installation guide

Meridian 565 Digital Surround Processor

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Introduction

The Meridian 565 Digital Surround Processor is unique in being the first completely digital surround-sound processor, and it defines the standard for both music and cinema performance. To achieve this we have combined the latest techniques in high-precision analogue electronics and digital signal processing with a careful analysis of all types of recorded music. The result is a system that produces impressively realistic and exciting reproduction of music and cinema sound with support for all the current two-channel and multi-channel audio formats. These include PCM, Dolby Digital (AC-3), DTS, and MPEG, as well as support for several proprietary processing modes. MLP (Meridian Lossless Packing) format is also available as an optional extra.

This *Installation Guide* explains how to set up the digital surround processor to give the best results with a wide variety of different system configurations. Once you have set up the 565, or if it has been set up for you by your dealer, refer to the *Meridian 565 Digital Surround Processor User Guide* for information about using the 565, and getting superb results from all your music and cinema recordings.

Planning a system

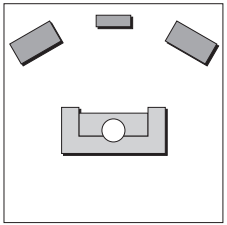
Before unpacking and setting up your digital surround processor it is worth spending a little time planning how to set up the speakers, and the other components of your hi-fi system, so that they will give the best results when used in conjunction with the 565.

The digital surround processor can be configured to work with a wide range of different speaker layouts. These include combinations of a centre speaker, up to four surround speakers, and up to three subwoofers, with the main left and right speakers.

The following pages show some of the speaker layouts particularly recommended for use with the digital surround processor. For more information about these and the other layout options see *Specifying the speaker layout*, page 22.

When you are playing a 5.1 source the digital surround processor will choose the appropriate decoding for the layout you are using.

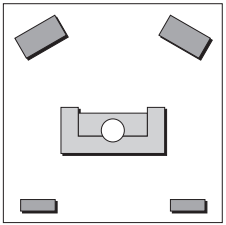
Three-channel surround system (Layout G or L, No Surrounds)



Adding a centre speaker is the most significant step you can take to upgrade a two-speaker system, whether you are using the system for cinema, music, or a combination of the two. It reinforces the central image, and allows the left and right speakers to be further apart for a wider soundstage. This gives a more realistic and stable three-dimensional image of the original recorded sound, for outstanding music and cinema reproduction.

The centre speaker needs to be of equivalent quality, and tonally matched, to the main left and right speakers. It should also have good power handling as it regularly plays louder than the left and right speakers. The ideal position is at the same height as the left and right speakers, and above the TV in a home cinema system.

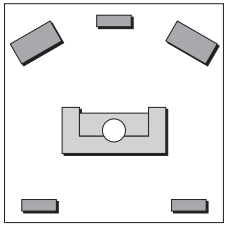
Four-channel surround system (Layout M, 2 Surrounds)



If you are primarily interested in home cinema you may prefer to extend an existing stereo system by adding a pair of rear surround speakers, for cinema effects and ambient sounds.

For cinema the surround speakers do not take a huge strain, so small units can be used such as in-wall or bookshelf-mounted speakers. For 5.1 or Ambisonic reproduction, the rear speakers should be capable of reproducing the full frequency range, and should ideally be the same as the front speakers.

Five-channel surround system (Layout G, 2 Surrounds)

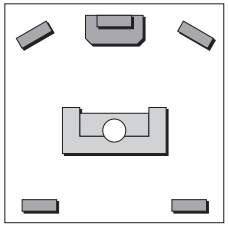


Our recommended surround system for music and cinema uses five speakers, with the main left and right speakers providing the bass. This gives a very natural sound for music listening, and a precise three-dimensional image combined with good bass performance for cinema.

If you also have a mono subwoofer available you can choose to use this for the cinema presets, to enhance cinema effects without affecting the quality of music from your system (Layout AG). This is a good compromise if your primary interest is music, and you want the benefit of enhanced bass performance for films.

Alternatively, you can choose to use the subwoofer for the Dolby Digital LFE channel; see *To select a 5.1 LFE subwoofer*, page 27.

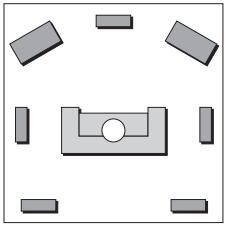
THX system (Layout A)



If your primary interest is cinema, you can use a mono subwoofer to enhance the bass performance for both cinema and music presets.

This is the configuration recommended by Dolby and THX for use with Pro Logic, and is a good choice if you want to enhance the bass from the main left and right speakers, or your room is large.

Seven-channel surround system (Layout G, 4 Surrounds)



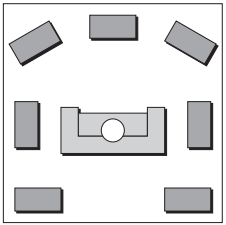
The digital surround processor allows you to add side surround speakers, to enhance the effect of the rear surrounds in home cinema reproduction. This gives a more realistic portrayal of special effects, such as a plane flying overhead from front to back.

For music reproduction, and in particular music using Ambisonic encoding, the side surrounds allow an even more faithful recreation of the original sound field.

The side surround speakers should be positioned on the side walls level with the listening position.

If your main speakers have a limited bass response you can benefit from a mono subwoofer (Layout A, 4 Surrounds).

Surround system with full-range speakers (Layout L)



A system designed for very serious music listening should use five or seven full-range speakers, with good bass performance, to recreate the original low frequency ambience and give the correct energy balance at low frequencies.

