A large, stylized, gray letter 'M' is centered on a black background. The 'M' is composed of thick, solid gray strokes. The words 'user guide' are written in a white, lowercase, sans-serif font, oriented diagonally and positioned within the right-hand vertical stroke of the 'M'.

user guide

Meridian 568.2 Digital Surround Processor

Meridian 568.2 Digital Surround Processor User Guide

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England

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This guide was produced by Human-Computer Interface Ltd, <http://www.interface.co.uk>

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Introduction

The Meridian 568.2 Digital Surround Processor combines a completely digital surround-sound processor with a high-performance digital preamplifier in a single integrated unit. It takes advantage of the latest techniques in high-precision analogue electronics and digital signal processing, and the result is an impressively realistic and exciting reproduction of music and cinema sound.

The 568.2 Digital Surround Processor accepts both analogue and digital sources, and supports all the current two-channel and multi-channel audio formats including PCM, Dolby Digital (AC-3), DTS, and MPEG. It also supports discrete multi-channel sources, allowing direct connection to DVD-Audio players such as the Meridian 598.

For instructions on setting up the unit turn to *Setting up the digital surround processor*, page 53. Once the digital surround processor has been set up refer to *Using the digital surround processor*, page 13, for information about getting the best results from all your music and film recordings.

The 568.2 Digital Surround Processor

The 568.2 Digital Surround Processor incorporates the result of many years of research and development by Meridian into several innovative technologies, including Meridian's MHR Smart Link.

MHR Smart Link

The 568.2 Digital Surround Processor can be supplied with an optional multi-channel input card, which provides a proprietary multi-channel input called the MHR Smart Link. This is the recommended way of connecting together a Meridian 568.2 Digital Surround Processor and a Meridian 598 DVD-Audio Player when used together in a system, allowing the two units to operate together in a fully integrated way.

The MHR Smart Link transfers six encrypted digital audio channels directly from the 598 to the 568.2, together with intelligent stream content information from the source, providing several significant features and benefits over other methods of connection.

Upsampling

The 598 can be configured to decode encoded audio streams internally, and send out digital audio on the MHR Smart Link.

This allows the 568.2 to upsample the audio stream if possible and process the signals at a higher rate, giving improved audio performance.

Intelligent stream content information

With a conventional digital connection between a DVD-Audio player and a digital surround processor, the surround processor cannot identify whether the source material is music or a movie soundtrack, requiring the user to manually select an appropriate DSP preset depending on the type of source material.

The MHR Smart Link carries intelligent stream content information from the DVD-Audio player, and this includes information about the source material, such as the encoding on the disc. The 568.2 can use this information to select a suitable DSP preset, such as Trifield for two-channel music or PLII Movie for a two-channel movie soundtrack. The MHR Smart Link even allows the 568.2 to select the appropriate preset if you change audio streams within a disc, or play a disc containing several different types of audio material.

Enhanced source

To use this feature of the MHR Smart Link you simply identify one multi-channel source as the enhanced source. For this

source you can then specify seven different presets to handle the alternative types of audio stream. Three of these presets are for traditionally encoded streams: Dolby Digital, DTS, and MPEG. The remaining four presets are specifically for the different types of audio stream available over the MHR Smart Link.

The 568.2 standard Types set the DVD source as the enhanced source and assigns presets as shown in the following table:

| <i>Stream</i> | <i>Description</i> | <i>Default preset</i> |
|---------------|--|-----------------------|
| Music 2 | Two-channel music material such as from a CD. | Trifield |
| Music 6 | Multi-channel music from a DVD-Audio disc. | Discrete |
| Movie 2 | Two-channel audio streams from a DVD-Video soundtrack. | PLII Movie |
| Movie 6 | A decoded multi-channel DVD-Video soundtrack. | Cinema |

You can change any of these presets using the **Store** key; for more information see *Changing the DSP preset for a source*, page 33.

Multi-channel presets

The 568.2 is provided with two alternative multi-channel presets: Discrete and Cinema. Discrete is intended for use with music material. Cinema is a user preset based on Discrete but with settings more appropriate for movie material.

Subwoofer configuration

The intelligent stream content information provided by the MHR Smart Link also allows the 568.2 to choose an appropriate subwoofer configuration depending on the stream content: the Music layout for Music 2 and Music 6 DSP presets, and the 5.1 Movie layout for Movie 2 and Movie 6 DSP presets.

Meridian High Resolution (MHR)

The 568.2 Digital Surround Processor supports Meridian High Resolution (MHR), to allow you to connect to other MHR-compliant Meridian products to take advantage of high-rate audio sources, and provide the additional benefits of lower jitter and improved sound quality on all sources.

MHR is a proprietary secure encoding format that uses encryption and anti-copy methods to provide a secure copyright

protection environment, and allow the secure transfer of audio streams within a Meridian-only system for playback only.

500 Series communications

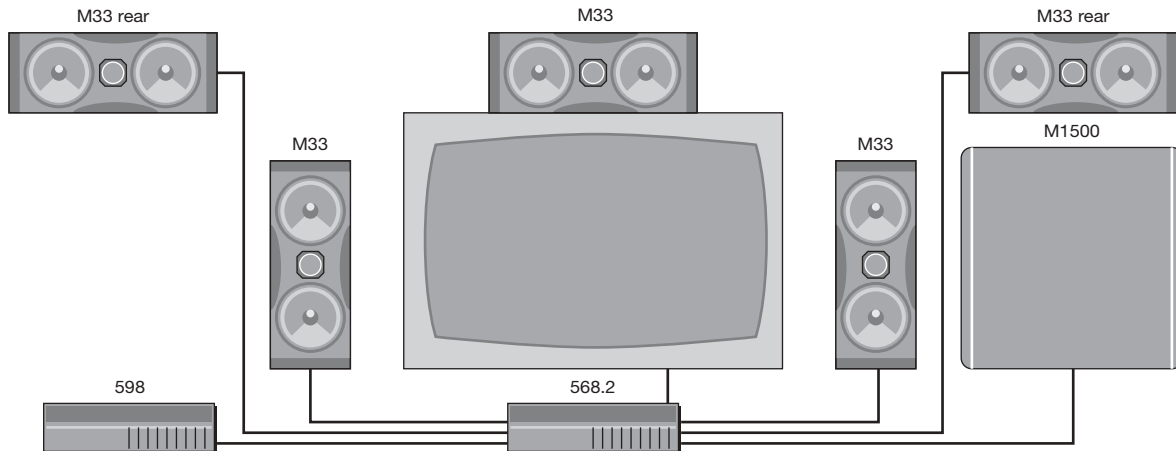
The 568.2 Digital Surround Processor is part of the Meridian 500 Series of advanced digital, analogue, and video components, and these incorporate a sophisticated communications link, to allow you to control any combination of units using a single remote, and ensure that they will work together as a fully integrated system.

The communications system also allows you to extend your hi-fi system into two or three rooms, with the ability to control the sources in one room from the controller in another room.

The following pages show two recommended configurations based on the 568.2 Digital Surround Processor to illustrate the flexibility of the Meridian 500 Series.

Sample configurations

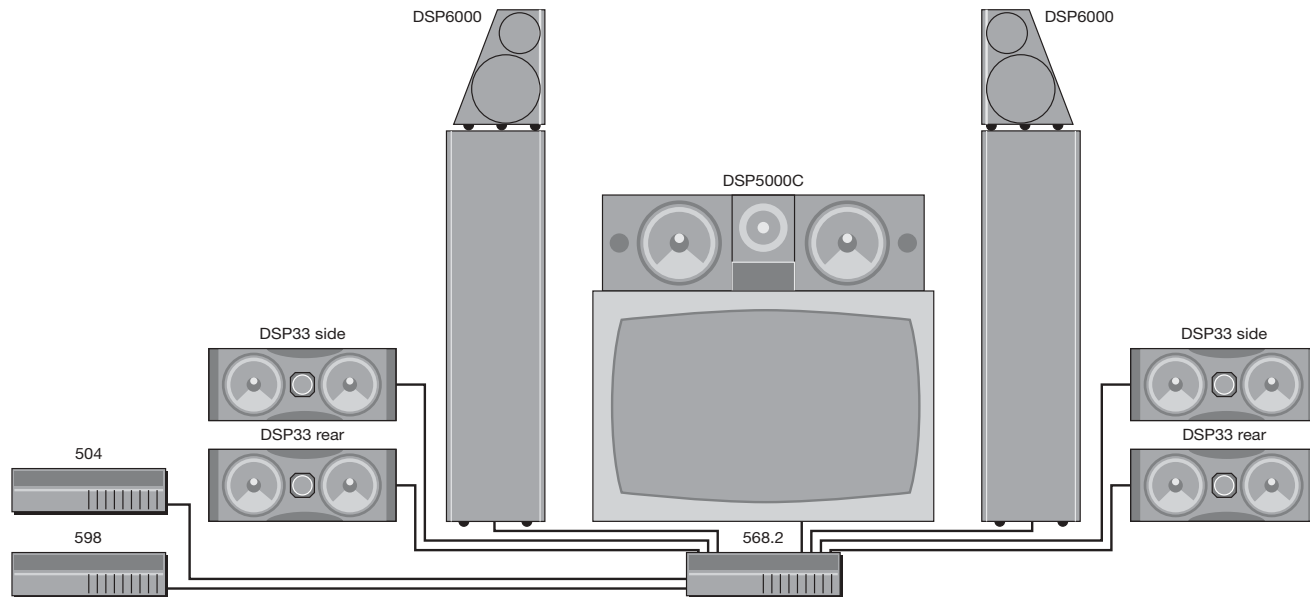
Meridian Compact Theatre™



The Meridian 568.2 Digital Surround Processor is ideal for use with the M33 Active Analogue Loudspeaker and M1500 Active Subwoofer. The M33 provides an unusually good response for such a compact case, and can be mounted either horizontally or vertically for total flexibility.

The 568.2 Digital Surround Processor can connect directly to up to eight Meridian active loudspeakers, allowing you to create a 5.1 or 7.1 analogue theatre ideal for superb music and cinema sound in the home.

Meridian Digital Theatre™



The 568.2 Digital Surround Processor can be used with two Meridian DSP6000 Digital Loudspeakers, and a DSP5000C Digital Centre Loudspeaker, to provide audiophile-quality sound. A further two or four DSP33 Active Digital Loudspeakers can be added as side or rear loudspeakers to give extremely convincing

multi-channel reproduction from music and film sources. The Meridian 598 DVD Player is an ideal source for use with the 568.2. It allows you to play DVD-Audio, DVD-Video, and audio CDs, and connects six discrete channels to the 568.2 using Meridian's MHR Smart Link.

Specification and accessories

Specification

Digital inputs

4 x cable, 75Ω, IEC958 and data compatible, up to 24 bits.

1 x optical, Toslink (EIAJ), IEC958 and data compatible, up to 24 bits.

Analogue inputs

2 x unbalanced, 20kΩ input impedance.

1 x stereo 24-bit Delta-Sigma ADC.

Optional input

1 x MHR Smart Link connection; see *MHR Smart Link*, page 2.

Analogue outputs

4 x stereo 24-bit Delta-Sigma DAC.

8 x unbalanced outputs for centre, sub, rears, mains, and sides or subs.

3 x balanced outputs for mains and centre.

Outputs variable between 0 and 3.5Vrms, output impedance 47Ω.

Distortion <0.01%.

Noise and hum <-95dB CCIR.

Digital outputs

4 x stereo SPDIF on cable, 75Ω, up to 24-bit precision.

Tape outputs

1 x digital bypass.

Video circuit

1 x composite video loop with on-screen display: phono, 75Ω, 1.5V p-p, PAL/NTSC/SECAM.

1 x S-video loop with on-screen display: Y/C on minidin, 75Ω, 1.5V p-p, PAL/NTSC/SECAM.

Control

2 x Meridian Comms.

9-pin D connector for RS232 PC setup and control.

Processing

2 x Motorola 56002 running at 66MHz.

2 x Motorola 56367 running at 150MHz.

1 x Motorola 56007 running at 82MHz.

Internal precision maintained using 24-bit and 48-bit arithmetic.

Dimensions 321mm x 88mm x 332mm
 (12.7" x 3.5" x 13.1") (W x H x D).

Weight 5kg (10lb).

Meridian Audio reserves the right to amend product specifications at any time.

Available accessories

The following accessories are available from your dealer.

Meridian 511 S-patch Box

Provides a convenient way to interconnect the S leads between up to eight Meridian DSP digital loudspeakers. It is required if your 568.2 system includes more than two DSP loudspeakers.

Meridian 513 Smart Link patch box

Connects a Smart Link SVGA lead to three phono leads, allowing the 568.2 to be connected to a Meridian 800 Reference DVD/CD Player.

Meridian 519 Demodulator

To take advantage of Dolby Digital on LaserDisc you need the Meridian 519 Demodulator, which converts the LaserDisc RF output to a bitstream which can be fed to the 568.2. The 519 Demodulator automatically senses the presence of a Dolby Digital signal, and can select the LaserDisc PCM or DTS digital audio output when no Dolby Digital signal is available.

Fan kit

A Fan kit is available for the 568.2 to provide additional ventilation if the unit is installed in an enclosed space.

The fan can be programmed using the Meridian Configuration program so that it either runs when the 568.2 is out of standby, or when the temperature rises above the recommended level.

Rack mount kit

The Meridian 500 Shelf is a tray produced by Middle Atlantic Products which will allow the 568.2, or any other 500 Series unit, to be fitted in a standard 19" rack. For more information please contact Middle Atlantic Products, Inc., Riverdale, NJ 07457, USA, (001) 973-839-1011, or their local distributor.

The digital surround processor provides an extremely comprehensive range of digital signal processing options for decoding both analogue and digital audio signals and processing them for multi-channel reproduction. These are referred to as DSP presets, and are designed to provide the best results with a range of different types of music and film material.

In addition to selecting built-in DSP presets, the digital surround processor allows you to create your own presets based on the standard ones. For example, you may want to add more delay to the rear speakers to create a more spacious sound. You can store your modified preset with a name of your choice, and recall it for use at a later date.

This section gives information about each of the built-in DSP presets, and gives recommendations for the best preset to choose for different types of material.

Discrete multi-channel sources

Some DVD-Audio discs provide up to six discrete channels, and when used with a suitable DVD-Audio player such as the Meridian 598 DVD Player, these channels can be connected separately to the 568.2 for subsequent processing.

Ambisonics B format

Ambisonics B format contains four independent channels of information to give a three-axis representation of the sound at the recording position. The signals are: mono sound pressure, left-right velocity component, front-back velocity component, and up-down velocity component.

Multi-channel digital sources

Several alternative multi-channel digital formats are currently available which encode up to six different channels onto a digital signal. Three alternatives are currently in use: Dolby Digital, DTS, and MPEG Surround. However, the 568.2 has been designed so that it can be upgraded by downloading a software update, to cater for new formats as they are introduced.

Dolby Digital

Dolby Digital, previously called AC-3, is the preferred sound format for DVD in NTSC territories, and is widely used on LaserDisc soundtracks. It is also the audio standard for US digital television.

DTS

DTS uses an audio compression technique to encode five channels of audio onto a digital signal. The DTS format is used to encode multi-channel film soundtracks on LaserDiscs and DVD-Video discs.

In addition, a high data-rate version of DTS can be used to compress five channels of CD-quality audio into the same space as two channels of unencoded sound, allowing a DTS music CD to provide over an hour of five-channel music.

MPEG Surround

MPEG Surround is the preferred audio format for DVD in PAL territories, and along with Dolby Digital is a contender as the standard for music and performance videos on DVD worldwide.

THX

THX versions of Dolby Digital, MPEG Surround, and DTS are provided to give a better match between the original soundtrack and typical domestic listening conditions.

THX Surround EX and Meridian EZ

THX Surround EX allows 5.1-channel film soundtracks to be encoded with an extra surround channel to give improved surround imaging with four surround speakers. Meridian EZ provides an alternative for THX Surround EX encoded material, and can also be used to give improved surround imaging with DTS ES encoded material.

Multi-channel sources encoded onto two channels

Several systems have been developed for encoding multi-channel sources onto a standard two-channel analogue signal so that they can be reproduced by a conventional stereo system, or decoded with special equipment for multi-channel reproduction. The 568.2 Digital Surround Processor provides decoding of the two most important of these, Ambisonic and Dolby Surround. Although the channel separation cannot be as good as with the digital multi-channel formats, the 568.2 produces excellent results with these formats.

Pro Logic II

Dolby Pro Logic II is a decoding algorithm designed for two-channel sources, whether or not they are encoded for Dolby

Surround. It re-creates 5.1 channel movie surround from the two-channel source, using improved decoding techniques that preserve the directness of the sound field, resulting in enhanced image stability compared with standard Pro Logic decoding.

Pro Logic

Pro Logic is Dolby's original processing mode for decoding Dolby Surround encoded video and LaserDisc soundtracks, and films on television. Such materials are usually identified by a Dolby Surround symbol on the packaging, or displayed on the film before the programme.

TV Logic

TV Logic provides user-adjustable steering, and is recommended for use with TV broadcasts that are not surround encoded, where Pro Logic may give reduced intelligibility.

PLII THX and THX Cinema

PLII THX and THX Cinema enhance Pro Logic II and Pro Logic to replicate the sound of a dubbing stage or theatre, whether or not the other equipment in your system is THX approved.

