SHOW
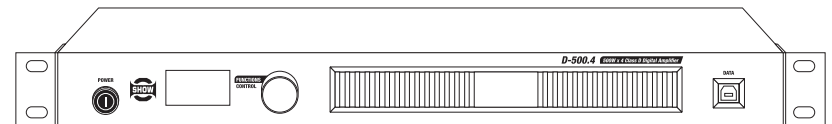
THE UNIVERSE OF INSTALLATION

SWITCHING POWER PROFESSIONAL AMPLIFIER

User's Manual

D500.4
DSP Control

D-500.4 500W × 4 Class D Digital Amplifier

Instructions of D500.4 DSP Control Pages
1. Gain Adjustment of Output Channel
AS Figure1 shows, A,B,C,D that located to the bottom of this page are output channels. GAIN on the right shows gain value of each channel, while METER on the left dynamically indicates meters of each channel.

Rotate CONTROL FUNCTIONS knob on the panel beside LCD screen to select different output channels, and adjust the gain value of the selected channel. For example: rotate the CONTROL FUNCTIONS knob, select output channel A, as shown in Figure 1. Press the knob to select the gain value of channel A, as shown in Figure 2, then rotate the knob to set its gain value. Once the setting is finished, press the knob again to save current setting value. Use the same way to set gain value of B, C, D.

2. MENU Page
Rotate FUNCTIONS CONTROL knob, select MENU, as shown in Figure 3. Press the knob to enter MENU page, as shown in Figure 4. Select different options on this page to set corresponding parameters.

3. ROUTING Page
D500.4 can route 6 input channels'(CH1, CH2, CH3, CH4, CH1+2, CH3+4) audio signal to A, B, C, D and output, the way of setting is as follows:
1) Figure 5 shows to route input channel CH1 to channel A and output.
2) If you need to route other channels to channel A, please press CONTROL FUNCTIONS knob and rotate the knob to select channels, as shown in Figure 6. After selecting OK, press the knob again to save the settings.
3) Use the same way to set input channels that you want to be routed to B, C, D .

After completing setting, use FUNCTIONS CONTROL knob to select EXIT and exit current page, as Figure 7 shows. It will return back to the page as shown in Figure 4 after exit current page successfully.
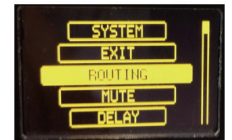

| Figure 1 | Figure 2 | Figure 3 | Figure 4 |

| Figure 5 | Figure 6 | Figure 7 |

4. MUTE Page

Set which channel(s) to be muted in this page. In the page as Figure 8, press FUNCTIONS CONTROL knob to mute channel A, as shown in Figure 9. Use the same way to mute B, C, D.

After completing setting, use FUNCTIONS CONTROL knob to select EXIT and exit current page, as Figure 10 shows. It will return back to the page as shown in Figure 4 after exit current page successfully.

5. DELAY Page

Set delay time of each channel in this page. In the page as Figure 11, press FUNCTIONS CONTROL knob and rotate to set delay time of channel A, as shown in Figure 12. Use the same way to set delay time of B, C, D.

Note that you can only change the first parameter(delay time) in this page, while other 2 parameters which mean delay distance(meter and feet) will vary with delay time, the formula: distance=sound velocity * time.

After completing setting, use FUNCTIONS CONTROL knob to select EXIT and exit current page. It will return back to the page as shown in Figure 4 after exit current page successfully.

6. INVERT Page

Set signal invert of each channel in this page. In the page as Figure 13, press FUNCTIONS CONTROL knob and rotate to set signal invert of channel A(invert the signal by 180°), as shown in Figure 14. Use the same way to set signal invert of B, C, D.

This function can be used to correct audio signals which are out of phase as well as to cancel/reinforce each other.

After completing setting, use FUNCTIONS CONTROL knob to select EXIT and exit current page. It will return back to the page as shown in Figure 4 after exit current page successfully.

