

MASTER DELAY BOX

Home Theater Audio Delay Corrector

P R I M A R E



Primare Delay Box

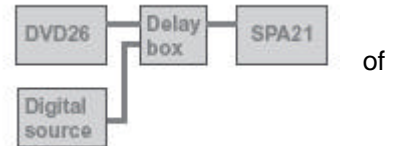


Audio Delay Corrector

The Master Delay Box is designed to restore perfect lip-syncing to the audio output from your digital satellite receiver and DVD-player. Modern displays, such as plasma screens, LCD screens and projectors use sophisticated imaging processors to produce the best picture possible. This processing takes time and produces a delay in the picture display. This is called a lip-sync error. This is particularly noticeable in speech, where the voice comes first and the lips move after. Lip-syncing anomalies may also affect satellite broadcasts and can occur when the transfer of older movie soundtracks to digital surround sound for DVD. The effect can be so pronounced that the film or broadcast becomes difficult to watch.

The Master Delay Box has four presets, two per input (coax and optical) and adjustable delay over a 0 - 600 ms range. There is also a true bypass of all delay correction circuits. The satellite receiver connects optically and DVD-player coaxially to the Delay Box.

The Delay Box seamlessly performs format conversion, a single coax (or toslink) feeds the audio processor. Certain A/V processors have corrective circuitry in-built, but experience has shown that these processors work best with a signal that is already synced. By inserting the master Delay Box between source and processor this advanced digital device delays the system sound by tiny increments and relieves the processor the power and memory drain associated with integral delay correction. It's also an innovative upgrade for those systems lacking this facility.



The Master DelayBox corrects lip sync errors in any HOME THEATER system by using an SPDIF-signal memory with a capacity of 600mS delay. For example the Master DelayBox is connected between a digital source (DVD player for instance) and a processor or integrated A/V amplifier. The unit delays the digital audio signal by a time of your choice. This results in a perfect sound and picture synchronization.

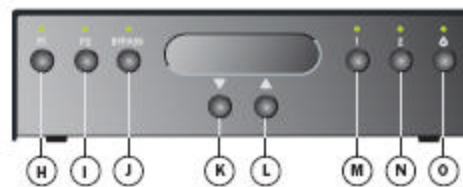
The unit incorporates a true bypass mode that is switched in by the use of solid-state relays. While in this mode the inputs are directly connected to the outputs. The Master DelayBox detects the 44.1 kHz sampling rate from a standard compact disc and switches automatically into bypass mode.

Back panel connections



- A. Optical, Toslink, output
- B. Coax, SPDIF, output
- C. Optical, Toslink, input
- D. Coax, SPDIF, input
- E. DATA (RS232) input for home installation
- F. IR input
- G. Main power input (12V)

Front panel display



- H. Preset 1
- I. Preset 2
- J. Bypass
- K. Decrease delay time in milliseconds
- L. Increase delay time in milliseconds
- M. Input 1 (coax digital audio)
- N. Input 2 (Toslink)
- O. Standby

Technical performance

The Master DelayBox is capable of full conversion between a coax and an optical signal. Any input signal to coax will be available from both outputs (coax and Toslink), as any input signal to Toslink will be available from both coax and Toslink outputs.

You select the input using buttons on the front panel or on the remote control unit. Two presets are available for each input.

Note! No conversion is carried out when the delay box is in BYPASS mode.

The delay time value displayed by the Master DelayBox steps one millisecond at a time until the nearest ten. Then it steps 10 milliseconds at a time until the nearest hundred and thereafter it steps a hundred at a time up to 600 milliseconds. The time delay value counts down in the same way.

Inputs

Optical, Toslink, Coax, SPDIF,

External RS232C control and IR inputs are also provided for the use with automation systems.

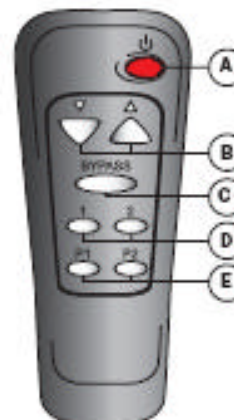
Outputs

Optical, Toslink, Coax, SPDIF

Intuitive user interface

The Master Delay Box can be controlled through a very simple and intuitive set of front panel controls. Alternatively all the functions of the Delay Box can be controlled by the Remote Control supplied with the Delay Box.

The Remote Control



- A. Standby ON/OFF
- B. Increase/decrease delay time in milliseconds
- C. Bypass
- D. Input 1 and 2
- E. Preset 1 and 2

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How to connect the Master Delay Box to other components in your system.

Power connection



Warning: Before connecting power, check that the required supply voltage, indicated on the AC/DC-adapter, corresponds to your local AC supply. If a different voltage is listed do not connect the Delay Box to the main power. This product is sold all over the world and we want you to check that the correct transformer was sent for your local power. If there is any problem contact Allen Avionics @ 516-248-8080

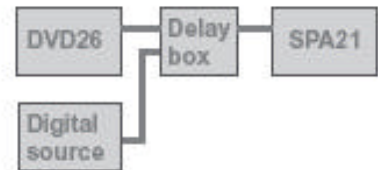
NOTE: Always disconnect the Master Delay Box and all other units in the system from the main power before connecting or disconnecting any of the cables. Not disconnecting the power might seriously damage the unit.