Ambisonics UHJ

Ambisonics UHJ decodes material specifically encoded for surround sound reproduction, using a two-channel stereo-compatible encoding. Recordings encoded in UHJ format are available on CD from several sources including Nimbus Records and York Ambisonics. Some radio broadcasts are also broadcast in Ambisonics format.

Conventional stereo sources

The digital surround processor can also accept a conventional two-channel source, such as music on compact disc or a video soundtrack, and by analysing the information in the signal separate the two-channel recording into multiple channels to give better reproduction and a more stable spatial image.

Four alternative DSP presets are provided for reproducing material originally designed for a conventional stereo pair of speakers, and which preset you choose largely depends on your own personal preferences.

All four presets use similar procedures to extract the surround component of the original recording, which is delivered to the rear surround speakers, and side surround speakers if present.

Music

Music uses a special technique developed by Meridian to divide the sound between the left, right, and centre speakers and give a wide, spacious sound. We recommend this option for large-scale music, such as orchestral and choral music.

Trifield

Trifield uses a different processing technique to give a stable, three-dimensional image, with the ability to adjust the width of the image. Because of its precision we recommend this option for solo, chamber, or vocal music.

Super Stereo

Super Stereo provides a form of Ambisonic decoding suitable for material that is not specially encoded. We recommend this option for multi-miked or multi-tracked music, such as rock music.

PLII Music

PLII Music uses the Pro Logic II DSP processing mode to decode music sources, and provides for user-adjustable steering to give an exciting sound with many types of music. We recommend this option for studio-produced music, ie material not produced using natural soundfield recording.

Special DSP presets

The digital surround processor also includes the following special DSP presets, for specific applications:

Mono

The Mono preset is designed for reproducing mono materials through a centre speaker, so that any high-frequency hiss or clicks are centrally localised. It is intended for mono recordings, and multi-language LaserDiscs and video soundtracks.

The Mono preset includes an Academy option, designed to correct for a high-frequency balance in some old black and white films, and a Party option, which plays the mono signal through all loudspeakers.

Stereo and Direct

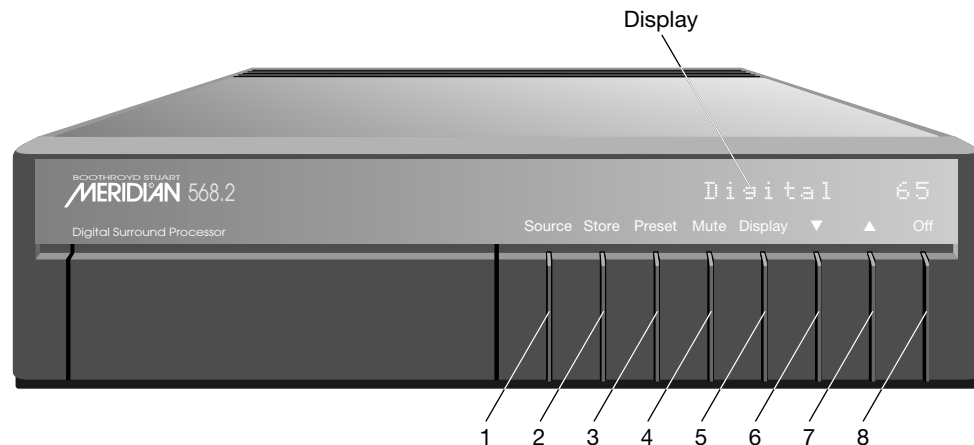
Stereo and Direct are provided for comparison with the other DSP presets. Direct uses just the main left and right speakers for traditional two-speaker stereo reproduction. Stereo, in addition, uses any subwoofers in the layout to enhance the bass or to protect small speakers.

Using the digital surround processor

This chapter provides a summary of the functions of the digital surround processor to identify the controls which you use to operate the unit.

It also provides step-by-step instructions for operating the digital surround processor, using either the front panel or the Meridian System Remote.

Front panel



1 Source

Selects the source.

2 Store

Changes the DSP preset assigned to a source.

3 Preset

Changes the preset.

4 Mute

5 Display

Changes the information displayed on the front panel.

6 ▼ Decrease

Decreases the volume.

7 ▲ Increase

Increases the volume.

8 Off

Switches to standby.

Meridian System Remote



- 1 Source keys**
Select a source.
- 2 Control keys**
Control the source functions.
- 3 Off**
Switches to standby.
- 4 Function**
Accesses additional functions.
- 5 Number keys**
For entering track numbers and radio presets.
- 6 Top Menu/#**
For controlling a DVD Player.
- 7 Menu keys**
For customising the 568.2.
- 8 Preset**
Changes the DSP preset.
- 9 Display**
Changes the front panel display.
- 10 Volume keys/Mute**
Change the volume.

Quick guide to operating the 568.2 with the remote

| <i>Action</i> | <i>568.2 as controller</i> | <i>DSP speaker as controller</i> |
|---|----------------------------|-------------------------------------|
| Source selection | CD, RADIO etc. | CD, RADIO etc. |
| Go to standby | Off | Off |
| Volume | Volume ▲ ▼ | Volume ▲ ▼ |
| Mute | Mute | Mute |
| Change display | Display | Not available |
| Change DSP preset | Preset | Preset |
| Move to next or previous menu | Menu ◀ ▶ | Function + Menu ◀ ▶ |
| Change the value of this menu | Menu ▲ ▼ | Function + Menu ▲ ▼ |
| Store settings as a new DSP preset or over an existing one | Store | Function + Store |
| Associate the current DSP preset with the current source | Function + Store | Function + Mute |
| Delete an unwanted user preset | Clear (held down) | Function + Clear (held down) |

Selecting a source

When not playing, the digital surround processor should be left in the standby state. This uses a negligible amount of electricity, but ensures that the components of the digital surround processor operate at maximum efficiency from the moment you start.

If you are not going to use the digital surround processor for several days you should switch the unit completely off at the back panel, and disconnect it from the AC power supply.

To switch on from standby

- Press **Source** (front panel), or select a source by pressing the appropriate source key on the remote; eg **DVD**.

If the digital surround processor is part of a Meridian system it will automatically switch on any other unit in the system, such as the CD player and Meridian DSP loudspeakers.

To select a source

- Press **Source** (front panel) until the display shows the source you require.

For example:

DVD

Alternatively press the appropriate source key on the remote; eg **DVD**.

After a short delay the display shows the currently selected DSP preset and volume setting.

For example:

Digital 56

The digital surround processor mutes the sound while you change source.

By default the following 12 sources are available: CD, Radio, LP, TV, Tape 1, Tape 2, CDR, Cable, DVD, VCR1, VCR2, and LDisc.

The audio input and DSP preset associated with each source can be configured using the Meridian Configuration program; for more information refer to *Configuring the digital surround processor using a computer*, page 81.

To switch to standby

- Press **Off** on the front panel or the remote.

The display will show:



If you have other Meridian 500 Series equipment or Meridian DSP loudspeakers connected to the digital surround processor these units will also switch to standby.

Adjusting the volume

The digital surround processor adjusts the volume in precise steps of 1dB, where 9dB is equivalent to doubling the loudness. The current volume setting is displayed in dB on the front panel display, and can be varied in the range 1 to 99dB.

When you first connect power to the digital surround processor the volume is set to 65, which is similar to the midway position of the rotary volume control on a conventional preamplifier.

For normal to high-level listening you should expect to use volume levels in the range 60 to 90.

To change the volume

- Press ▲ or ▼ (front panel), or the red ▲ or ▼ keys on the remote.

As you adjust the volume setting the display will show the current volume level.

For example:



To mute the sound

- Press **Mute**.

The display will show:



To restore the sound

- Press **Mute** again.

Alternatively, the sound will be restored if you adjust the volume.

Changing the DSP preset

Each source has a set of DSP presets associated with it, one for each of the alternative audio formats: two-channel (PCM), Dolby Digital, DTS, MPEG, and discrete Multi-channel.

When you choose a source an appropriate DSP preset is selected for the incoming audio format.

For example, if you have selected the CD source and are playing a conventional CD, the Trifield DSP preset will initially be selected. You may then wish to choose a different DSP preset, such as Music or Ambisonic.

You can also change the default DSP preset associated with the source; see *Changing the DSP preset for a source*, page 33.

The optional multi-channel input card allows you to set up one source as the enhanced source; see *MHR Smart Link*, page 2, for a full description of how it works with DSP presets.

To change the DSP preset

- Press **Preset** (front panel or remote) to step between the different DSP presets.

The display shows the current preset; for example:



You will be able to choose any of the predefined DSP presets, or any user-defined presets you have stored.

The following table gives the sequence of DSP presets for each audio format, followed where appropriate by the abbreviated name used on the display:

| <i>Audio format</i> | <i>Presets</i> |
|---------------------|---|
| Two-channel (PCM) | Direct, Music, Trifield, Ambisonics (Ambisonic), Super Stereo (Super), Stereo, Music Logic (MuLogic), Pro Logic (ProLogic), THX Cinema (THX), Mono, TV Logic, PLII Music (PL2Music), PLII Movie (PL2Movie), PLII THX (PL2 THX). |
| Multi-channel | Ambisonics (Ambisonic), Discrete, Cinema. |
| Dolby Digital | Dolby Digital (Digital), Dolby Digital THX (Dig THX) |

| <i>Audio format</i> | <i>Presets</i> |
|---------------------|--|
| DTS | DTS, DTS THX, DTS Music (DTS Mus) |
| MPEG | MPEG, MPEG THX, MPEG Music (MPEG Mus) |

In each case these will be followed by any user-defined presets you have stored for the appropriate audio format.

Changing the display

The digital surround processor displays information about the current settings on the 12-character front panel display. In addition, it can display the same information superimposed on a video image. For more information about setting up the on-screen display refer to *Connecting video*, page 59.

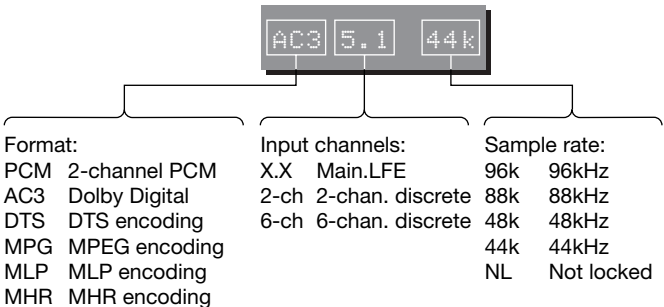
To change the display

- Press **Display**.

Each press will step between the following options:

| Display option | Example |
|--|--------------|
| DSP preset and volume | Music 65 |
| DSP preset and THX gain | Music -22 |
| Source and volume | Radio 65 |
| Audio stream, number of channels, and sampling rate. | PCM 6-ch 44k |
| Blank | |

The audio stream display option shows the following three pieces of information about the audio stream:



In addition, the following symbols on the front panel display indicate which of the DSP processing modes are operating:

| Symbol | What it means |
|--------|---|
| | Dolby processing is operating, or the source material is Dolby Digital. |
| | THX processing is operating. |
| | Source material is DTS. |
| MPEG | Source material is MPEG. |

Defining your own presets

In addition to being able to change the source, volume, and DSP preset, the digital surround processor provides a sophisticated range of more advanced adjustments for each DSP preset, to allow you to change the characteristics of the sound to the settings you want.

This chapter explains how to change these advanced parameters, and how to store them permanently so they are available whenever you want to use them.

For information about the parameters specific to individual presets see *DSP presets*, page 37.

Locking and unlocking the menus

To simplify the normal operation of the digital surround processor, and to protect the settings from accidental changes, you can lock the menus so that the parameters cannot be accessed.

To display or change the DSP presets, or to define your own presets, you first need to unlock the digital surround processor menus.

To lock the menus

- Press **Off** to put the 568.2 in standby.

The display shows:



- Press and hold down **Preset** for a few seconds until the display shows:



To unlock the menus

- Repeat the above sequence so that the display shows:



Changing the DSP parameters

Each DSP preset provides a series of parameters that you can vary to customise its behaviour to your specific requirements. For example, most presets provide **Balance** and **Depth** parameters which alter the characteristics of the sound.

For each of the built-in DSP presets these parameters are set to standard values, designed to give the best sound in typical listening conditions and with most source materials. Each time you select a different DSP preset the parameters are reset to these standard values, even if you have previously altered them.

You can save the changes you have made to one or more DSP parameters in place of the original DSP preset. Alternatively you can create a new user-defined DSP preset, with a name of your choice. User-defined presets appear in the list of DSP presets after the built-in ones. See *Defining your own presets*, page 23.

Standard parameters

All DSP presets (except Mono and Direct) provide the standard parameters shown on the next page.

Individual DSP presets provide additional parameters, to allow you to adjust specific features provided by that preset. For full details refer to *DSP presets*, page 37.

To change a DSP parameter

- Make sure the menus are unlocked; see *To unlock the menus* opposite.
- Press ► or ◀ (remote) until the display shows the name of the parameter you want to change.



For example:

- Press ▲ or ▼ (remote) to change the value of the parameter.

As you change the value you will be able to hear the effect on the sound, and the display will show the current value.

After a short delay the display will revert to the normal display of DSP preset and volume.

Using a Meridian DVD player

If your system includes a Meridian DVD player you should set the **Meridian DVD present** setup option; see *Changing the setup options*, page 101. The menu keys on the remote will then operate the DVD player menus, and you can change 568.2 DSP parameters using **Function ►**, **Function ◀**, **Function ▲**, and **Function ▼**.

Standard parameters

| <i>Parameter</i> | <i>Range</i> | <i>Default</i> | <i>What it changes</i> |
|------------------|---------------------|----------------|--|
| Treble * † | -10dB to +10dB | +0dB | The slope of the frequency response. |
| Bass * † | -5dB to +5dB | +0dB | The bass response. |
| Phase * † | + or - | + | The phase of all loudspeakers. |
| Balance | <10 to 10> | <0> | The L-R balance. |
| Centre | -3.0dB to +3.0dB | +0.0dB | The level of the centre. |
| Depth | -2.5ms to +5.0ms | +0.0 | The delay of the centre. |
| Rear | -30dB to +10dB | +0dB | The level of the rears. |
| Sides | -30dB to +10dB | +0dB | The level of the sides. |
| R Delay ‡ | 0ms to 30ms | 15.0ms | The delay of the rears. |
| S Delay ‡ | 0ms to 30ms | 15.0ms | The delay of the sides. |
| LipSync | 0ms to 30ms | 0ms | The sync. delay. |
| OSD * | Off, Low, Med, High | Low | The position of the on-screen display. |

* These parameters apply to all DSP presets.

† These parameters appear on the speakers if you are using DSP loudspeakers.

‡ These parameters have a range of 0ms to 15ms for 5.1 Movie presets and a range of 15ms to 30ms for Logic presets.

Changing treble, bass, or phase

The digital surround processor provides sophisticated treble and bass controls, to allow you to adjust the broad balance of the system to correct for the acoustics of your listening room, or for a misbalanced recording. The controls are more subtle than conventional tone controls, and take advantage of digital signal processing techniques to provide a more natural adjustment of the frequency response. You can also change the absolute phase of the signal, to compensate for recordings which are out of phase.

In each case all the outputs of the digital surround processor are given the same adjustment, to ensure a correct surround effect.

If you have a Meridian DSP loudspeaker the bass and treble controls appear on the 568.2 but adjustment is performed in the speaker; for more information see the relevant loudspeaker guide.

To change the treble

- Press ► or ◀ (remote) until the display shows the current treble.



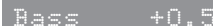
For example:

- Press ▲ or ▼ (remote) to change the treble.

The treble control tilts the frequency of the response over the entire frequency range to make the sound brighter or dimmer. It can be adjusted between $\pm 10\text{dB}$ in 0.5dB steps. Normally settings between $+1.0$ and -2.0 will give the most natural results.

To change the bass

- Press ► or ◀ (remote) until the display shows the current bass setting.



For example:

The bass control allows you to adjust the bass response in the room by $\pm 5\text{dB}$ in 0.5dB steps. Normally settings between $+3.0$ and -2.0 will give the most natural results.

- Press ▲ or ▼ (remote) to change the bass.

To change the absolute phase

- Press ► or ◀ (remote) until the display shows the phase; for example:



- Press ▲ or ▼ (remote) to change the phase.

Changing the listening position

A conventional stereo system provides a single balance control, which changes the relative loudness of the two speakers. The 568.2 Digital Surround Processor provides a more sophisticated adjustment which corresponds to moving the listening position to the left or right.

You can also change the level of the rear or side loudspeakers relative to the main speakers.

To move the listening position to the left or right

- Press ► or ◀ (remote) until the display shows the current balance.

Balance <0>

For example:

- Press ▲ or ▼ (remote) to move the listening position.

The display shows the direction and position of the listening position.

Balance <8

For example:


The arrow indicates the direction, and the number indicates the position where 0 is central, 8 is in line with the corresponding main speaker, and 10 is fully to one side.

Note: This adjustment is not available for the Mono preset.

To change the relative level of the rear or side loudspeakers

- Press ► or ◀ (remote) until the display shows the speaker(s) you want to adjust.

For example:




Rear +0

- Press ▲ or ▼ (remote) to change the relative level of the speakers, in dB.

You can change the relative loudness of the rear loudspeakers from -30dB (about one-eighth of the loudness) to +10dB (about double the loudness).

For example, to double the loudness of the loudspeakers:

- Adjust their level until the display shows:



Rear +10

Note: This adjustment is not available for the Direct, Stereo, or Mono presets.

If you have side speakers an additional Sides parameter allows you to adjust the relative loudness of the side speakers.