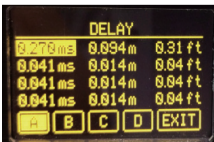Figure 8   Figure 9   Figure 10   Figure 11

Figure 12   Figure 13   Figure 14

2) TEMP Setting

Delay parameters will be different at different temperature setting. When set delay time to be the same at different temperature, the delay distance will be different. For instance, as shown in Figure 48 and Figure 49, when set TEMP to be 9 centigrade and DELAY time to be 0.104ms, the DELAY distance is 0.035m and 0.11ft.

While setting TEMP to be 45 centigrade and DELAY time also to be 0.104ms, which is the same as that at 9 centigrade, we can find that DELAY distance become 0.037m and 0.12ft.

3) Device NAME Setting

Select NAME in SETUP page to change device name. Please refer to SAVE page in section 10 about rename preset to rename device step by step. As shown in Figure 52~55.

After completing setting, please return back to initial page to check the modified device name, as shown in Figure 56.

Figure 48   Figure 49   Figure 50   Figure 51

Figure 52   Figure 53   Figure 54   Figure 55

Figure 56

12. SYSTEM Page

Use FUNCTIONS CONTROL knob to select and enter SYSTEM page, the initial page is as Figure 38 shows. You can set work mode, work temperature and device name in this page.

1) WORMODE Setting
There are below work modes to select: NORMAL, AB BRI, CD BRI, AB BRI, AB CD BRI and ABCD LINK.
- NORMAL
As shown in Figure 38 and Figure 39, when set WORKMODE to be NORMAL, A,B,C and D will appear to be independent in initial page.

- AB BRI
As shown in Figure 40 and Figure 41, when set WORKMODE to be AB BRI, AB channel will appear to be bridged in initial page, while C and D channel is still independent. In this mode, audio signal that originally output to channel A will also output to channel B. The signal that output to channel B owns the same level and reverse phase as signal output to channel A, while audio signal that originally output to channel B will be cut off. In this way, output power can be enlarged double.
- CD BRI
Similar to AB BRI, as shown in Figure 42 and Figure 43.
- AB CD BRI
Bridge AB channel and CD channel at the same time, as shown in Figure 44 and Figure 45.
- ABCD LINK
When set WORKMODE to be LINK, the effect of four channel's output audio signal will be the same. For instance, if adjust gain or mute of channel A, these parameters of channel B,C,D will change synchronously.
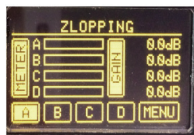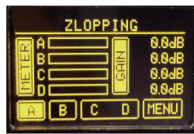

| Figure 38 | Figure 39 | Figure 40 | Figure 41 |

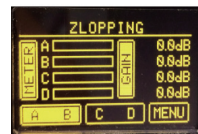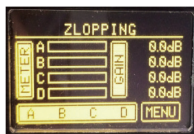| Figure 42 | Figure 43 | Figure 44 | Figure 45 |

| Figure 46 | Figure 47 |

7. EQUALIZER Page

Set EQ parameter of each channel in this page. EQ can compensate and correct frequency characteristic, through which to make its frequency response characteristic curve to be more smooth and straight. On D500.4, you can adjust 8 band EQ. You can adjust EQ effect through setting parameters of center frequency, Q and GAIN.
- FREQ
The center frequency is the middle of the pass-band between the lower and upper cutoff frequencies which define the limits of the band.
- Q
The Q is the ratio of the center frequency to the bandwidth. If the center frequency is constant, the bandwidth is inversely proportional to the Q, which means that if you raise the Q, the bandwidth will be narrowed.
- GAIN
Set the gain attenuation or boost at the center frequency for the Low/Low-mid/High-mid/High band separately. When Gain is 0dB, center frequency and Q are all invalid.
- BP
Set BP to bypass all signal to next block. When set BP as "N", the bypass function isn't active, signal will be processed by EQ and then flow to next block. While setting it as "Y" means to bypass all signal to next block.

Please follow below steps to set these parameters:
1) In the page as Figure 15, select channel A, press FUNCTIONS CONTROL knob and rotate to set parameter of some band, as shown in Figure 16 and Figure 17.

