

V 2250, V 2250D



Figure 1: Programmable amplifier module (PAM)

Description

The programmable amplifier module (PAM) is one of the basic components of the VARIZONE digital speaker system (DSS) bus. The PAM is installed and operated via a DSS docking station.

The PAM is available in the following versions:

- V 2250, without delay function
- V 2250D, with delay function to compensate for audio delays

The V 2250D allows for the choice between the following delay functions:

- 255 samples
- 0 - 255 ms, adjustable in 1 ms steps
- 0 - 680 ms, adjustable in 4 ms steps

The chosen delay function is adjustable in the software.

The PAM has the following functions:

- Selection of 2 of 8 available audio channels from the DSS bus
- Processing of the selected audio signal:
 - Equalization
 - Volume control
 - Delay control (only V 2250D)
- Amplification of the selected audio signals for the transmission via speakers

Main features

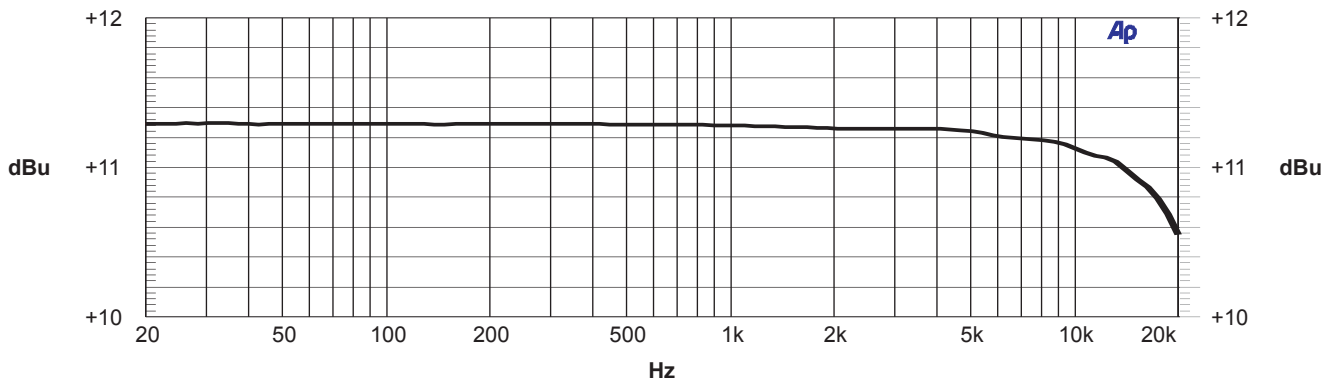
- Amplifier module for the installation of up to 4 external speakers
- Power supply of the PAM via the DSS bus
- 2-channel amplifier with 2 x 25 W peak capacity and 2 x 12.5 W continuous power
- Individual selection of 2 audio channels from the DSS bus
- Built-in 4-band equalizer and volume control for the processing of the selected audio signals
- Individual adjustment and monitoring of all installed PAMs via the VADIS system PC
- Individual monitoring of up to 4 speakers per PAM via the VADIS system PC
- Delay functions to compensate audio delays (only V 2250D)
- Easy installation, exchange and addressing of the PAM via a docking station
- Status LED for the PAM on the docking station
- Card edge connector for the connection of the PAM to the docking station