Changing the integration of the centre

If you have a centre loudspeaker you can adjust its relative loudness, to provide the best integration of the centre with the main left and right speakers.

You can also adjust the relative delay of the centre speaker to give the best perspective between the three front speakers.

Note: These adjustments are not available for the Direct, Stereo, or Mono presets.

To change the relative level of the centre speaker

- Press ► or ◀ (remote) until the display shows the current centre level.



For example:

- Press ▲ or ▼ (remote) to change the relative level of the centre speaker.

You can change the relative level by $\pm 3\text{dB}$ in 0.5dB steps.

To change the relative delay of the centre speaker

- Press ► or ◀ (remote) until the display shows the current centre depth.



For example:

- Press ▲ or ▼ (remote) to change the relative depth of the centre speaker.

You can change the depth between -2.5ms , which corresponds to moving the centre speaker 0.75m ($2\frac{1}{2}$ feet) nearer to the listening position, and $+5\text{ms}$, which corresponds to moving it 1.5m (5 feet) further away from the listening position.

Increasing the depth makes the sound more open. Decreasing it makes the sound more focused.

Changing the spaciousness of the sound

You can adjust the spaciousness of the sound by altering the delay on the rear and side channels.

Note: These adjustments are not available for the Direct, Stereo, or Mono presets.

To change the relative delay of the rear or side speakers

- Press ► or ◀ (remote) until the display shows the speaker(s) you want to adjust.

For example:



R Delay 15.0

- Press ▲ or ▼ (remote) to change the relative delay of the speakers.

The range of possible values depends on the preset. With the music presets (Music, Trifield, and Ambisonic) you can change the rear delay between 0ms and 30ms, which is equivalent to moving the rear speakers 9m (30 feet) away.

The 5.1 Movie presets allow you to vary the delay between 0ms and 15ms, and the Logic presets allow you to vary it between 15ms and 30ms.

If you have side speakers an additional S Delay option allows you to adjust the delay on the side speakers between 15ms and 30ms.

Note: For best results you should never set the S Delay to be less than the R Delay.

Changing the lip sync and on-screen display

To adjust the lip sync

The LipSync parameter is a unique feature of the digital surround processor which allows you to adjust the delay between the sound and the video image by up to one video frame.

Most movies are mixed for a viewing distance of 9m (30 feet), and when viewed from 3.6m (12 feet) or less the sound arrives too early, giving a disconcerting effect. Using the LipSync parameter you can add an overall delay to the sound to accommodate your closer home viewing distance.

Many TV broadcasts delay the picture by half a frame, and can benefit from a LipSync setting of 12ms.

- Press ► or ◀ (remote) until the display shows:



- Press ▲ or ▼ (remote) to change the delay in milliseconds.

You can adjust the delay between 0 and 30ms, where 30ms corresponds to sitting 9m (30 feet) further away from the screen.

To change the position of the on-screen display

For each DSP preset you can specify the position of the on-screen display (OSD), or blank the on-screen display altogether.

For example, you may prefer to have the on-screen display at the top of the screen when watching videos, but at the bottom of the screen when listening to music.

- Press ► or ◀ (remote) until the display shows the current OSD position.



For example:

- Press ▲ or ▼ (remote) to change the position.

You can choose between Off, Low, Med, or High.

Changing the DSP preset for a source

Each source has an appropriate DSP preset associated with it for each music format. For example, for a standard stereo (PCM) signal the CD source uses Trifield and the TV source uses TV Logic.

This section explains how to change the DSP preset associated with any source.

To change the DSP preset for a source

- Make sure the menus are unlocked; see *To unlock the menus*, page 24.
- Select the source you want to change, by pressing the **Source** key on the front panel or the appropriate source key on the remote; eg **CD**.
- If necessary, select a signal in the appropriate format. For example, to change the DSP preset used for DTS compact discs, play a DTS CD.

- Press **Preset** (front panel or remote) to select the DSP preset you want to associate with the source.

For example:



Trifield

- Press **Store** (front panel) to save the new association.

The display shows the source and preset you have stored; for example:



CD=Trifield

After a short delay the display will revert to the normal display of DSP preset and volume.

Defining your own presets

The 568.2 Digital Surround Processor allows you to modify one of the built-in presets, and save it for future use.

You can either save the changes to the built-in preset, or you can create up to 10 presets of your own, with names of your choice, so you can use them alongside the built-in presets.

Note: If you have selected **Meridian DVD present** in the **Setup** options use **Function Store** instead of **Store**, and **Function Clear** instead of **Clear** in the following procedure.

To save the preset settings

- Make sure the menus are unlocked; see *To unlock the menus*, page 24.
- If necessary, select a signal in the appropriate format. For example, to change the DSP preset used for DTS compact discs, play a DTS CD.
- Press **Preset** (front panel or remote) to select the DSP preset you want to modify and then associate with the source.

For example:



- Change the preset parameters to the values you want to store; see *To change a DSP parameter*, page 25.
- Hold down **Store** (front panel), or press **Store** (remote) until the display shows the next available user-defined preset.

For example:



If you want to overwrite an existing user-defined preset:

- Press **▲** or **▼** (front panel or remote) to select the preset you want to overwrite.

For example:



Alternatively if you started with a built-in preset you can choose that and overwrite it.

For example:



- Press **Store** (front panel or remote).

The settings have been stored in the new or existing preset you selected.

If you are defining a user preset you can now edit the name of the preset if you wish.

A flashing cursor shows the letter you are editing:



Sto. User 1

If you have an on-screen display it shows:



Sto. User 1

Create a label for the preset
you have just stored.

MENU ↑↓ alters this character
MENU ↔ for another character
CLEAR gives a space

STORE stores the label

- Use **Source** (front panel) or ► and ◀ (remote) to select the character position you want to edit.
- Press ▲ or ▼ (front panel or remote) to change the character.

Each press steps through the sequence A to Z, a to z, 0 to 9, full stop, and blank. You can also select a blank directly by pressing **Mute** (front panel) or **Clear** (remote).

For example, you could change the name to:



Sto. La Scala

Alternatively, you can cancel editing the name by pressing **Display** (front panel).

- When you have entered the name you want to use press **Store** (front panel or remote).

The display shows the source and the new preset you have defined.

For example:



CD=La Scala

To clear a user-defined preset

- Make sure the menus are unlocked; see *To unlock the menus*, page 24.
- Press **Preset** (front panel or remote) to select the DSP preset you want to clear.

For example:



User 2

- Press and hold down **Clear** (remote) for several seconds.

The display shows:



Preset Clear

If you clear a preset that was saved over a built-in preset, the original settings for that preset are restored.

DSP presets

This chapter gives technical information about each of the DSP presets built in to the digital surround processor.

It explains the processing performed by each DSP preset, and gives details of the types of material you should use with each preset.

It also gives details of the special DSP parameters available for each preset.

The DSP presets are divided into three categories: Logic, Music, and 5.1 Movie. You can set up the 568.2 Digital Surround Processor to use a different subwoofer configuration for each category of DSP preset. In addition, with the multi-channel input card, one source can automatically select one of four DSP presets based on the audio content, together with the appropriate subwoofer configuration.

Logic DSP presets

The digital surround processor provides six DSP presets specifically designed for reproducing stereo film soundtracks.

PLII Movie and PLII THX use the new Dolby Pro Logic II DSP processing mode, and are the recommended choices for Dolby Surround encoded material. Most films, and many TV programmes and series, are encoded using Dolby Surround, and it is increasingly being used to encode music.

Pro Logic, THX Cinema, and TV Logic are based on the original Dolby Pro Logic DSP processing mode, and are also designed for Dolby Surround encoded material.

The remaining Logic preset, Mono is designed for films with mono soundtracks.

Pro Logic II

Dolby Pro Logic II is a new decoding mode designed for any two-channel source, whether or not it is encoded for Dolby Surround. It can also be used for two-channel Dolby Digital sources

It re-creates 5.1-channel movie surround from the two-channel source, using improved decoding techniques that preserve the

directness of the sound field, resulting in enhanced image stability compared with standard Pro Logic decoding.

Meridian's implementation of Pro Logic II was the first in the world to receive Dolby approval, and uses proprietary code based on 48-bit precision to give outstanding clarity.

PLII THX

The PLII THX DSP preset provides Pro Logic II decoding, followed by additional signal processing refinements developed by Lucasfilm Ltd. These are designed to provide a better match between the sound of the movie theatre and a home cinema in the following ways:

- The front channels are re-equalised to correct for the higher treble often found in film soundtracks.
- The surround channels are frequency-corrected using a timbre-matching process so that sounds moving front-back are more convincing.
- The surround channels are decorrelated to break up any artificial localisation of the rear signals due to the speakers being nearby. In the 568.2 Digital Surround Processor this decorrelation is optimised to give spacious surround sound that has no artefacts disturbing to music or other sensitive sounds in the mix.

- The time synchronisation between loudspeakers is adjusted to compensate for the fact that the speakers in a home system tend to be a lot closer to the listener than in a movie theatre.

THX can also be used with Pro Logic, or the 5.1 Movie DSP presets; see *THX Cinema*, page 40, and *Dolby Digital THX, DTS THX, and MPEG THX*, page 47.

PLII Movie and PLII THX preset parameters

| <i>Parameter</i> | <i>Options</i> | <i>What it changes</i> |
|------------------|---|--|
| Steered All | Steered Rear, Steered Side, Steered All | Which of the four surround channels are generated by steering. |
| R Delay | 10ms to 25ms | The delay of the rears. |
| S Delay | 10ms to 25ms | The delay of the sides. |
| Pro Logic | Off, On | On selects the original Pro Logic decoding. |

Pro Logic

Dolby Surround is an encoding system based on a phase-amplitude matrix whose output can be decoded by a very simple passive matrix. Such a decoder gives quite a poor separation.

The Pro Logic system uses psychoacoustically optimised directional enhancement to increase the separation in both left-right and front-back directions. It does this by continuously calculating the position and degree of the currently dominant sound. This sound is then steered to a greater or lesser extent to that position in the arriving sound. This technique is very successful for cinema and other dramatic programmes.

Further refinements in the Pro Logic decoder include the filtering and delay of the rear surround signal to reduce any tendency for the surround signals to divert attention or become dominant. The Pro Logic decoder also uses a modified digital Dolby noise-reduction process in the surround signal. Since Dolby Surround material is encoded with this in mind the noise-reduction is permanently operating in this mode.

THX Cinema

The THX Cinema preset provides Pro Logic decoding, followed by the THX refinements, as for PLII THX; see *PLII THX*, page 38.

Pro Logic and THX Cinema DSP preset parameters

| <i>Parameter</i> | <i>Options</i> | <i>What it changes</i> |
|------------------|--|--|
| Mono Rear | Steered Rear, Steered Side, Steered All, Mono All, Mono Rear, Mono Side | Which of the surround channels are generated by steering. Mono gives conventional Pro Logic surrounds. Steered gives stereo surrounds. |

TV Logic

TV Logic is a logic preset, with user-adjustable steering, that can give higher intelligibility and a more appropriate spatial presentation for studio-based TV material.

TV Logic DSP preset parameters

| <i>Parameter</i> | <i>Options</i> | <i>What it changes</i> |
|------------------|---|---|
| Roll | Off, Low, Med, High | The degree of left–right steering. |
| Yaw | Off, Low, Med, High | The degree of front–rear steering. |
| Mono Rear | Steered Rear, Steered Side, Steered All, Mono All, Mono Rear, Mono Side | Which of the surround channels are generated by steering. |

Mono

In the Mono DSP preset you can choose to listen to:

- Only one of two input channels, for use when different languages or material are carried on each channel.
- A combined version of the two input channels, for use if the material was originally mono and has been conveyed on a two-channel carrier.

If **Party?** is set to **No**, the combined or selected signal is played only through the centre speaker, or the left and right speakers if there is no centre, to centrally localise high-frequency hiss and clicks.

Note: If **Party?** is set to **Yes**, full range bass is played through any speakers that are not supplemented by a subwoofer, and this may damage small speakers at high volume levels.

Mono DSP preset parameters

| <i>Parameter</i> | <i>Options</i> | <i>What it changes</i> |
|------------------|---|--|
| Input | Auto L+R, Input L, Input R, Input L+R | The channel selected. |
| Academy | Off or On | Select On to include an equalisation (recommended by Lucasfilm Ltd) to correct for a high-frequency balance in some old mono films. Ignored if Party? is set to Yes. |
| Party? | No or Yes | Select Yes to play the mono signal through all speakers, including subs. |

Music DSP presets

The digital surround processor provides eight alternative music DSP presets designed for the reproduction of well-recorded material, originally intended for replay over a traditional stereo pair of loudspeakers. In addition, it provides DSP presets for reproducing music in the digitally encoded DTS and MPEG formats:

| <i>Audio format</i> | <i>Presets</i> |
|---------------------------|--|
| Conventional stereo (PCM) | Direct, Music, Trifield, Ambisonics, Super Stereo, Stereo, Music Logic, PLII Music |
| DTS | DTS Music |
| MPEG | MPEG Music |

Music

The Music DSP preset extracts the mono and surround components of the original recording. These components provide an alternative representation of the original sound, and this representation is sometimes used for recording systems or in broadcasts such as FM radio.

The mono element is equalised using a proprietary Meridian technique to match the tone colour of the centre speaker, and to compensate for the fact that the frequency response of human

hearing changes with direction.

The Music DSP preset is recommended for recordings made with spaced omnidirectional microphones, or using a mono-surround technique.

Trifield

As for the Music DSP preset, the Trifield preset extracts the mono and surround components of the original recording. It then calculates the signals for the front left, centre, and right speakers, using the phase and amplitude differences between the three front channels, to redistribute the sounds on a frequency-dependent basis. This gives a significant improvement over traditional stereo, which converts the differences between the microphone signals into amplitude differences in the speaker signals. This version of the Trifield algorithm is virtually impossible to implement without digital signal processing.

Trifield is recommended for well-made recordings and stereo television broadcasts that are not Dolby Surround encoded. An advantage over the Music DSP preset is that the front stereo image is more focused, and the width of the image can be adjusted.

Music and Trifield DSP preset parameters

| <i>Parameter</i> | <i>Options</i> | <i>What it changes</i> |
|------------------|---|--|
| HS Out? * | Y or N | High-rate audio. |
| Centre | Flat, EQ1 to 3 | The timbre of the centre loudspeaker. |
| Width † | 0 to 1.5 | The width of the image. |
| Surr. Rear | Surr. Rear, Surr. Side, Surr. All | Switches the surround signal between the side and rear speakers. |
| R Filter | Off, 1kHz, 3kHz, 7kHz | The cutoff of high frequencies from the rear surrounds. |
| S Filter | Off, 1kHz, 3kHz, 7kHz | The cutoff of high frequencies from the side surrounds. |

* Y gives high-rate audio, upsampled if necessary. N gives standard-rate audio, downsampled if necessary.

† Trifield only.

Ambisonics

The Ambisonics DSP preset is designed for replaying material encoded in UHJ format, the two-channel stereo-compatible encoding found on Ambisonically recorded discs and broadcasts. This material is specifically encoded for surround reproduction and can give breathtakingly realistic sound when replayed using the digital surround processor.

Ambisonic surround sound is quite unlike conventional stereo. A special microphone technique picks up the sound of the original performance in all three dimensions, allowing an archive to be made which describes the sound field exactly at that position. The microphone signals are then encoded using a phase-amplitude matrix to allow the effect to be conveyed on two-channel carriers (like FM radio, LP, or CD).

The digital surround processor uses accurately matched, frequency-dependent, phase-amplitude matrices to decode the signal and construct the signals for each speaker feed.

The fundamental difference between Ambisonic surround sound and conventional stereo is that the signals from all the speakers combine to produce a coherent sound field at the listening position, giving the illusion that you are sitting inside the

recording space whether you are at the exact central seat or well off to one side.

Of all the signal-processing options, Ambisonics is the one that requires the greatest attention to speaker choice and positioning.

Super Stereo

Super Stereo synthesises a signal from a conventional stereo recording or broadcast so that it can be decoded using the Ambisonic decoder. The result is especially effective for two particular types of recordings:

- Those using true coincident microphone techniques.
- Multi-tracked or multi-miked recordings.

Ambisonics and Super Stereo DSP preset parameters

| <i>Parameter</i> | <i>Options</i> | <i>What it changes</i> |
|------------------|------------------------|--|
| Width * | 0 to 1 | The width of the image. |
| Row † | A, C, E, G, I, K, M | The seating position; the letters are like rows in a hall. |
| 5 Channels | 7, 6, 5, 4 | The number of speakers. |
| R Filter | Off, 3kHz, 7kHz, 9kHz | The cutoff of high frequencies from the rear surrounds. |
| S Filter | Off, 3kHz, 7kHz, 9kHz | The cutoff of high frequencies from the side surrounds. |

* Super Stereo only.

† Ambisonics only.

Music Logic

Music Logic is a music DSP preset with user-adjustable steering, designed to provide an exciting experience with many types of studio-produced music.

Music Logic DSP preset parameters

| <i>Parameter</i> | <i>Options</i> | <i>What it changes</i> |
|------------------|---|---|
| Roll | Off, Low, Med, High | The degree of left-right steering. |
| Yaw | Off, Low, Med, High | The degree of front-rear steering. |
| Mono Rear | Steered Rear, Steered Side, Steered All, Mono All, Mono Rear, Mono Side | Which of the surround channels are generated by steering. |

PLII Music

The PLII Music preset is designed to use the Pro Logic II DSP processing mode to decode music sources. It provides additional **Width**, **Dimension**, and **Panorama** preset parameters to allow you to adjust the sound field.