2) Use FUNCTIONS CONTROL knob to select 2-band EQ, press this knob then rotate it to set value of FREQ, as shown in Figure 18. After completing setting, press the knob again to save this value. Use the same way to set Q and GAIN. As shown in Figure 19-21.

3) Move cursor to position where the left arrow indicates, as shown in Figure 22. Press FUNCTIONS CONTROL knob again to return cursor to 2-band EQ again, as shown in Figure 23.
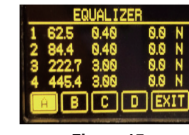The similar way to adjust other band EQ parameters.
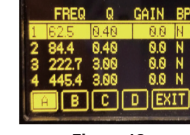

| Figure 15 | Figure 16 | Figure 17 | Figure 18 |

| Figure 19 | Figure 20 | Figure 21 | Figure 22 |

| Figure 23 | Figure 24 |

4) Set parameters of LP, HP

- HP

This is a high-pass filter. It can pass higher frequencies. When set to its lowest value, the filter is off.

- LP

This is a low-pass filter. It can pass lower frequencies. When set to its highest value, the filter is off.

In the page as Figure 24, press FUNCTIONS CONTROL knob and rotate to set frequency and type of the filter. In Figure 25, you can see the setting of different filter type. Different type means different shape and different filter frequency range.

After completing setting, use FUNCTIONS CONTROL knob to select EXIT and exit current page, as shown in Figure 26. It will return back to the page as shown in Figure 4 after exit current page successfully.

8. COMPRESSOR Page

Set compression parameters of each channel in this page. Compressor will compress signal that higher than threshold with specified ratio, then output it.

- THRES

Set the compression threshold for selected channel.

If amplitude of an audio signal exceeds a certain threshold, the compressor will reduce the level of this signal with specified ratio;

If amplitude of an audio signal is lower than this given threshold, compressor won't work, signal will flow to next block directly.

- RATIO

Set the compression ratio for selected channel.

The ratio determines the amount of gain reduction. For example, a ratio of 4:1 means that if input level is 4 dB over the threshold, the output signal level will be 1 dB over the threshold.

- ATTACK

Set the compressor's attack setting for selected channel.

The attack setting is the period when the compressor is decreasing gain to reach the level that is determined by the ratio.

- RELEASE

Set the compressor release time for selected channel.

Release sets the length of time that the compressor takes to return to its normal gain once the signal level drops below the threshold.

Please refer to introduction in section 7 about EQUALIZER page for setting steps. The effect is as shown in Figure 27 and Figure 28.

| Figure 25 | Figure 26 | Figure 27 | Figure 28 |

9. Preset Page

Set to enter SAVE page and LOAD page for corresponding parameters setting from this page. As shown in Figure 29.

10. SAVE Page

Save DSP parameters setting in this page, as well as revise preset name.

Save the preset after a series of above settings and rename this preset.

Below gives you an instruction of renaming the preset:

1) Use FUNCTIONS CONTROL knob to select a preset, press this knob to select a letter, then rotate it to change this letter, as shown in Figure 30~34. Repeat this step and rename this preset by modifying letters one by one.

2) After completing modification, select SAVE to save current preset; otherwise, select CANCEL to exit the current preset editing, as shown in Figure 35.

After completing setting, use FUNCTIONS CONTROL knob to select EXIT and exit current page, as shown in Figure 36. It will return back to the page as shown in Figure 29 after exit current page successfully.

11. LOAD Page

Load preset that was saved before in this page. Use FUNCTIONS CONTROL knob to select a preset, then select LOAD to load the selected preset to device; otherwise, select CANCEL to exit current editing, as shown in Figure 37.

After completing setting, use FUNCTIONS CONTROL knob to select EXIT and exit current page . It will return back to the page as shown in Figure 29 after exit current page successfully.
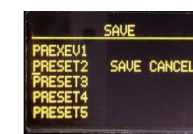

| Figure 29 | Figure 30 | Figure 31 | Figure 32 |

| Figure 33 | Figure 34 | Figure 35 | Figure 36 |

Figure 37