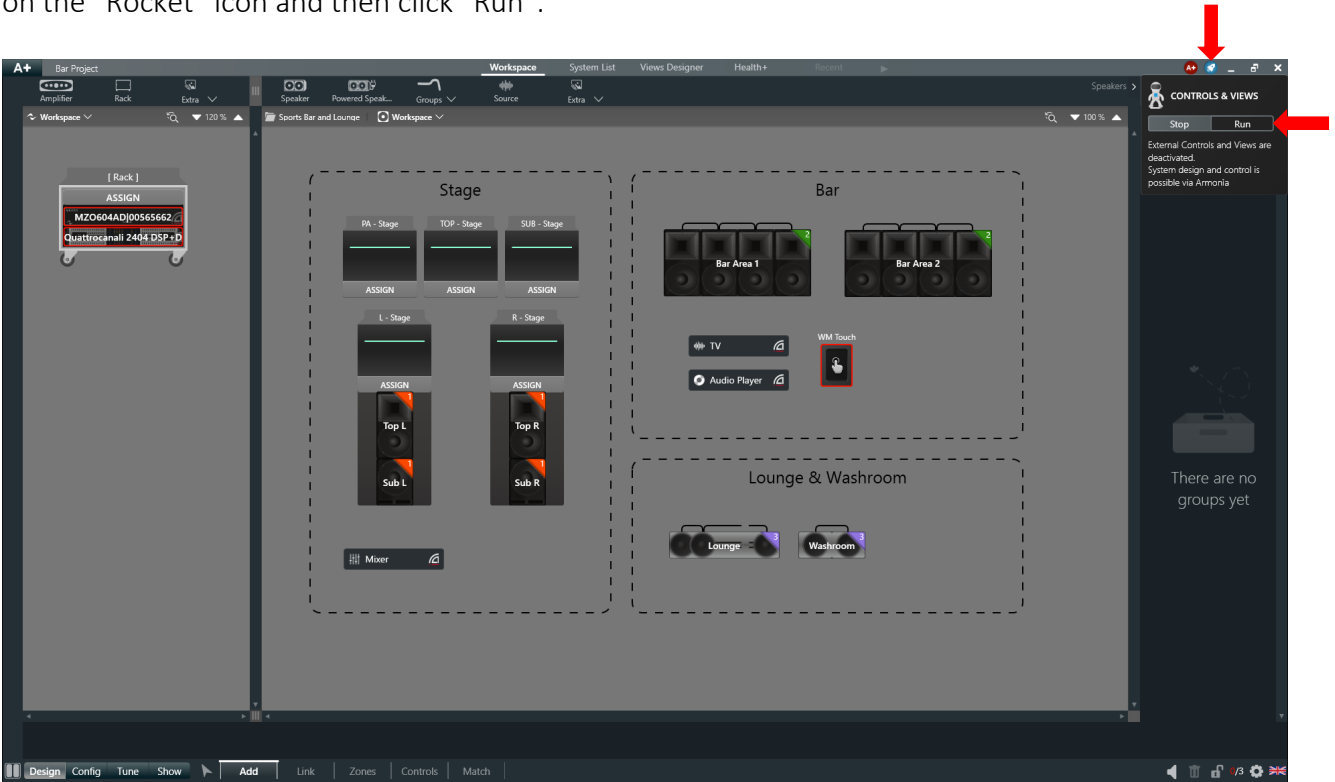

Figure 4 – Running controls & views

Design Guide Chart

The chart below shows some key points needed to be considered while designing the system for Dynamic Music Distribution which was discussed above for ease of reference.

AMPLIFIER SERIES	MAXIMUM ZONES AVAILABLE	GPI AVAILABLE	DANTE CARD	DANTE Input	DANTE Output	DANTE Flows TX	DANTE Flows RX
X8	4 Zones	-	Brooklyn II	16	8	32	32
X4	2 Zones	-	Brooklyn II	16	8	32	32
T Series 4 Channels	2 Zones	-	Ultimo XT	4	4	2	2
T Series 2 Channels	1 Zone	-	Ultimo XT	4	4	2	2
Mezzo AD 2 Channels	2 Zones	4	Ultimo XT	4	4	2	2
Mezzo AD 4 Channels	2 Zones	4	Ultimo XT	4	4	2	2
Ottocanali DSP+D	4 Zones	-	Brooklyn II	16	8	32	32
Quattrocanali DSP+D	2 Zones	4	Ultimo XT	4	-	-	2
Duecanali DSP+D	1 Zone	2	Ultimo XT	2	-	-	2

Table 4 – Summary of Powersoft amplifier capabilities

Document Title: DYNAMIC MUSIC DISTRIBUTION DESIGN GUIDE
Reference: DO000304.00 REV.00

Powersoft S.p.A
Via E. Conti, 5 - Scandicci (Fi) 50018 - Italy
TELEPHONE: +39 055 7350230

General Enquires: info@powersoft.it
Sales: sales@powersoft.it
Application & Technical Support: support.audio@powersoft.it
Service & Maintenance: service@powersoft.it

www.powersoft.com