PLII Music preset parameters

| <i>Parameter</i> | <i>Options</i> | <i>What it changes</i> |
|------------------|---|--|
| Steered All | Steered Rear, Steered Side, All Steered | Which of the four surround channels are generated by steering. |
| R Delay | 10ms to 15ms | The delay of the rears. |
| S Delay | 10ms to 15ms | The delay of the sides. |
| Width | 0 to 7 | The centre spread, where 0 is full centre and 7 is full left and right. |
| Dimension | -3 to +3 | The spatial soundfield, where -3 puts the balance to the rear of the room and +3 puts it to the front. |
| Panorama | No, Yes | Extends the front stereo image to include the surround speakers, providing a wrap-around effect. |

DTS Music

DTS Music is a special version of the DTS preset designed with a lower LFE level of -10dB to match the bass levels applied to DTS music CDs.

MPEG Music

MPEG Music is a special version of the MPEG preset designed for listening to MPEG encoded music CDs.

For details of the DTS Music and MPEG Music DSP preset parameters see *5.1 Movie DSP preset parameters*, page 48.

Stereo and Direct

The Stereo preset passes the left and right input signals directly to the left and right main speakers. Any mono or front left and right subwoofers continue to be used.

With the Direct preset only the left and right main speakers are used.

Stereo and Direct DSP preset parameters

| <i>Parameter</i> | <i>Options</i> | <i>What it changes</i> |
|------------------|----------------|------------------------|
| HS Out? * | Y or N | High-rate audio. |

* Y gives high-rate audio upsampled if necessary. N gives standard-rate audio, downsampled if necessary.

5.1 Movie DSP presets

The discrete digital formats can encode up to eight separate channels, which can be decoded to provide separate signals to the eight speakers in a surround configuration.

Dolby Digital

Dolby Digital is a totally digital format capable of encoding five full frequency-range channels, together with one restricted frequency-range channel used for extreme bass.

The digital surround processor's Dolby Digital preset is capable of decoding the range of different options provided by Dolby Digital. In addition, it provides bass power management to protect systems from the potentially high bass levels that Dolby Digital can produce.

DTS

DTS is an alternative compressed sound format that can be used to deliver multi-channel music from a CD or surround sound from a DVD or LaserDisc to accompany a movie. CDs, DVDs, and LaserDiscs are currently available which provide a DTS signal in place of the normal digital audio.

MPEG

MPEG surround is the preferred audio format for DVD in PAL territories.

Dolby Digital THX, DTS THX, and MPEG THX

As with the standard THX Cinema DSP preset, Dolby Digital THX, DTS THX, and MPEG THX re-equalise the signals to suit domestic listening conditions, and applies frequency-response correction and decorrelation to the surround channels to make the surround sound more realistic, and can be used whether or not your other equipment is THX approved.

THX Surround EX and Meridian EZ

THX Surround EX and Meridian EZ are DSP processing modes that are designed to give improved surround imaging with four surround speakers.

Both THX Surround EX and Meridian EZ can be used with THX Surround EX encoded material. In addition, Meridian EZ can be used to give improved surround imaging with DTS ES encoded material.

THX Surround EX and Meridian EZ can also be used with non-encoded material, and often give a good effect depending on the soundtrack.

5.1 Movie DSP preset parameters

| <i>Parameter</i> | <i>Options</i> | <i>What it changes</i> |
|------------------|--------------------------------------|---|
| Surr. Rear | Surr. Rear Surr.Side Surr. All | Switches the surround signal between the side and rear speakers. |
| LFE | 0 to -30dB | The relative level of the LFE bass channel. |
| Max SPL * | 105 to 120dB SPL | The peak-level limit for an LFE subwoofer. |
| Limit * | -15 to -5dBFS | The peak-level limit of the total bass signal added to the main speakers. |
| Compress † | Off, Low, Med, Top, Max, Mix | The dynamic range control; see opposite. |

* See *Using peak-level limiting*, page 49.

† Dolby Digital and Dolby Digital THX only.

Using dynamic range control

Because Dolby Digital is a digital format it allows dynamic range control without the distortion involved in analogue methods. The **Compress** parameter can be set to one of the following options:

| <i>Option</i> | <i>Description</i> |
|---------------|--|
| Compress off | No compression. |
| Quiet boost | Moderate bottom-up compression. This raises quiet sounds above the background noise, which is ideal for demonstration and quiet listening. |
| Compress med | Moderate amounts of both bottom-up and top-down compression. |
| Loud cut | A moderate amount of top-down compression. This reduces loud sounds. |
| Compress max | Full bottom-up and top-down compression. Quiet sounds are raised to be audible and loud passages are minimised to avoid disturbance, which is useful for late-night listening. |
| Compress mix | Bypasses dialogue normalisation and references the sound pressure level in the studio where the material was mixed. |

Dialog normalisation display

Dolby Digital audio streams include Dialog Normalisation and Mix levels, to specify the recommended listening level of the soundtrack.

The digital surround processor uses the Dialog Normalisation level to adjust the volume level so that the soundtrack is reproduced at the correct absolute level, assuming the system is calibrated to produce 75dB SPL at volume 87.

The Mix level is an alternative level which you can select by setting the Compression parameter to Mix.

The Dialog Normalisation or Mix level is shown in a separate display option for Dolby Digital sources:

For example:



DialNorm -31

Or:



Mixlevel -27

Using peak-level limiting

The **Max SPL** or **Limit** parameters allow you to set up peak-level limiting for bass signals, and the setting applies to all the discrete digital DSP presets.

If your loudspeaker layout includes one or more subwoofers the parameter is named **Max SPL**, and it sets the peak-level limit for the LFE channel.

If your loudspeaker layout contains no subwoofer the parameter is named **Limit**, and it sets the peak-level limit of the bass signal added to the main loudspeakers. For loudspeaker layouts using Meridian DSP loudspeakers as the main left and right, or centre speakers, the **Limit** value is fixed at -11dBFS and the parameter does not appear in the menu.

THX Surround EX

THX Surround EX allows 5.1-channel film soundtracks to be encoded with an extra surround channel during the mixing process. EX post-processing can be used with THX when decoding a 5.1-channel Dolby Digital signal. The decoded surround signals are matrixed to the four surround speakers giving more detailed imaging behind the listener and bringing more depth, ambience, and localisation than before.

EX post-processing is available with Digital THX preset:

| <i>Parameter</i> | <i>Options</i> | <i>What it changes</i> |
|------------------|----------------|--|
| THX-EX | On, Off, Auto | Switches on or off the EX post-processing. Auto automatically detects bitstreams marked as EX encoded *. |

* Some EX-encoded discs may not be marked as EX encoded, in which case select **On** rather than **Auto**.

Meridian EZ

Meridian have used their experience in developing algorithms for multiple surround speakers to create a proprietary DSP processing mode, called Meridian EZ. This is designed to give an exciting spacious surround enhancement for non-THX enhanced 5.1 sources, such as Dolby Digital and DTS.

EZ post-processing is available with the following DSP presets: Digital, DTS, DTS Music, MPEG, and MPEG Music.

| <i>Parameter</i> | <i>Options</i> | <i>What it changes</i> |
|------------------|-----------------|---|
| EZ | Off, On, Auto * | Switches Meridian EZ post-processing on or off. |

* **Auto** is only available for Dolby Digital sources.

Multi-channel presets

With the optional multi-channel input card the 568.2 Digital Surround Processor can process sources consisting of up to six discrete multi-channel digital inputs.

Each source can be configured to use either the multi-channel input, or a two-channel input such as D5, D6, or D7.

If a source, such as DVD, is configured to use the multi-channel input, you can specify a separate two-channel preset and six-channel preset to be selected automatically, depending on the audio format of the source.

In addition, for one enhanced multi-channel source you can specify four alternative presets: Music 2, Music 6, Movie 2, and Movie 6, which will be selected according to the audio content. The Music or 5.1 Movie subwoofer configuration will also be selected automatically, as appropriate. For more information see *MHR Smart Link*, page 2.

Discrete

The Discrete preset is designed for music, and treats the inputs very much like 5.1 channel compressed sources; for example the same dynamic bass limiting is used to protect the speakers.

The Discrete preset uses the subwoofer configuration specified for Music presets.

Cinema

The Cinema preset is a user preset which is provided when you reset the 568.2 to a standard Type; see *Choosing a standard setting*, page 68. It is based on the built-in Discrete preset, but with settings more appropriate for movie soundtracks. When using the Meridian Smart Link it is automatically selected for the enhanced source for Movie 6 materials.

The Cinema preset can be modified, or even deleted if you prefer to use Discrete for all the multi-channel materials; see *Defining your own presets*, page 34.

The Cinema preset uses the subwoofer configuration specified for 5.1 Movie presets.

Discrete preset parameters

| <i>Parameter</i> | <i>Options</i> | <i>What it changes</i> |
|------------------|---------------------|---|
| HS Out? * | Y or N | Select Y for high-rate audio, upsampled if necessary. Select N for standard-rate audio, downsampled if necessary. |
| LFE cut? | Off, On | Adds a 10dB cut to the LFE input. |
| 2+2+2 | Off, 5.1, Side, 7.1 | Determines how channels 3+4 are used. Side uses them for the side speakers. |
| LFE | -18dB to +10dB | The relative level of the LFE bass channel. |
| Limit | -15 to -5dBFS | The peak-level limit of the total bass signal added to the main speakers. |

* Only available with compatible hardware; contact your Meridian dealer.

Ambisonics

The Ambisonics preset allows you to decode multi-channel sources which have been encoded in Ambisonics B format.

Ambisonics B format contains four independent channels of information to give a three-axis representation of the sound at the recording position. The signals are: mono sound pressure, left-right velocity component, front-back velocity component, and up-down velocity component.

The Ambisonics preset uses the subwoofer configuration specified for Music presets.

Setting up the digital surround processor

This chapter explains how to install the digital surround processor. It describes what you should find when you unpack the unit, how you should connect it to your other audio equipment and speakers, and the siting constraints.

Before you begin installation you should ensure that your digital surround processor is the correct voltage for your local AC supply. If it is not, do not try to install the unit, and contact your dealer.

You should not make any connections to the digital surround processor, or to any other component in your system, while the AC power supply is connected and switched on.

Unpacking

The digital surround processor comes in a box containing the following components:

- Meridian 568.2 Digital Surround Processor.
- Meridian System Remote.
- Power cord.
- 500 Series communications lead.
- RS232 computer serial lead.
- This manual.

If the 568.2 Digital Surround Processor is supplied with a multi-channel input card, a Meridian Smart Link lead is also provided.

If any of these items are missing please contact your dealer. We suggest that you retain the packing in case you need to transport the unit.

Radio interference

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.



Positioning the digital surround processor

Safety warnings

- Do not expose the unit to dripping or splashing.
- Do not place any object filled with liquid, such as a vase, on the unit.
- Do not place naked flame sources, such as lighted candles, on the unit.

To avoid overheating

Do not position the digital surround processor:

- In direct sunlight.
- Near heat sources, such as a radiator.
- Directly on top of heat producing equipment, such as a power amplifier.

Ensure that air can flow through the cooling slots on the base and top cover. Alternatively, an optional Fan kit can be fitted to ensure adequate ventilation when the 568.2 is installed in an enclosed space.

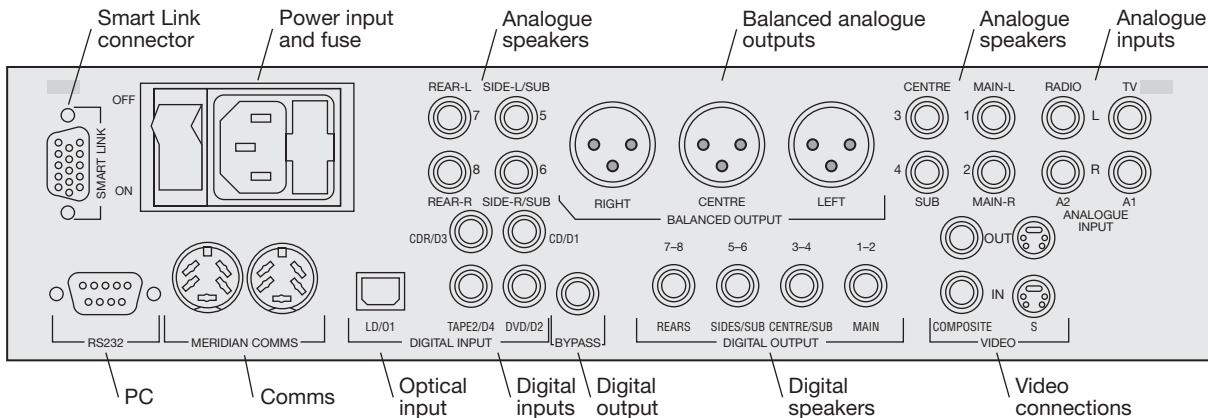
To avoid interference

Do not position the digital surround processor:

- Near strong magnetic radiation, such as near a power amplifier.
- Near to a television, or where connecting cables may be subject to or cause interference.

Connecting the digital surround processor

Rear panel



Video connections

To take advantage of the on-screen display you should loop either composite or S-video through the 568.2; do not connect both inputs.

Both video loop inputs include DC rejection.

Use this connection

COMPOSITE/S IN

COMPOSITE/S OUT

To connect to this

The video output from the 581 Video Controller, or a video recorder, TV tuner, or cable television.

The video input of a television or monitor.

Digital audio inputs

The following table gives details of the digital audio inputs:

| <i>Use this input</i> | <i>To connect to this</i> |
|-----------------------|---------------------------|
|-----------------------|---------------------------|

| | |
|------------|---|
| D1 to D4 | A digital source, such as a CD player, DVD player, digital tape recorder, or digital television tuner. |
| LD/01 | A digital-optical source, such as a LaserDisc player, the 519 Demodulator, or a CD player with no digital-cable output. |
| SMART LINK | Six discrete digital channels from a Meridian 598 DVD Player. Only available if a multi-channel input card is fitted. |

The digital connections should be made with high-quality 75 Ω screened cable. Suitable cables are available from Meridian. We do not recommend using audio cables, which do not have adequate shielding or the correct impedance, or cables intended for UHF applications, as these do not provide adequate shielding in the 1–30MHz region.

Optical connections should be made using a suitable optical fibre supplied by your dealer.

The Smart Link connection uses a standard 75 Ω SVGA computer monitor cable.

Analogue audio inputs

The following table gives details of the analogue audio inputs:

| <i>Use this input</i> | <i>To connect to this</i> |
|-----------------------|---------------------------|
|-----------------------|---------------------------|

| | |
|-----------------|---|
| TV/A1, RADIO/A2 | An analogue source such as a radio tuner, tape recorder, TV tuner, or cable television. |
|-----------------|---|

The analogue connections should be made using high-quality screened cable, taking care to connect the left and right channels correctly.

Audio outputs

The following table gives details of the analogue and digital outputs:

| <i>Use this output</i> | <i>To connect to this</i> |
|------------------------|---|
| MAIN 1-2 | Main left and right speakers. |
| CENTRE/SUB 3-4 | Centre speaker and centre or mono subwoofer. |
| SIDES/SUB 5-6 | Left and right subwoofers, or side left and side right surround speakers. |
| REARS 7-8 | Left and right rear surround speakers. |

To use a Meridian DSP loudspeaker in a particular position connect it to the appropriate digital output.

To use a Meridian active loudspeaker, or an analogue speaker in conjunction with a suitable power amplifier, connect the input of the power amplifier to the appropriate analogue output.

Communications connections

The following table gives details of the communications connections:

| <i>Use this connection</i> | <i>To connect to this</i> |
|----------------------------|--|
| COMMS | Other Meridian 500 Series equipment, and the master digital speaker. |
| RS232 | The serial port of a PC, to configure the 568.2. See <i>Configuring the digital surround processor using a computer</i> , page 81. |

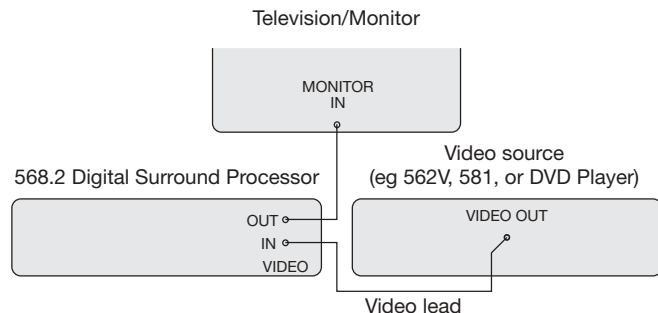
Other connections

The following table gives details of the other connections:

| <i>Use this connection</i> | <i>To connect to this</i> |
|----------------------------|---|
| BYPASS | A digital tape recorder, or second digital surround processor. |
| EXPANSION | Depends on the expansion card fitted; consult your Meridian dealer. |

Connecting video

On-screen display



If your surround system includes video the 568.2 can add a text overlay to the video signal, to provide additional information about its operation in the form of a textual on-screen display (OSD). In normal operation this repeats the information provided on the 568.2 front panel display. During calibration the on-screen display provides additional guidelines to help you perform the calibration sequence.