Safety instructions

To prevent fire or shock hazard, do not expose this device to water. Keep the Master Delay Box away from objects filled with liquids, such as vases..

Connecting the Delay Box in your system

- Connect the digital audio coax cable (S/PDIF) or optical cable (TOSlink) from the DVD or other source into the **INPUT** of the Delay Box.
- Connect another digital audio (S/PDIF) coax cable or optical cable (TOSlink) from the Delay Box **OUTPUT** to the amplifier.

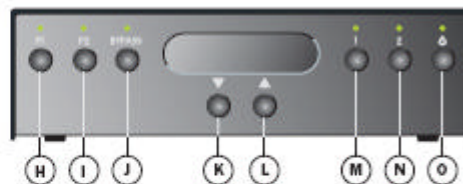


Back panel connections



- A. Optical, TOSlink, output
- B. Coax, SPDIF, output
- C. Optical, TOSlink, input
- D. Coax, SPDIF, input
- E. DATA (RS232) input for home installation
- F. IR/input
- G. Main power input (12V)

Front panel display




- H. Preset 1
- I. Preset 2
- J. Bypass
- K. Decrease delay time in milliseconds
- L. Increase delay time in milliseconds
- M. Input 1 (coax digital audio)
- N. Input 2 (TOSlink)
- O. Standby

Connect Power Adapter

- Plug the lead from the power adapter into the Master Delay Box and the other end into a wall socket.

The standby indicator will light up and the Delay Box is ready for operation

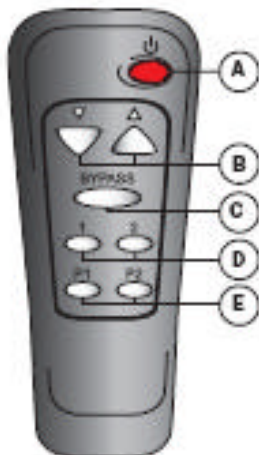
Switching to standby

- Pressing  on the front panel or the remote control, will change the standby mode.

Infra-red remote control

The Delay Box is fully controlled by an infra-red remote control.



The Remote Control



- A. Standby ON/OFF
- B. Increase/decrease delay time in milliseconds
- C. Bypass
- D. Input 1 and 2
- E. Preset 1 and 2

IR-back input

The Delay Box can also be controlled by using the IR-input at the backpanel. Make sure that the Delay Box is in standby mode.

- Hold down button **2** on the front panel and press . The standby indicator will blink **-2-**.
- Hold down button **1** on the front panel and press  to restore the IR-input to the front. **-1-** is displayed for a couple of seconds.

Dimming the front panel display

- Simultaneously press button **1** and **2** on the front panel for two seconds. The display will dim. When adjusting any values the display will temporary light up for a couple of seconds.
- Simultaneously press button **1** and **2** on the front panel for two seconds to restore the Delay Box from dim mode.

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Determining a delay value

The amount of delay is presented on the front panel display as soon as the Delay box is connected in the system.



- Press button **1**.
Use the buttons **?** and **?** on the front panel or the remote control to select a required delay time.
- Press button **2**.
Use the buttons **?** and **?** on the front panel or the remote control to select a required delay.

The delay time value steps one millisecond at a time until the nearest ten. Then it steps 10 milliseconds at a time until the nearest hundred and thereafter it steps a hundred at a time up to 600 milliseconds. The time delay value counts down in the same way.

Presetting a delay value

- Press button **P1** for 3 sec. The indicator will blink three times and the preset value is stored.
- Press button **P2** for 3 sec. The indicator will blink three times and the preset value is stored

Bypass

Automatic bypass

The unit detects 44,1 kHz sampling rate from a standard compact disc and switches automatically into bypass mode.



Manual bypass

If delay is wanted for 44,1 kHz sampling rate:

- Press and hold the **BYPASS** button on the front panel for a couple of seconds. The indicator will flash three times.

Use the buttons **?** and **?** to increase or decrease the delay time.

- To restore automatic bypass, press and hold the **BYPASS** button on the front panel again. The indicator will flash two times.

IR RS232 interface/IR-commands

| IR | Value | FRONT | Description |
|----------|-------|-------|--------------------------------|
| Standby | 1 | | Standby On |
| Operate | 2 | | Standby Off |
| Standby | 12 | | Toggle Standby/Operate |
| Up | 3 | | Increasing delay time |
| Down | 4 | | Decreasing delay time |
| Input 1 | 5 | | Used for main input selection. |
| Input 2 | 6 | | Used for main input selection. |
| Preset 1 | 7 | | Deleytime memory 1 |
| Preset 2 | 8 | | Deleytime memory 2 |
| Bypass | 9 | | Enable Bypass Mode. |

The information in this guide is believed to be correct as of the date of publication. However, our policy is one of continuous development and so the information is subject to change without notice, and does not represent a commitment on the part of Primare Systems AB.

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FCC Warning: This equipment generates and can radiate radio frequency energy and if not installed and used correctly in accordance with our instructions may cause interference to radio communications or radio and television reception. It has been type-tested and complies with the limits set out in Subpart J, Part 15 of FCC rules for a Class B computing device. These limits are intended to provide reasonable protection against such interference in home installations.

EEC: This product has been designed and type-tested to comply with the limits set out in EN55013 and EN55020.

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