Specification

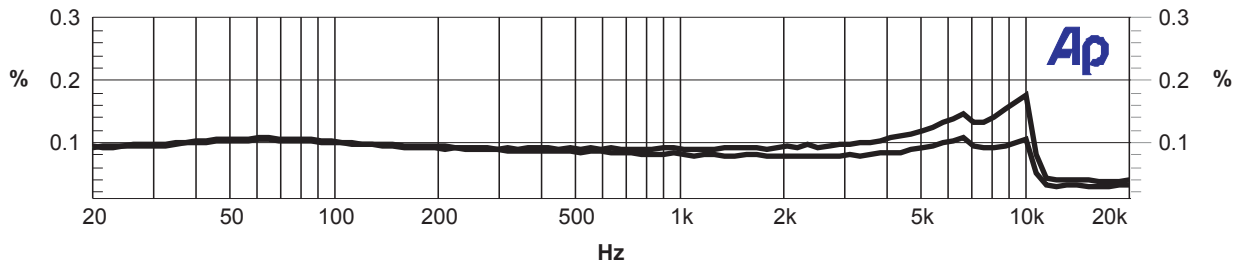
Connectors	34-pin card edge connector, male
Output	2 channels, each of them connectable to max. of 2 speakers
Selectable audio channels	2 out of 8 available on the DSS bus
Supply voltage	48 V typ., 55 V max., 28 V min., provided via the DSS bus
Power consumption	2.5 W @ muted 2.9 W @ unmuted, no input signal 7.1 W @ 2 x 1 W output 35.5 W @ 2 x 12.5 W output
Output power	2 x 12.5 W @ 8 Ω load
Sample frequency	48 kHz, locked to VADIS system
Dynamic range	88 dB typ., 85 dB min. @ 2 x 12.5 W @ 8 Ω ref., RMS, A-weighted
Frequency response	+0.2/-0.5 dB @ 20 Hz - 5 kHz, ref. 1 kHz, 1 W @ 8 Ω +0.2/-0.5 dB @ 20 Hz - 10 kHz, ref. 1 kHz, 1 W @ 8 Ω +0.2/-1.5 dB @ 20 Hz - 20 kHz, ref. 1 kHz, 1 W @ 8 Ω +0.2/-0.5 dB @ 20 Hz - 5 kHz, ref. 1 kHz, 1 W @ 4 Ω +0.2/-1.5 dB @ 20 Hz - 10 kHz, ref. 1 kHz, 1 W @ 4 Ω +0.2/-5.0 dB @ 20 Hz - 20 kHz, ref. 1 kHz, 1 W @ 4 Ω
THD + N	0.1 % typ., 0.2 % max. @ 1 W @ 8 Ω, 1 kHz 0.1 % typ., 0.25 % max. @ 1 W @ 8 Ω, 20 Hz - 20 kHz 0.1 % typ., 0.3 % max. @ 12.5 W @ 8 Ω, 20 Hz - 20 kHz
Minimum load	4 Ω per channel 8 Ω per speaker
Speaker monitoring	Monitoring of up to 4 speakers with 20 kHz pilot tone
Pilot tone level	1 V per speaker, RMS
Anti clipping circuit	Prevents output from clipping if supply voltage drops
Delay (optional)	255 samples max. 0 ms min., 255 ms max., adjustable in 1 ms steps 0 ms. min., 680 ms max., adjustable in 4 ms steps
Internal fuses	F2: T1.5 A typ., SMD fuse slow blow, Littlefuse 0454001
Ambient temperature limits	0° C min., 50° C max. for the operation of the device
Meantime between failure (MTBF)	• V 2250 285 k hours typ. @ ≤ 50% load and 50° C ambient temperature* 208 k hours typ. @ max. load and 50° C ambient temperature* • V 2250D 246 k hours typ. @ ≤ 50% load and 50° C ambient temperature* 200 k hours typ. @ max. load and 50° C ambient temperature* * Calculated on the basis of the data sheet values of the components or according to MIL 217F
Dimensions	Depth: 140.2 mm / 5.51" Height: 41.2 mm / 1.62" Width: 132.1 mm / 5.2"
Weight	460 grams typical

Graphs

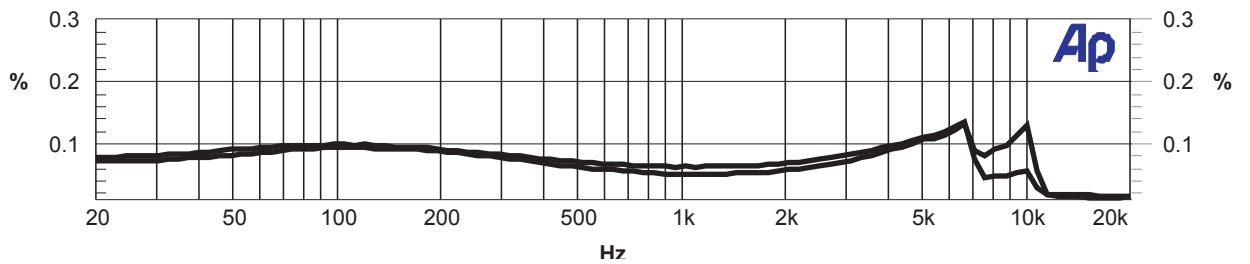
Typical frequency response at 1 W / 8 Ω load:



Typical THD + N at 2 x 1 W, 8 Ω load:



Typical THD + N at 2 x 12.5 W, 8 Ω load:



Front view

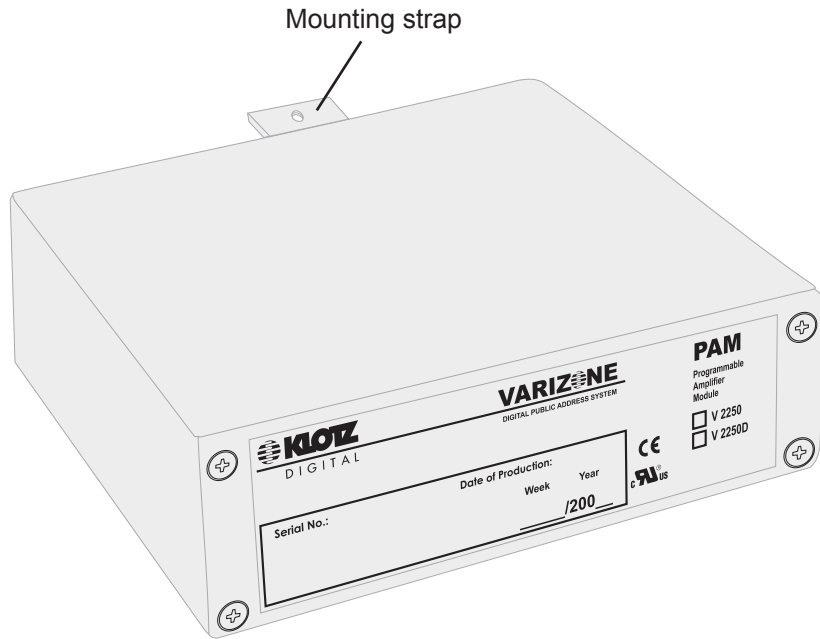


Figure 2: PAM, front view with mounting plate

Rear view

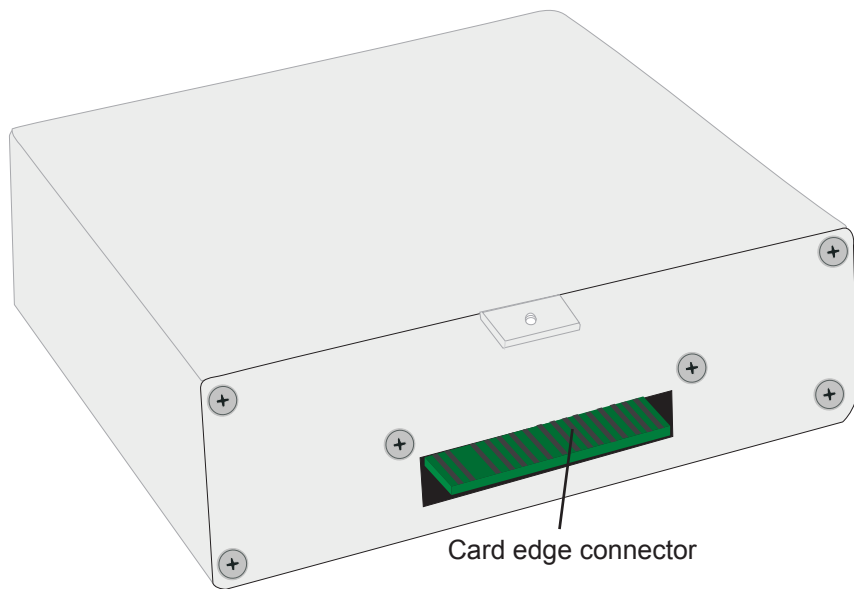


Figure 3: PAM, rear view with card edge connector