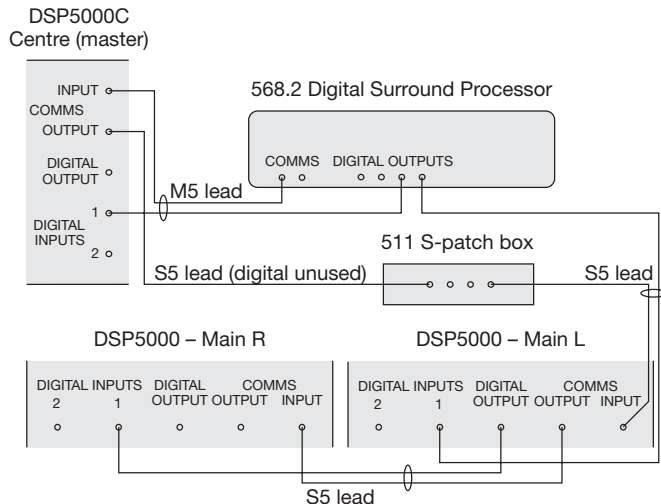
- Connect either the composite or S-video output from the video source to the appropriate VIDEO IN socket on the 568.2 Digital Surround Processor.

- Connect the corresponding VIDEO OUT socket from the 568.2 to the television or monitor.

The on-screen display automatically locks to an NTSC, PAL, or SECAM signal, and requires an input signal to operate. The video circuits in the 568.2 are of broadcast quality, and passing the video signal through the digital surround processor will not affect its quality.

Connecting speakers

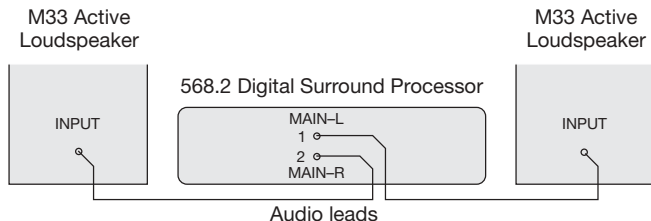
To connect to Meridian DSP loudspeakers



- If your system includes more than two Meridian DSP loudspeakers you will need a 511 S-patch box (available separately) to link together the S5 leads from each speaker. Connect the COMMS output from the master digital speaker to one socket on the 511 using an S5 lead.
- Link all the other digital speakers together using S5 leads, as shown in the illustration. The other sockets on the 511 can be used to distribute the comms to each slave speaker.
- Use the duplicate sockets on each digital speaker to link the speakers together in pairs, corresponding to the pairs of channels on the digital outputs.

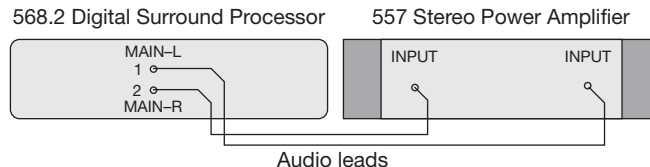
- Use the comms part of an M5 lead to connect one of the COMMS sockets on the 568.2 to the digital speaker you have chosen as the master (typically the centre speaker).
- Use the audio part of the M5 lead to connect the digital speaker to the appropriate digital output socket.

To connect to active loudspeakers (eg Meridian M33s)



- Connect the appropriate analogue output socket from the digital surround processor to the speaker inputs, using screened audio cable.

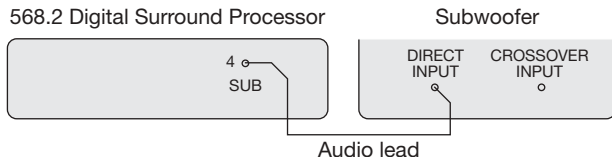
To connect to a stereo power amplifier (eg Meridian 556 or 557)



- Connect the appropriate analogue output sockets from the digital surround processor to the stereo power amplifier line inputs, using screened audio cable.
- Connect the speaker outputs from the stereo power amplifier to suitable speakers.

The Meridian 557 Stereo Power Amplifier provides balanced inputs, so you have the option of connecting to it using the balanced outputs of the 568.2 Digital Surround Processor.

To connect an active subwoofer (eg Meridian M1500 or M2500)



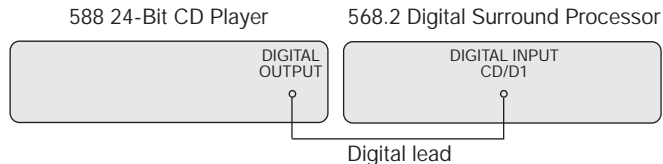
- Connect the SUB analogue output socket from the 568.2 Digital Surround Processor to the subwoofer's line level input.

The digital surround processor provides very high-quality crossovers for the subwoofer, and for best results you should use these instead of the subwoofer's crossover. To do this set the subwoofer filtering to Narrow, and remove any crossover in the subwoofer or set it to its highest setting (eg 200Hz). If you cannot do this set the subwoofer filtering to wide to switch off the digital surround processor's crossover and use Sine/Sub mode to match the subwoofer's crossover frequency. For more information see *Setting up subwoofers*, page 78.

If you are using an M1500 or M2500 use the L+ input and configure it for Bypass; refer to the subwoofer's user guide for more information.

Connecting sources

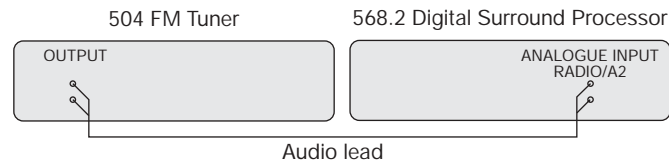
To connect to a digital source (eg Meridian 588 24-Bit CD Player)



You can connect up to five digital sources to the 568.2 Digital Surround Processor.

- Connect the digital source to one of the digital input sockets of the 568.2, using a high-quality digital phono lead.

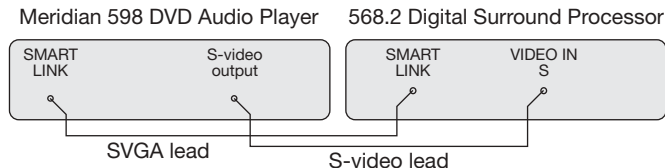
To connect to an analogue source (eg Meridian 504 FM Tuner)



You can connect up to two analogue sources to the 568.2 Digital Surround Processor.

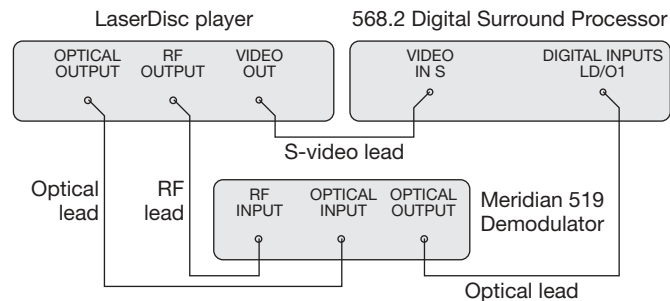
- Connect the analogue source to one of the analogue input sockets of the 568.2, using a standard phono lead.

To connect to a DVD-Audio player (eg Meridian 598 DVD Player)



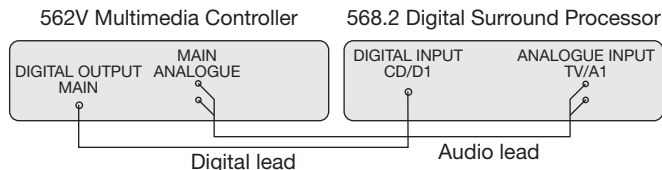
- Connect the S-video output from the DVD player to the S VIDEO IN socket of the 568.2, using an S-video lead.
- Connect the SMART LINK output from the DVD player to the SMART LINK input of the 568.2, using an SVGA computer monitor lead.

To connect to a LaserDisc player



- Connect the S-video output from the LaserDisc player to the S VIDEO IN socket of the 568.2, using an S-video lead.
- Connect the RF output from the LaserDisc player to the 519 RF input.
- Connect the optical output from the LaserDisc player to the 519 optical input, and the 519 optical output to the LD/O1 digital input socket on the 568.2, using optical leads.

To connect to a 562 or 562V Multimedia Controller



- Connect the MAIN digital output of the 562 or 562V to the CD/D1 digital input socket of the 568.2, using high-quality 75Ω screened cable.
- Connect the MAIN analogue output of the 562 or 562V to the TV/A1 analogue input socket of the 568.2, using screened audio cable.

This takes advantage of the high-quality 24-bit analogue-to-digital converter in the 568.2 to perform the conversion of analogue sources.

- If you are using a 562V to switch the video signals, route the video through the 568.2 to take advantage of the on-screen display; see *On-screen display*, page 59.

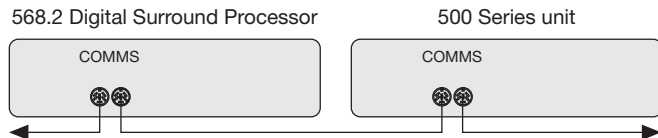
- Connect up to eight analogue, five digital, and two optical sources to the appropriate inputs of the 562 or 562V.
- Configure the 562 to Type 1.
- Configure each 562 or 562V source as required; refer to the *562/562V User Guide* for more information.
- Configure the 568.2 to a 562 Type option; see *Choosing a standard setting*, page 68.

Connecting to other Meridian equipment

To connect to other Meridian 500 Series equipment

- Connect one of the COMMS sockets on the back panel of the 568.2 Digital Surround Processor to one of the COMMS sockets on another 500 Series unit, using the 500 comms lead provided with the digital surround processor.

The sequence in which you connect the units is not important.



Then configure the units with the following automatic setup procedure:

- Switch all the units to standby.
- Press **Clear** (remote).

Each unit will display:

Auto Setup

One unit will then be designated as the controller, and display:

Controller

This is the unit that will respond to the remote.

All the other units will be configured as non-controllers, and display:

Not Con.

Your system is now set up and ready for use.

- If for any reason the automatic setup does not give the configuration you want, restore the default operation by selecting one of the standard types; see *Choosing a standard setting*, page 68.

Note: Do not, under any circumstances, connect any equipment other than Meridian 500, 800, 600, or 200 Series to the socket marked COMMS on the back of the digital surround processor.

Configuring the digital surround processor without a computer

The 568.2 Digital Surround Processor can be set up for most standard configurations of loudspeakers and sources using just the front panel controls and Meridian System Remote.

This chapter explains how to configure the digital surround processor without using a computer, and then how to calibrate the loudspeakers and sources for your particular system.

Alternatively, for complete control over all aspects of the digital surround processor's configuration you can set up the unit from a computer using the Meridian Configuration program. For full information refer to the next chapter.

Choosing a standard setting

The digital surround processor provides several alternative standard settings, called Types, which configure all aspects of the 568.2 into the most commonly needed configurations. In addition, any User Types you create using the Meridian Configuration program are also available.

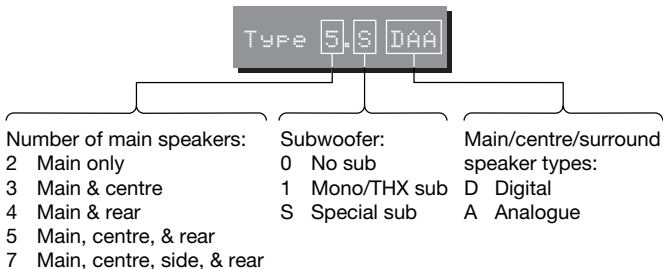
Choosing one of the Types overrides any other configuration you may have performed, and so can be used to reset the configuration of the unit.

If your digital surround processor is connected to a television or monitor, the on-screen display also provides additional text explaining what to do. For information about setting up the on-screen display refer to *Connecting video*, page 59.

The Type you choose depends on the following aspects of your system:

- The number of speakers in your system.
- Whether your system includes a subwoofer.
- Whether the speakers are analogue or digital.

The following diagram shows the meaning of the standard Type codes:



The Special sub option gives no subwoofer for Music DSP presets, a centre subwoofer for Logic presets, and an LFE subwoofer for 5.1 Movie presets.

To select a Type

- Put the digital surround processor into standby by pressing **Off** (front panel or remote).

- Hold down the **▲** key on the front panel until the display shows:

Type in... 3

- Hold down the **▲** key for three more seconds until the display shows:

Type, wait...

It will then show the current Type setting; for example:

Type 5.1 AAA

- Press **▲** or **▼** on the front panel to select the Type.

For example, if you have two analogue speakers select the display:

Type 2.0 A__

- Wait for a few seconds, while the display shows:

Typeing, wait

- Press the **Off** key on the front panel.

Exiting Type

The display shows:

To set up the 568.2 for use with a 562 or 562V Multimedia Controller

While in Type, select 562 Mode as follows:

- Press the **Source** key on the front panel; the display shows:

562 Mode on

- Press the **Source** key again to turn off 562 Mode. While 562 Mode is on the Dolby indicator is illuminated.

In 562 Mode all the digital and analogue sources use CD/D1 and TV/A1 respectively:

| Source | Input |
|---|-------|
| CD, Tape 2, CDR, Cable, DVD, and LD | CD/D1 |
| Radio, LP, TV, Tape 1, VCR 1, and VCR 2 | TV/A1 |

If a multi-channel input card is present, the DVD source is assigned to the M1 input.

For information about connecting up the 568.2 see *To connect to a 562 or 562V Multimedia Controller*, page 65.

Standard source settings

The digital surround processor provides 12 sources corresponding to the 12 source selection keys on the Meridian System Remote.

When the digital surround processor is reset to one of the standard Types the sources are set up with the labels, inputs, and presets shown in the table below.

| <i>Source</i> | <i>Audio input</i> | <i>2-channel preset</i> | <i>Digital preset</i> | <i>DTS preset</i> | <i>MPEG preset</i> |
|---------------|--------------------|-------------------------|-----------------------|-------------------|--------------------|
| CD | CD/D1 | Trifield | Digital | DTS Mus | MPEG Mus |
| Radio | RADIO/A2 | Music | Digital | DTS Mus | MPEG Mus |
| LP | RADIO/A2 | Music | Digital | DTS | MPEG |
| TV | TV/A1 | TV Logic | Digital | DTS | MPEG |
| Tape 1 | RADIO/A2 | Music | Digital | DTS | MPEG |
| Tape 2 | TAPE2/D4 | Music | Digital | DTS | MPEG |
| CDR | CDR/D3 | Trifield | Digital | DTS | MPEG |
| Cable | TAPE2/D4 | TV Logic | Digital | DTS | MPEG |
| DVD * | DVD/D2 | Trifield | Digital | DTS | MPEG |
| VCR 1 | TV/A1 | Pro Logic | Digital | DTS | MPEG |
| VCR 2 | RADIO/A2 | Pro Logic | Digital | DTS | MPEG |
| LD | LD/01 | THX Cinema | Digital THX | DTS THX | MPEG THX |

* If a multi-channel card is present, the DVD source is chosen as the advanced source with the following settings; see *MHR Smart link*, page 2:

| <i>Source</i> | <i>Audio input</i> | <i>Music2 preset</i> | <i>Movie2 preset</i> | <i>Music6 preset</i> | <i>Movie6 preset</i> |
|---------------|--------------------|----------------------|----------------------|----------------------|----------------------|
| DVD | M1 | Trifield | PLIIMovie | Discrete | Cinema |

Calibrating the system

To help you to set up your installation to give the best possible sound with any particular combination of associated equipment, the 568.2 Digital Surround Processor includes a built-in calibration procedure.

This calibration procedure uses test signals to present a series of sounds, which you use to adjust certain aspects of the system to their optimum settings.

You should work through the calibration procedure the first time you set up your surround sound system, and whenever you want to check the calibration, such as after changing the layout of your room.

Using the calibration procedure

We recommend that you perform the calibration procedure using the Meridian System Remote and from the listening position.

As you run the calibration procedure the name of each calibration test is shown on the front panel display, followed by the parameters adjusted in the test.

If your digital surround processor is connected to a television or monitor, the on-screen display also provides additional text explaining what to do. For information about setting up the on-screen display refer to *Connecting video*, page 59.

Each calibration test uses a test signal designed to give the best results.

Using a Sound Pressure Level meter

Although you can perform the calibration procedure by ear, it is recommended that you perform the tests using a Sound Pressure Level meter. These are available fairly cheaply from Tandy/Radio Shack, or your Meridian dealer may be able to lend you one.

Set the Sound Pressure Level meter to C weighted, and Slow. Take readings with the meter at the listening position, pointing vertically. You should hold the meter with an outstretched arm to minimise reflections from your body.

To choose the distance units

You can choose to display and enter distances in either feet and inches, or metres.

To change the distance units:

- Put the digital surround processor into standby by pressing **Off** (front panel or remote).
- Press and hold the ▼ key on the front panel for at least five seconds.

The display shows the distance units:



Metric



Imperial

or:

To start the calibration procedure

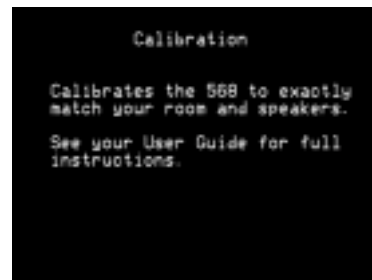
- Put the digital surround processor into standby by pressing **Off** (front panel or remote).
- Press and hold the **Off** key on the front panel for at least five seconds.



Calibration

The display shows:

If you have an on-screen display it shows:

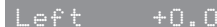


Calibration

Calibrates the 568 to exactly match your room and speakers.

See your User Guide for full instructions.

After a few seconds the display shows:



Left +0.0

For more detailed information about this and the other calibration tests see the following sections.

To move between the calibration tests

- Press ► (remote) or **Source** (front panel) to move to the next test.
- Press ◀ (remote) to move back to an earlier test.
- Press **Store** (front panel or remote) to jump to the next set of tests.

The calibration tests are described in the following sections.

To exit from the calibration procedure

You can exit from the calibration procedure at any time, and any parameters you have set will be retained.

- Press **Off** (front panel or remote).

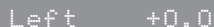
Calibration tests

Levels

These tests allow you to adjust the output level to each speaker individually, and it follows the general guidelines from Dolby Laboratories and Lucasfilm. A Sound Pressure Level (SPL) meter can be useful at this stage; ask your dealer for more information.

In each test the display shows the speaker being tested, and the current relative level.

For example:



Left +0.0

If you have an on-screen display it shows:



Left +0.0

Match the channel levels. Set to 75dB SPL if using a meter.

MENU +/- adjusts the level
MENU <-> changes test
STORE moves to next stage

- Use the ► and ◀ keys to move between each of the speakers in the layout in the sequence: Left, Centre, Right, Side R, Rear R, Rear L, Side L, and subwoofers.
- Use ▲ and ▼ to adjust the level of the speaker. Ignore any tonal difference.

For correct THX reproduction you should adjust each speaker to 75dB SPL using an SPL meter. Even if your speakers are not THX approved this setting is recommended.

If you have Meridian DSP loudspeakers they cannot be set above +0db.

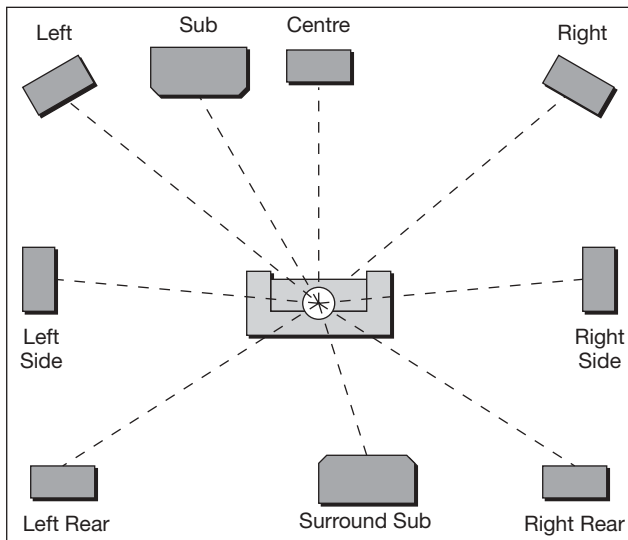
Note: You cannot set the level of a subwoofer by ear, because low-frequency noises sound quieter. To set the subwoofer correctly either use an SPL meter, or set it by ear and then reduce the subwoofer gain by 15dB to correct for human hearing.

- When you have completed the Levels section press ► or **Store** to proceed to the next test.

Distance

These tests allow you to adjust the delay of each of the speakers in the layout to time-align the system so that sounds are coincident when they arrive at the listening position.

Before setting up the speaker outputs you need to measure the distance to each speaker from the listening position:



Measure from the ear height at the listening position to the tweeter on each speaker (where applicable), in the distance units you have chosen; see *To choose the distance units*, page 72.

- Use the ► and ◀ keys to move between each of the speakers in the layout.

The display shows the speaker being tested, and the distance:

Left 18'0

If you have an on-screen display it shows:

```

Left 18'0

Measure from the speaker to
the listening position.
(1' = 12 inches = 300mm)
MENU F1 adjusts the distance
MENU F4 changes test
STORE moves to next stage
  
```

- Use ▲ and ▼ to change the distance.

Repeat this for each of the speakers in your layout.

- Press ► or **Store** to proceed to the next calibration stage.

Fine tuning

These tests allow you to fine-tune the phase and delay of each speaker when used in conjunction with other speakers on the layout.

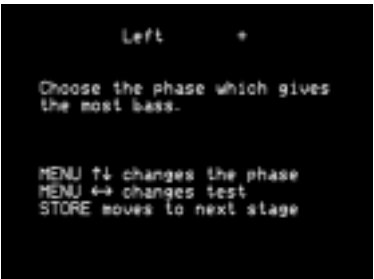
- Use the ► and ◀ keys to move between each of the speakers in the layout.

The first display allows you to adjust the phase.



For example:

If you have an on-screen display it shows:

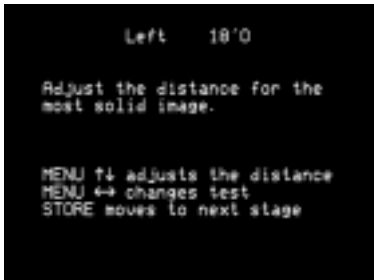


The next display shows the distance (or delay) for the same speaker.



For example:

If you have an on-screen display it shows:



Choose the correct setting as follows:

| Setting | What it sounds like |
|-----------|---|
| Correct | The sound between the speakers is very even, and does not change radically as you move your head. |
| Incorrect | The sound appears diffused, and changes in timbre and apparent location as you move your head. |

Pay particular attention to the centre channel, as this can have a dramatic effect on the overall sound.

As you increase the delay the speaker will appear to move away from you.

You have now completed the calibration of your system.

- Press **Off** (front panel or remote) to exit from the calibration procedure.

Setting up subwoofers

This section explains how to use Sine/Sub mode to adjust the subwoofer crossover frequency to suit the subwoofers in your system, and use a sinewave test signal to check for room resonances.

To turn on Sine/Sub mode

- Put the digital surround processor into standby by pressing **Off** (front panel or remote).
- Press and hold the **Mute** key on the front panel for at least five seconds.

The display shows:



Sine/Sub On

The 568.2 will then return to standby with Sine/Sub mode turned on.

Sine/Sub mode adds two extra options to the DSP parameter menus: **Sine** and **Xover**.

To turn off Sine/Sub mode

- Repeat the above procedure until the display shows:



Sine/Sub Off

To adjust the subwoofer crossover frequency

The 568.2 allows the crossover frequency for any subwoofers which you have to be adjusted between 30 and 120Hz. The crossover can be set independently for Music, Logic, and 5.1 Movie presets. The default is the THX standard of 80Hz.

- Turn on Sine/Sub mode, as described above, and select a source.
- Press ◀ or ▶ (remote) until the display shows the current crossover frequency.

For example:



Xover 80Hz

- Press ▲ or ▼ (remote) to set the crossover frequency.

For THX loudspeaker systems you should not adjust these settings – they should be left at 80Hz. 80Hz is also the recommended setting for all movie listening. You may prefer, however, to lower the crossover frequency for music if your main speakers have good bass handling down to, say, 50Hz.

To use the sinewave sweep test

Sine/Sub mode includes a sinewave signal test, to help you set the subwoofer crossover frequencies, or check for room resonances.

- Turn on Sine/Sub mode, as described above, and select a source.

- Press ◀ or ▶ (remote) until the display shows:

Sine Off

- Press ▲ to turn on the sinewave signal.

The display shows:

Pause 80Hz

An 80Hz sinewave will be played through all channels.

You can change the test signal using the menu keys, as described in the following sections.

To change the sweep rate

- Press ◀ or ▶ (remote) until the display shows:

Pause 80Hz

- Press ◀ or ▶ (remote) to change the frequency in steps of 1Hz.
- Press ▲ or ▼ to change the sweep rate and direction, as follows:

Display

Description

Sine >> 88Hz

Fast sweep up.

Sine > 82Hz

Slow sweep up.

Pause 80Hz

Paused.

Sine < 78Hz

Slow sweep down.

Sine << 65Hz

Fast sweep down.

To change the volume

- Use the volume keys in the usual way.

Warning: Very loud low-frequency signals may damage speakers.

To select the channel

- Press ◀ or ▶ (remote) until the display shows the current channels.

For example:

All Channels

- Press ▲ or ▼ to select a specific channel, or All Channels.

To select other test signals

- Press ◀ or ▶ (remote) until the display shows the current signal.

For example:

Signal Sine

- Press ▲ or ▼ to choose between the following test signals:

| <i>Display</i> | <i>Description</i> |
|----------------|---|
| Signal Sine | A sinewave. |
| Signal Off | Silence. |
| Signal Noise | Pink noise (band pass 500Hz to 2kHz for main channels). |

Configuring the digital surround processor using a computer

The 568.2 Digital Surround Processor provides a flexible range of customisation options which you can change to suit your own preferences and the other equipment in your system. To configure the 568.2 you use the Meridian Configuration program, an intelligent Windows-based application that is supplied with the 568.2. This allows you to create one or more custom configurations, and download them to the 568.2 so that they are available alongside the built-in types.

This chapter explains how to install the Meridian Configuration program, and then how to use it to create your own configurations of the 568.2.

The Meridian Configuration program

The Meridian Configuration program is a stand-alone Windows-based application that lets you design your own configuration of the 568.2 Digital Surround Processor to suit your own personal preferences and the particular configuration of equipment in your system.

The Meridian Configuration program provides the following sections to allow you to control the corresponding aspects of the digital surround processor's operation:

Setup



Setup

Lets you specify general features of the digital surround processor's operation, including the position of the on-screen display, the information provided on the front panel displays, the startup volume, and settings affecting its operation in multi-room systems.

Speakers



Speakers

Lets you configure the digital surround processor to suit the layout of the loudspeakers in your system,

and the type of each speaker, to ensure that you get perfect surround sound performance.

Sources



Sources

Lets you customise the operation of each of the sources, including the presets used by each source for each of the audio formats, the digital, analogue, and/or video inputs used for that source, and additional information about the type of each source.

Presets



Presets

Lets you customise the settings of the built-in DSP presets, and create additional presets of your own based on the built-in presets.

Installing the Meridian Configuration program


Requirements

To use the Meridian Configuration program you need:

- A computer running Windows 95 or Windows NT 4.00.
- A 100MHz or faster Pentium-class processor.
- At least 16 Mbytes of RAM.
- 5 Mbytes of free disk space.
- A vacant 9-pin serial port assigned to one of COM1 to 4.

The software requires a mouse or similar pointing device – it cannot be operated solely from the keyboard.

To install the Meridian Configuration program

- Insert the first Meridian Configuration program installation disk.
- Choose **Run...** from the **Start** menu.
- Type A: setup and press .
- Follow the on-screen instructions, inserting the second installation disk when prompted.

Planning the configuration

Before creating a configuration for your 568.2 Digital Surround Processor it is a good idea to plan the following aspects of your setup:

- How you are going to set up the different speakers in your layout.
- Whether the bass is going to be handled by the main speakers, or by one or more subwoofers.
- Which analogue or digital inputs you are going to use for each of your sources.
- Which DSP preset you want as the default preset for each source and audio format.

To run the Meridian Configuration program

- Click **Start**, point at **Programs**, then click **Meridian Configuration**.

The **Meridian** window will be displayed:



The toolbar provides a convenient way of accessing the most important menu options:

| <i>Button</i> | <i>Option</i> | <i>Function</i> |
|---------------|---------------|--|
| | New | Creates a new settings file. |
| | Open | Opens an existing settings file. |
| | Save | Saves the current settings file to disk. |
| | Fetch | Fetches the current configuration of the attached product(s). |
| | Store | Stores the current settings and User Types to attached products. |
| | Disconnect | Disconnects the program from attached products. |
| | Add product | Adds a product to the current settings. |
| | Copy | Copies text or settings onto the clipboard. |
| | Paste | Pastes text or settings from the clipboard. |
| | About | Displays program information. |

To connect the serial cable

The serial cable is symmetrical, and can be connected either way round.

- Connect one end to the RS232 connector on the back panel of the 568.2 Digital Surround Processor.
- Connect the other end to one of the serial ports on the PC or PC notebook computer.

Then specify the serial port you are using as follows:

- Choose **Options** from the **View** menu to display the **Options** dialogue box:



- Select the port you want to use and click the **OK** button.

Creating a new settings file

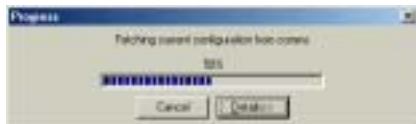
The section explains how to create a new settings file, using the Meridian Configuration program, and how to enter personal information to identify the settings in your product.

The first step is to fetch the initial settings from the digital surround processor, to use as a starting point for your configuration.

- Click the Fetch button in the toolbar:



The **Progress** dialogue box will show you the progress as the settings are fetched:



A new settings file will be created for you, with the initial name **MSF1**, and the **Meridian** window will show a **Surround processor** icon to identify the product you are configuring:

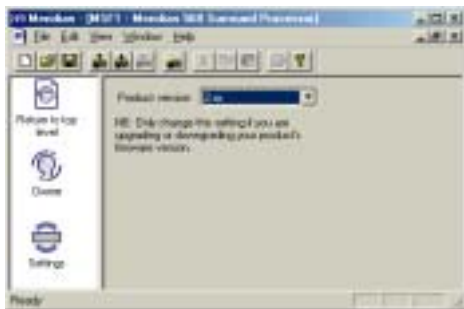


- Check that the correct product version number is displayed in the **Product version** drop-down menu.
- Choose **Save As** from the **File** menu, enter an appropriate name for the file, such as your name, and click the **Save** button.

To display the settings

- Double-click the **Surround processor** icon, to open it and display the settings it contains.

The left-hand panel of the **Meridian** window will change to show the following three icons:



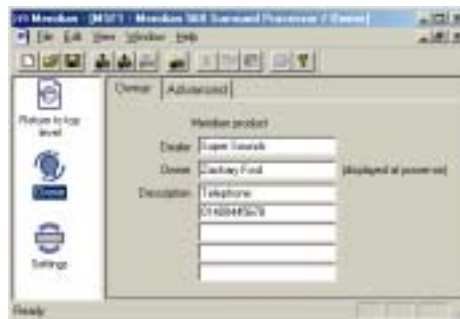
Owner lets you enter personal information, for future reference, and choose the message displayed when you first switch the unit on, and **Settings** is the initial configuration in the settings file.

Double-clicking **Return to top level** takes you back to the previous level.

To enter your personal details

- Click the **Owner** icon in the left-hand panel.
- Enter any text you like in the **Dealer**, **Owner**, and **Description** fields.

You can enter up to 12 characters in each field, the size of the 568.2 front panel display:



The **Owner** text will be displayed when you turn the 568.2 on. The **Dealer** and **Description** text are displayed after the product version and serial numbers if you press the front panel **Display** key in standby.

The options on the **Advanced** tab are for use by dealers in setting up multi-room systems, and to upload a new version of the software to the product, and it is recommended that you do not change these settings.

To display or edit the settings

- Double-click the **Settings** icon.

The **Meridian** window will change to show the four categories of settings contained in the settings file: **Setup**, **Speakers**, **Sources**, and **Presets**.

The options available in each case are explained in the following sections.

At this stage you may find it useful to maximise the **Meridian** Configuration program window so you can see all the options on each screen.

Setting up speakers

This section describes how to use the Meridian Configuration program to configure the 568.2 Digital Surround Processor for the configuration of loudspeakers in your system, and specify information about the type of each speaker, for optimum performance.

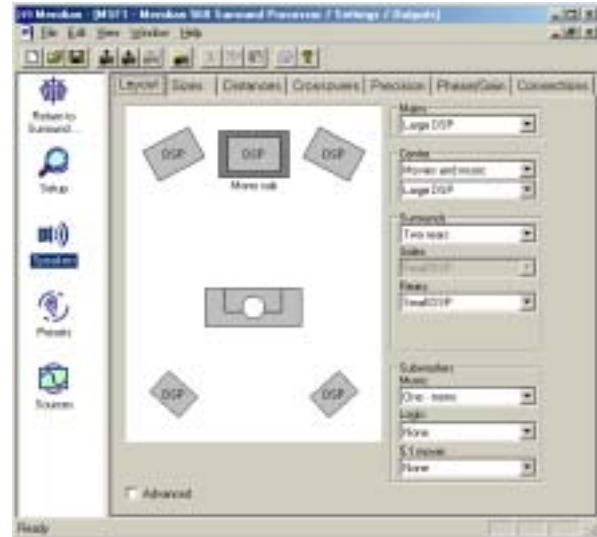
The first stage in setting up the speakers is to specify the number of speakers in the layout, and the type and size of each speaker.

The 568.2 Digital Surround Processor can support up to eight analogue or digital loudspeakers.

To specify the speaker layout

- Click **Speakers** in the left-hand panel of the **Meridian** window.

- If necessary click the **Layout** tab to display the **Layout** page of speaker settings:



- Specify the type of each speaker by selecting the appropriate option from each of the drop-down menus.

As you change the options the layout illustration will change to show the resulting layout.

If you select a combination of options that is not supported, the other options will be adjusted accordingly to ensure that the whole configuration is valid.

For example, if you specify **Two rears and two sides**, and then select two subwoofers, the side speakers will be removed to allow you to have the subwoofers.

If you specify **96.24 DSP** for the left, right, and centre speakers, an additional **Meridian High Resolution** setup option allows you to specify when to use Meridian High Resolution; see *Changing the setup options*, page 101.

The options available for the **Mains**, **Centre**, **Surrounds**, and **Subwoofers** drop-down menus are explained in the following sections.

Mains

Use the **Mains** drop-down menu to specify the size and type of the main Speakers.

- Choose **Large** if your main left and right speakers are large, with good bass performance, and you want to use them for full range reproduction.

- Choose **Small** if your main left and right speakers do not have a good bass response and you want to use one or more subwoofers to handle the bass for the system.
- Choose **analogue DSP** or **96.24 DSP** according to the type of each speaker.

The following table gives recommended settings for Meridian loudspeakers:

| <i>Loudspeaker</i> | <i>Recommended setting</i> |
|--|--------------------------------|
| DSP8000, DSP5500HC | Large 96.24 DSP |
| DSP5000, DSP5500, DSP6000, or DSP6000C | Large DSP or Large 96.24 DSP * |
| DSP5000C | Small DSP or Small 96.24 DSP * |
| M60 | Large analogue |
| M60C, M33, or A500 | Small analogue |
| DSP33 | Small 96.24 DSP |

* 96.24 versions.

Centre

Use the **Centre** drop-down menus to specify which presets use the centre speaker, and its size and type.

- From the first drop-down menu choose one of the following options:

| <i>Option</i> | <i>Description</i> |
|------------------|---|
| None | If you do not have a centre speaker. |
| Movies only | If you want to use the centre speaker for Logic and 5.1 Movie DSP presets only. |
| Movies and music | If you want to use the centre speaker for all presets. |

- From the second drop-down menu specify the type of the centre speaker; the options are as for the main speakers.

Surrounds

Use the **Surrounds** drop-down menus to specify the number and type of the surround speakers.

- From the first drop-down menu specify the number of rear speakers and side speakers you have in your surround system.
- Use the **Sides** and **Rears** drop-down menus to specify the type of the side and rear speakers.

Subwoofers

- Use the **Subwoofers** drop-down menus to specify the number of subwoofers, and the DSP presets that use them.

If your main left and right speakers are small you will need to use one or more subwoofers to handle the bass. You can choose between appropriate combinations of mono (front), centre, left and right, or surround.

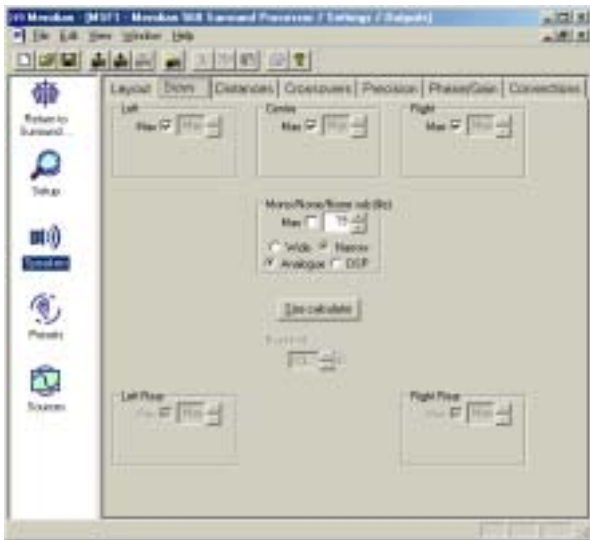
If your main left and right speakers are large you can use one or more subwoofers to augment the bass from the centre channel. With 5.1 sources an additional option is to use the subwoofer only for the LFE channel.

You can specify a different subwoofer configuration for Music, Logic, and 5.1 Movie DSP presets.

The **Advanced** checkbox is for dealer use only, and it is recommended that you leave this unchecked unless you have special requirements.

To specify the speaker sizes

- Once you have specified the speaker layout for your system, click the **Sizes** tab to display the **Sizes** page of speaker settings:



This allows you to set up speaker protection for the 5.1 sources, the type of each subwoofer, and peak-level limiting.

Speaker protection

Because of the high bass levels that 5.1 materials are capable of reproducing, the digital surround processor allows you to set up automatic protection of each full-range speaker or subwoofer.

A setting of **Max** corresponds to no protection, and 0 corresponds to full protection. By default any Meridian DSP loudspeakers in your system are set to **Max**, as these include built-in protection.

You can use **SizeCalc** to help you calculate the correct value for your speakers:

- Click the **Size calculator** button to display the **SizeCalc** window:



- Specify the number of bass units in each speaker (woofers), the size of each unit, and the design of the speaker.

The size value is displayed in the **SizeCalc** display.

- Type the size into the appropriate field.

If you prefer you can copy and paste the size directly.

Subwoofer filtering and type

For each subwoofer in the system you can specify the subwoofer filtering, and its type.

- Specify the filtering from the following options:

| <i>Option</i> | <i>Description</i> |
|---------------|--|
| Narrow | The digital surround processor provides a low-pass cutoff; the subwoofer's crossover should be bypassed. This is the recommended option. |
| Wide | The subwoofer includes a crossover. |

- Specify the type of subwoofer as **Analogue** or **DSP**.

Peak-level limiting

The **Max SPL** or **Bass limit** parameter allows you to set up peak-level limiting for bass signals, and the setting applies to all the discrete digital DSP presets.

If your loudspeaker layout includes one or more subwoofers the parameter is named **Max SPL**, and it sets the peak-level limit for the LFE channel.

If your loudspeaker layout contains no subwoofer the parameter is named **Bass limit**, and it sets the peak-level limit of the bass signal added to the main loudspeakers. For loudspeaker layouts using Meridian DSP loudspeakers as the main left and right, or centre speakers, the **Bass limit** value is fixed at -11dBFS and you cannot adjust it.

To complete the speaker setup

You have now completed the first stage of setting up the 568.2, and you should save the changes you have made by choosing **Save** from the **File** menu. You can ignore the **Distances**, **Crossovers**, **Precision**, **Phase/Gain**, and **Connections** pages of settings for the moment; these will allow you to check the values you have set up when you calibrate the digital surround processor.

Setting up sources

This section describes how to use the Meridian Configuration program to configure the sources provided by the digital surround processor.

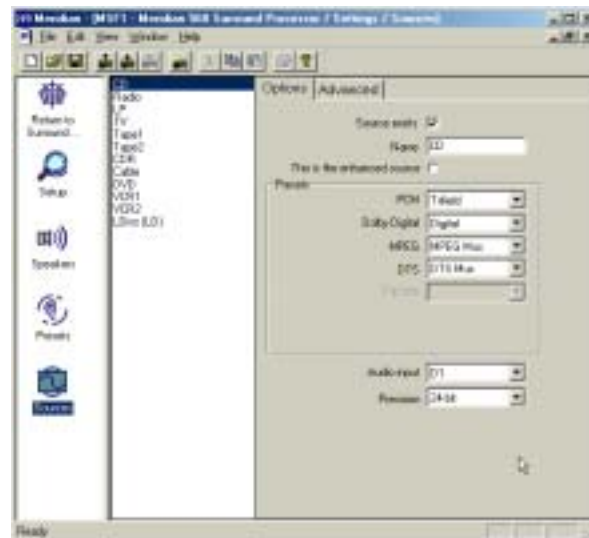
To set up sources

- Click the **Sources** icon in the left-hand panel of the **Meridian** window.

The right-hand panel shows a list of the 12 sources that are available. For each source you can display two pages of settings by clicking on the **Options** or **Advanced** tabs.

To configure the source options

- Select the source in the list of sources.
- Click the **Options** tab:



- Select **Source exists** if you want to use this source.

Disabling this options prevents the source from appearing when you press the **Source** key, or the corresponding source key on the Meridian System Remote.

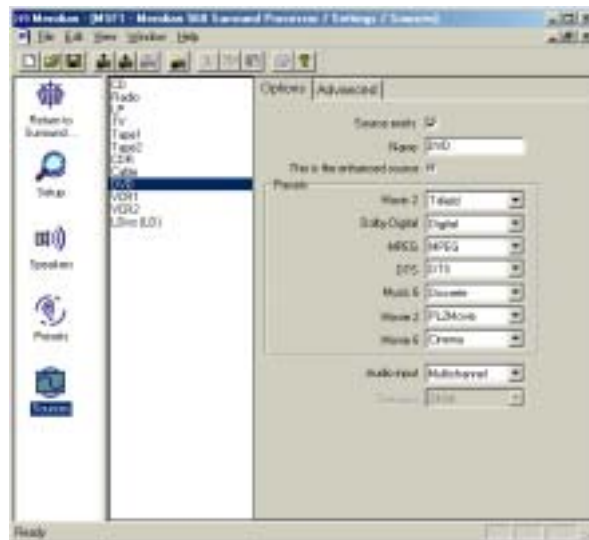
- If you want, you can change the name displayed when the source is selected by editing the **Name** field.

The name can consist of up to five letters, digits, or the characters space, full-stop, and minus. The name you specify is shown in the list of sources followed by the Meridian System Remote key used to select the source in brackets.

To set up an enhanced source

If you have a suitable source, such as the 598 DVD Player, connected to the 568.2 via the MHR Smart Link, you can designate one of the 12 sources as an enhanced source to take advantage of the additional content information provided by the MHR Smart Link.

This enables the source to select automatically between one of four alternative presets depending on the type of material you are playing: Music 2 (two-channel music), Music 6 (multi-channel music), Movie 2 (two-channel movie soundtrack), or Movie 6 (multi-channel movie soundtrack):



Presets

- In the **Presets** section specify the DSP preset you want to use for each of the five alternative audio formats: PCM, Dolby Digital, MPEG, DTS, or Discrete.

Each drop-down menu gives the built-in and user-defined DSP presets appropriate for that audio format.

Audio

- From the **Audio input** drop-down menu specify the digital or analogue audio input you want to use for the source.

The **Audio input** option can be set to **Last valid** to leave the input unchanged when you select the source. This allows you to create a source that changes some other aspect of the current source, such as its DSP preset, without changing the selected input.

If you have specified a digital input for the main audio input:

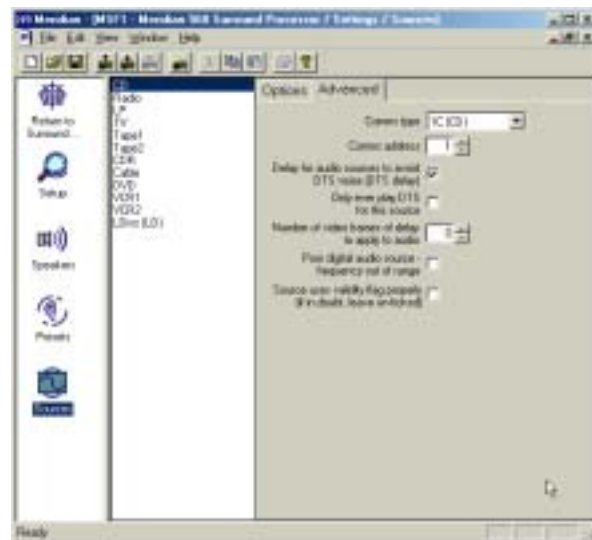
- Specify the precision for the source by choosing an option from the **Precision** drop-down menu.

All CDs and LaserDiscs are currently 16-bits. The 518 and 800 DVD/CD Player provide 24 bits. If in doubt choose **24-bit**.

For analogue inputs the precision is automatically set to **24-bit**.

To set the advanced source options

- Click the **Advanced** tab to show the **Advanced** page of settings.



- If the source is connected to another Meridian unit, set **Comms type** to **1C** for a Meridian CD player, **2C** for a Meridian FM tuner, and **3C** for a Meridian DVD player. Otherwise set it to **none**.
- If you have two Meridian source units of the same type you can configure them to have different Comms addresses. You can then select the appropriate source by specifying its Comms address in the **Comms address** field.

The following additional options are available. You should only change these with advice from your dealer:

| <i>Option</i> | <i>Description</i> |
|--|---|
| Delay for audio sources to avoid DTS noise (DTS delay) | Avoids the noise caused by switching to a DTS audio source. |
| Only ever play DTS for this source (two-channel sources only) | Creates a video DTS source that will avoid any DTS noise when switching audio formats. |
| Force this source to be six-channel (multi-channel sources only) | Select this to avoid automatic preset switching if you are using a non-Meridian source on the MHR Smart Link input. |

| <i>Option</i> | <i>Description</i> |
|--|--|
| Number of video frames of delay to apply to audio | Adds a delay required by certain video systems. |
| Poor digital audio source – frequency out of range | Select this if you have difficulty locking to the source. |
| Source uses validity flag properly | May reduce switching noise on certain sources where this is a problem. |

Configuring presets

The 568.2 Digital Surround Processor provides 24 built-in presets and the Meridian Configuration program lets you configure the DSP parameters of any of the built-in presets to suit your own preferences.

You can also create up to 10 additional user-defined presets. Each user-defined preset is based on one of the built-in presets, and can have any name of your choice.

To set up presets

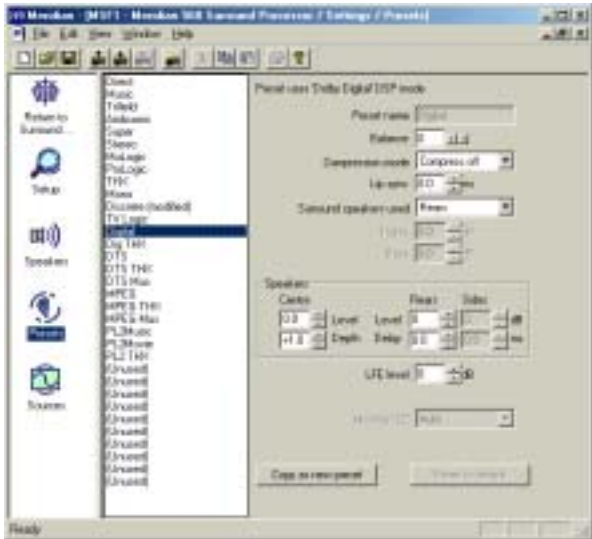
- Click the **Presets** icon in the left-hand panel of the **Meridian** window.

The right-hand panel shows a list of the 24 built-in presets, and the 10 unused user-defined presets.

To modify a built-in preset

- Select the preset in the list of presets.

The default DSP parameters will be displayed:



- Adjust the parameters as required.

Note: That the treble and bass settings will not be available if your system includes DSP loudspeakers, because in this case the DSP speakers handle the treble and bass adjustments.

For more information about the DSP parameters available for each DSP preset see *DSP presets*, page 37.

If you have modified the DSP parameters from their defaults, **(modified)** is displayed after the preset name in the list of presets.

To restore the DSP parameters to their defaults

- Select the preset in the list of presets.
- Click the **Reset to default** button.

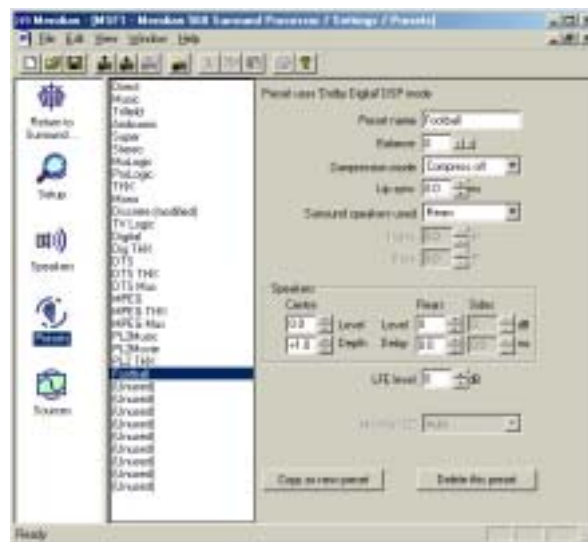
To create a user-defined preset

- Select the preset you want to use as the basis for the user-defined preset.
- Click the **Copy as new preset** button.

The new preset is created in the first available space after the built-in presets.

- Select the new preset you have created.
- Edit the preset name to identify the preset.

Initially the name is set to be the same as the built-in DSP preset it was based on, but you can chose any name of up to eight letters, digits, or the characters space, full-stop, or minus; eg **Football:**



To delete a user-defined preset

- Select the preset in the list of presets.
- Click the **Delete this preset** button.

To copy a preset to a specific position in the list of user-defined presets

- Highlight the preset you want to copy.
- Choose **Copy** from the **Edit** menu, or click the Copy button in the toolbar:
- Highlight the user-defined preset or empty position you want to replace.
- Choose **Paste** from the **Edit** menu, or click the Paste button in the toolbar:



Changing the setup options

The final stage in editing the settings is to configure the general **Setup** options.

To change the setup options

- Click the **Setup** icon in the left-hand panel of the **Meridian** window.

The **Setup** options will be displayed:



The options are described in the following table:

| <i>Option</i> | <i>What it means</i> |
|----------------------------|---|
| Lock settings on product | Locks the DSP preset parameters. |
| On-screen display position | Specifies the default position of the on-screen display. |
| Multi-room displays | Includes displays of information from Meridian sources; eg CD track number or FM tuner frequency. |
| Diagnostic displays | Includes diagnostic displays in the display options. |
| Fan | Sets the fan operation, if fitted. |
| Volume on startup | Specifies the startup volume; only available for analogue speakers. |
| Comms controller status | Specifies whether the 568.2 is controller, not controller, or set automatically. |
| System and Copy address | For multi-room setups. |

| <i>Option</i> | <i>What it means</i> |
|--------------------------|--|
| Meridian DVD present | If selected, the ◀, ▶, ▼, ▲, Store , and Clear keys on the Meridian System Remote operate the DVD player menus rather than the Digital Surround Controller menus. |
| Meridian High Resolution | Specifies whether the digital output uses Meridian High Resolution for all sources, or only when necessary. This option is only available if the left, right, and centre speakers are 96.24 DSP types; see <i>To specify the speaker layout</i> , page 89. |
| Module installed | Specifies whether the multi-channel input card is fitted. |

Calibrating the settings with your system

Once you have edited the settings to suit the configuration of your system, the next step is to store the settings to the 568.2 and use the calibration listening tests built into the 568.2 to calibrate it for correct performance.

To save the settings

First save the settings to your PC hard disk.

- Choose **Save** from the **File** menu, or click the Save button in the toolbar:



To print a summary of settings

At this stage it is useful to print a summary of the speaker and source settings, so that you can check that they correspond to your system configuration.

- Check that there is a printer connected to your PC.
- Click the **Settings** icon in the left-hand panel of the **Meridian** window.
- Click the **Print sources and output summary** button.

To store the settings to the digital surround processor

- Switch on the 568.2 Digital Surround Processor, and check that the serial cable is connected between the 568.2 and the PC.

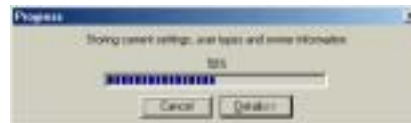
- Click the Store button in the toolbar:



The 568.2 will display:

Receivins...

The following **Progress** dialogue box shows how the operation is progressing:



If there is a problem click the **Details>>** button to see more information about the problem.

When the download is complete the 568.2 will automatically reset itself to use the new settings, and show the owner name you defined.

For example:



To calibrate the loudspeakers

Now proceed through the calibration procedure to set the correct relative level, delay, and phase for each of the loudspeakers in the system. See *Calibrating the system*, page 71.

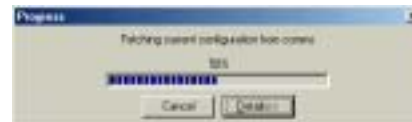
To fetch the calibrated settings

Finally fetch the calibrated settings back from the digital surround processor as follows:

- Make sure your settings file is loaded into the Meridian Configuration program.
- Click the Fetch button in the toolbar:



The **Progress** dialogue box will show you the progress as the settings are fetched:



You can verify that the calibrations you made are now included in the settings by checking the **Distances** and **Phase/Gain** pages of the **Speakers** settings option.

Creating a User Type

Once you have fetched the calibrated settings from the digital surround processor, the final step is to store them permanently to the 568.2 as a User Type, so that you can reset the unit to them whenever you need to.

When you store one or more User Types to the 568.2 they become available in the list of Types, alongside the built-in Types. For more information about selecting one of the Types see *Choosing a standard setting*, page 68.

To name the User Type

- Click the **Settings** icon in the left-hand panel of the **Meridian** window:



- Enter a suitable name in the **Type name** field to identify your User Type, such as **Standard**.

The name can have up to 12 characters.

To create additional User Types

If you wish you can create several User Types, and store them all to the digital surround processor. You can then reset the digital surround processor to any of the User Types by selecting the appropriate Type name.

To create a new User Type:

- Select the User Type you want to base it on in the left-hand panel of the **Meridian Setup** window; eg **Standard**.
- Click the **Copy as new user type** button.

The new User Type will be specified as **In use**, as identified by the circle icon in the left-hand panel of the **Meridian** window:



New type

Initially the new type will be created with the same settings as the type you based it on, and with the name **New type**:



You can then change the name of the new Type, and configure its settings, in exactly the same way as for the original Type.

A suggested naming convention is to name User Types with the date they were created: for example, 06/05/98.

To copy settings between User Types

- Highlight the User Type you want to copy the settings from.

- Choose **Copy** from the **Edit** menu, or click the Copy button in the toolbar:



- Highlight the User Type you want to copy the settings to.

- Choose **Paste** from the **Edit** menu, or click the Paste button in the toolbar:



You can also copy and paste source and preset settings from one section of a user type to the same section of another user type as follows:

- Highlight the icon corresponding to the section of settings you want to copy: **Sources** or **Presets**.

- Choose **Copy** from the **Edit** menu, or click the Copy button in the toolbar:



- Highlight the same icon in the User Type you want to copy to.

- Choose **Paste** from the **Edit** menu, or click the Paste button in the toolbar:



Completing the configuration

The final stage in creating a settings file is to save it, and then store it to the digital surround processor.

To save the current settings

- Choose **Save** from the **File** menu or click the Save toolbar button, to save the changes you have made to the settings file to your PC hard disk:



To store the settings to the 568.2 Digital Surround Processor

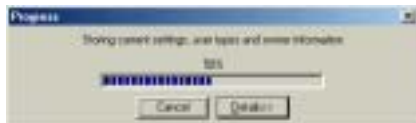
- Click the **Store** button:



The settings will then be downloaded to the 568.2. The 568.2 will display:

Receiving...

As the download proceeds the following dialogue box shows its progress:



If the download was successful the 568.2 will briefly display the owner name you have defined.

Zachary Ford

For example:

It will then switch itself to standby.

The User Type you have created will now be available in addition to the built-in Types, and will be selected by default if you need to reset the configuration of the digital surround processor; see *Choosing a standard setting*, page 68.

Troubleshooting

This chapter provides suggested solutions to typical problems that may occur when setting up the digital surround processor.

If you are still not able to resolve a difficulty with the help of this guide and the suggestions in the following pages, please contact your Meridian dealer or Meridian Audio Ltd.

General operating problems

Standby point not lit

Check the following:

- There is AC power connected to the socket on the rear of the 568.2.
- The power switch on the rear panel of the 568.2 is turned on.

If the 568.2 will still not illuminate, check any fuses in your power supply and the fuse in the inlet of the 568.2. If these are all intact, contact your dealer.

Erratic or unexpected system behaviour

Redo the Auto Configure process as follows:

- Put the whole system into standby.
- Press **Clear** on the Meridian System Remote.
- Observe all units responding correctly.

If this fails, the memory of the 568.2 may have been corrupted. If this is suspected perform a full reset; see *Choosing a standard setting*, page 68.

Remote not working

Check the following:

- The battery in the Meridian System Remote.
- Remove the 500 Comms connections from the 568.2, does it respond now? If so, replace the connections and perform an Auto Configure procedure as described opposite.
- See if the 568.2 has been set up as not controller in the Meridian Configuration program; see *Changing the setup options*, page 101. **Note:** This may be deliberate by your dealer.

When playing a Dolby Digital DVD, the 568.2 selects the Pro Logic preset

DVDs include a two-channel Dolby Digital soundtrack, which will use the default two-channel preset.

- Select a six-channel soundtrack, if it is available.

Unit is overheating

If there is not adequate ventilation around the unit, or you are operating it in an enclosed space, you will need to fit the optional Fan kit.

Audio problems

Hum on analogue input

There is no reason for the 568.2 to produce hum on the analogue input.

- Check the source equipment. Disconnect each source in turn.
- If the hum originates from a ground loop, an antenna or cable supply may be the cause. In this case an antenna-lead isolator should be fitted.
- If the 568.2 seems to be the cause of hum consult your dealer.

There is radio interference

The 568.2 is a digital audio and computing device which has been designed to very high standards of electromagnetic compatibility.

If this equipment does cause or suffer from interference to/from radio or television reception then the following measures should be tried:

- Reorient the receiving aerial (or antenna) or route the antenna cable of the receiver as far as possible from the 568.2 and its cabling.

- Ensure that the receiver uses well-screened antenna cable.
- Relocate the receiver with respect to the 568.2.
- Connect the receiver and this product to different AC outlets.
- If the problem persists contact your dealer.

Audible hiss at high volume settings

The input dynamic range of most current recordings is at maximum 16 bit. The reason for this is that currently CD, DVD, and LaserDisc use a 16-bit standard although DVD can support up to 24-bits. The analogue sources you have cannot achieve this kind of range. For comparison, analogue sources are likely to be of the order of:

- VCR, 12 bits.
- FM radio, 13 bits.
- Reel to reel tape, 13 bits.
- Cassette tape, 12 bits.
- LP, 11 bits.

Note: There may be a difference between the dynamic range of the source channel when it is operating, and the noise you hear in standby. For example, LP normally has lower noise when the stylus is not in the groove; similarly tape will be quieter when it is stopped. CD may also be quieter when it is stopped, producing so called 'digital silence'.

The 568.2 has a 24-bit capability on its internal analogue-to-digital converter, which is used for analogue sources. When the volume is turned up high you may hear its dither as a hiss when the sources are stopped. This hiss is lower than the background noise of your recordings and should be of no consequence.

The 568.2 has 24-bit output precision on the analogue outputs.

Other sources of hiss may be tracked down using the Mute option. When muted the outputs are reduced to the dither at the selected precision.

Crackling on optical inputs

Some optical sources, in particular some LaserDisc players, provide poor drive waveforms that do not meet the EIAJ standard. This is because the light modulates but never goes quite 'black' between pulses. If you experience crackling on the optical input or an occasional reluctance to lock, ie provide a sound, investigate as follows.

- Try other fibres.
- Pull the fibre part-way out and see if the problem clears up.
- Try another player or CD player on the optical input.
- Contact Meridian for up-to-date advice on this point.

Sound not clear

- If speech sounds muffled in a system with a centre speaker, check that sound is coming from the centre as there may be a connection problem. In a digital or Meridian feed to the centre you may have set it up to be right instead of left so that it is playing a subwoofer signal.
- If speech sounds muffled in a system with no centre speaker, you may have selected a layout that expects one. See *To specify the speaker layout*, page 89.

Centre not working

There may be a connection problem.

- In a digital or Meridian feed to the centre, you may have set it up to be right instead of left, and therefore it may be playing a subwoofer signal.

There is a hiss when starting DTS LaserDiscs

The DTS audio stream is indistinguishable from a PCM audio stream; the 568.2 takes 30ms to identify the encoding, during which a hiss is heard.

- With non-video DTS sources you can add a 30ms delay to avoid this.
- With video sources you can create a DTS-only source to avoid any hiss.

The preset changes unexpectedly with a multi-channel source

If you are using a non-Meridian source on the MHR Smart Link input, proprietary data may cause preset switching.

- Select **Force this source to be six-channel** for the source.
See *To set the advanced source options*, page 96.

Cinema preset is not available

Because the Cinema preset is a user preset based on Discrete it is possible to delete it.

- Create a new preset from Discrete and name it **Cinema**.
- Assign it to Movie 6 for the enhanced source.

Video problems

Poor picture quality

Picture quality may suffer if you do not attend to the following:

- Are you using suitable quality cables with good connectors?
- Is there a ground loop created between any of the components connected to the 568.2?

Remember that reception of broadcast or cable signals can be significantly deteriorated by cross-modulation in the RF domain.

It is unwise to attempt to cascade and mix several video sources, eg LaserDisc, VCR, etc, to an antenna system.

Meridian Configuration program problems

Preset options do not appear or are not available

The options available when you are editing the DSP preset parameters depend on the speaker layout you have defined in **Speakers**.

- If you have any DSP speakers in the layout, treble and bass are not available.
- The **Speakers** options for **Centre**, **Sides**, and **Rears** can only be edited if your layout includes the corresponding speakers.

Meridian Configuration program repeatedly fails to talk to the product

- Check that you have selected a COM port.
- Check that no other program currently running is using the COM port.
- Check that it is connected correctly.
- Turn off the 568.2 for a few seconds and turn back on, then retry.
- Quit from all other programs and retry.
- Reboot the computer and retry.
- Ensure you are using the serial lead supplied with the product, or a null modem cable.
- If you are using a laptop try turning off the screensaver or power management software.

Service and guarantee

Service

The Meridian 500 Series of hi-fi components have been carefully designed to give years of untroubled service. There are no user-serviceable parts inside the case, nor do the units require any form of maintenance.

In the unlikely event that your 568.2 fails to function correctly, it should be returned, in its original packaging, to your Meridian dealer.

In case of difficulty within the UK or USA please contact the appropriate sales and service address shown on page ii.

In case of difficulty outside the UK or USA, contact the importing agent for the territory. A list of Meridian agents abroad is available from Meridian Audio.

No responsibility can be accepted for the 568.2 whilst in transit to the factory or an agent, and customers are therefore advised to insure the unit. When seeking service under guarantee, proof of the date of purchase will be required.

Guarantee

The 568.2 Digital Surround Processor is guaranteed against defects in material and workmanship for two years from the date of purchase.

The guarantee is void if the 568.2 Digital Surround Processor has been subject to misuse, accident, or negligence, or has been tampered with or modified in any way without the written authorisation of Meridian Audio Limited. **Note:** Connecting anything other than the correct network lead to the COMMS sockets may cause damage to the 568.2 Digital Surround Processor which will not be covered by this guarantee. Attempted servicing by unauthorised people may also invalidate this guarantee. Labour and carriage charges are not covered unless by local agreement.

Outside the UK, local warranty liability is restricted to equipment purchased within the territory. Our agents abroad are only under contractual obligation to service under guarantee equipment sold through them. They are entitled to make a non-refundable charge for any service carried out on other equipment.

This guarantee does not limit your statutory rights within the United Kingdom.

Glossary

Absolute phase

A control which changes the phase of the signals to all the speakers.

AC-3

An alternative name for the Dolby Digital format.

Ambisonics

A music encoding and decoding system designed to re-create the original sound field using an array of loudspeakers.

Aspect ratio

The overall shape of the speaker layout.

Compress

A DSP parameter providing dynamic range control for Dolby Digital sources.

Controller

The product in a Meridian system that uses the infra-red signals from the remote to control the system. The controller is normally chosen automatically, but the installer can override this.

Dolby Digital

A digital surround-sound which provides five full-frequency range channels (left, centre, right, left surround, and right surround) and an additional Low Frequency Effects (LFE) channel which is band limited to 120Hz.

Dolby Surround

The encoding system used for the majority of movies on video and many TV broadcasts. Dolby Surround encoded material can be replayed with a surround decoder connected to an array of loudspeakers which normally include at least left, centre, right, and rear surround.

DTS

Digital Theatre Systems originally produced digital audio tracks for motion pictures. A version of this format adapted for consumer video and audio products is referred to as DTS Entertainment. Like Dolby Digital it provides five full-frequency range channels (left, centre, right, left surround, and right surround) and an additional Low Frequency Effects (LFE) channel.

DVD

Digital Video Disc or Digital Versatile Disc, a versatile CD-sized disc with nearly 30 times the storage capacity of CD. It is capable of storing digital video, high-quality multi-channel audio, or computer data.

DVD-Audio

A DVD disc containing audio tracks in one or more of a number of alternative formats to provide higher quality or higher capacity than CD, multi-channel audio, together with the option of still images or video. A DVD-Audio disc may also include lower quality versions of the material in DVD-Video format for compatibility with players that do not support DVD-Audio.

DVD-Video

A DVD containing video tracks together with one or more soundtracks, menus, and other entertainment features.

Layout

Refers to a particular arrangement of speakers and subwoofers. You can select different layouts for the cinema, music, and 5.1 DSP presets.

LFE

The Low Frequency Effects (LFE) channel which enhances movie soundtracks with sound effects and ambient sounds. It is band limited to 120Hz in a Dolby Digital system.

LFE sub

A subwoofer which plays the full 120Hz bandwidth LFE signal in Dolby Digital, DTS, and MPEG presets.

Limit

A DSP parameter that sets the peak-level limit of the bass signal added to the main loudspeakers.

Max SPL

A DSP parameter that sets the peak-level limit for the LFE channel.

Menus

The flexible system for choosing options and configuring settings in Meridian products. On the 568.2 the menus are controlled by the ◀ ▶, ▲, and ▼ keys on the MSR.

MHR

Meridian High Resolution is a proprietary secure encoding format using encryption and anti-copy methods that allows secure transfer of audio streams between elements of a Meridian-only system for the purpose of playback only. It provides a secure copyright protection environment and has the very important benefit of lowering jitter and improving sound quality on all material.

MLP

MLP (Meridian Lossless Packing) is an audio format that increases the amount of information that can be recorded on a CD or DVD, without any loss of quality.

Mono sub

A subwoofer which handles all the bass for the system. A THX standard subwoofer has a crossover at 80Hz.

Mono surrounds

Surrounds which have a common signal steered to them. This may then be decorrelated by the THX process to give more spaciousness.

MPEG

MPEG Surround is a digital encoding system developed by the Motion Picture Expert Group. Like Dolby Digital it provides five full-frequency range channels and an additional Low Frequency Effects (LFE) channel.

MSF

Meridian Settings File, a file containing settings and User Types for one or more Meridian products.

MSR

The Meridian System Remote, or handset.

OSD

On-Screen Display, which the 568.2 can superimpose on a composite video signal to give information about the state of the system, and to help during configuration.

PCM

Pulse Code Modulation, the method used to encode music digitally, as used on audio CDs.

Preset

A DSP decoding option in the 568.2. You can create user-defined presets based on the built-in presets, and with specific parameter values; see *Defining your own presets*, page 23.

Smart Link

A six-channel digital audio stream that can connect the 568.2 Digital Surround Processor to a multi-channel source, such as the Meridian 598 DVD Player. The Smart Link also provides intelligent stream content information.

Source

An input to the system, such as CD or TV. The Meridian 500 and 800 Series provide 12 named sources, corresponding to the names of the 12 source keys on the MSR. In the 568.2 you can choose the logo displayed for each source, and the input used for it.

SPL

Sound Pressure Level, a physical measurement of the level of sound at a particular location which can be obtained using an SPL meter.

Steered surrounds

Surrounds which have individual signals steered to them by the digital surround processor's steering matrix.

Surround

A sound reproducing system with more than two loudspeakers, and usually with speakers behind or to the side of the listener.

THX

Additional processing that follows Dolby Pro Logic Surround decoding to give a more faithful reproduction of cinema sound in the home.

Trifield

A music decoding system designed to extract centre and surround signals from a conventional two-channel stereo source.

Type

A standard configuration of the digital surround processor. Selecting a Type resets any configuration and calibration changes.

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