A recommended configuration, for the ultimate in music and cinema surround sound, consists of two Meridian DSP6000 Digital Loudspeakers, a DSP6000C Digital Centre Loudspeaker, and four DSP5000 or DSP5500 Digital Loudspeakers.

Using the 565 with Meridian DSP Loudspeakers

Meridian systems will often contain two or more units that can be controlled by the Meridian System Remote infra-red remote control. The Meridian 500 Series avoids conflicts in such a situation by designating one of the units as the controller for the system, and making all the other units receive their instructions from the controller via a special communications cable.

If your surround installation includes one or more Meridian DSP Loudspeakers, such as the DSP5000, DSP5500, or DSP6000, we recommend you make one of the digital speakers the controller for the system. This way you will be able to give commands to all the 500 Series units connected to the system simply by pointing the Meridian System Remote at the specified speaker. Generally you would choose the speaker that has the best infra-red path from the listening position, typically the centre speaker.

Planning sources

The 565 provides three audio inputs: analogue, digital-cable, and digital-optical. These inputs will allow you to set up a surround system with the following sources, without the need for an additional preamplifier:

- ❍ CD or DVD connected to the digital-cable input.
- ❍ TV connected to the analogue input.
- ❍ LaserDisc, connected to the digital-optical input.

Using a Digital Control Unit

For greatest flexibility, and optimal performance, the 565 should be used in conjunction with the Meridian 562 or 562V Digital Control Unit. In this case all the source selection and switching is performed by the Digital Control Unit. The 562 and 562V Digital Control Units provide an on-board analogue to digital converter, allowing up to seven analogue sources to be connected to the 565, each with adjustable sensitivity, combined with up to seven digital sources to provide a pure digital feed to the 565.

Using an analogue preamplifier

Alternatively, the 565 can be used in conjunction with an analogue preamplifier, such as the 501 or 501V Control Unit, connected to the 565 analogue input. In this case digital sources, such as a LaserDisc or CD, should be connected directly to the appropriate 565 digital inputs. The 501 and 501V Control Units allow up to six analogue sources to be connected to the 565, each with adjustable sensitivity.

Using a LaserDisc player

Some early LaserDiscs are recorded with analogue soundtracks, or provide different information on the analogue and digital soundtracks, so to take advantage of these you will need to connect a LaserDisc player to both a digital and an analogue input.

If you have a 7.1 version of the 565 you can take advantage of Dolby Digital LaserDiscs by connecting the LaserDisc player to the 565 via a 519 Demodulator; see *To connect to a 519 Demodulator*, page 15.

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 processor, 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 you 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 565 Digital Surround Processor.
- ❍ Power cord.
- ❍ 500 Series communications lead.
- ❍ Digital-audio cable.
- ❍ This manual.
- ❍ The *Meridian 565 Digital Surround Processor User Guide*.

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.

To position the digital surround processor

Do not place 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.
- ❍ Near strong magnetic radiation, such as a near a power amplifier.
- ❍ Near to a television, or where connecting cables may be subject to or cause interference.

To avoid overheating ensure that air can flow through the cooling slots on the base and rear panel.

Radio interference

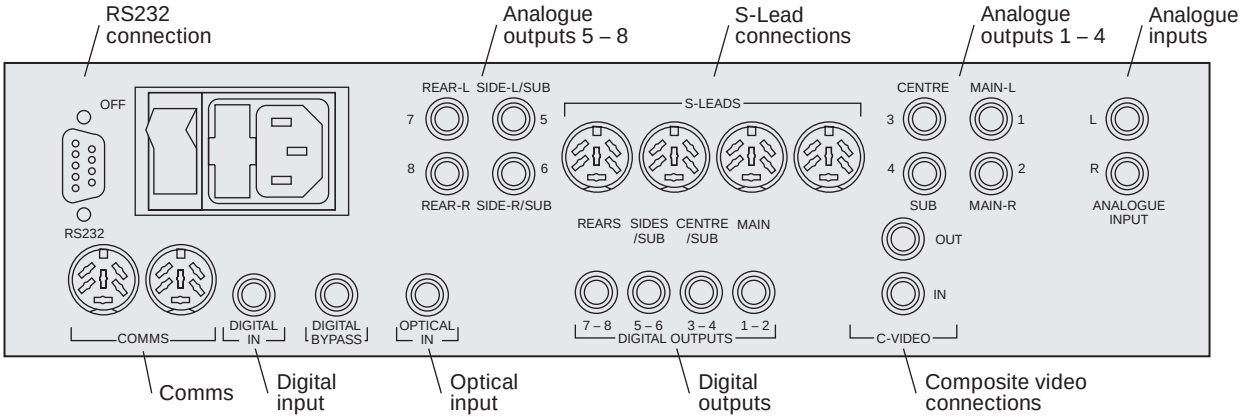
FCC Warning: This equipment generates and can radiate radio frequency energy and if not installed and used correctly in accordance with our instructions may cause interference to radio communications or radio and television reception. It has been type-tested and complies with the limits set out in Subpart 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.

CE

Connecting the digital surround processor

Rear panel



Video connections

The table opposite gives details of the two video connections.

To take advantage of the on-screen display both these connections must be made.

Use this connection	*To connect to this*
C-VIDEO IN	The composite video output from a video recorder or LaserDisc player, 562V, or 501V.
C-VIDEO OUT	The composite video input of a television or monitor.

Audio inputs

The following table gives details of the three audio inputs:

Use this input	*To connect to this*
ANALOGUE INPUT L and R	An analogue source such as a TV, video recorder, radio tuner, or analogue preamplifier.
DIGITAL IN	A digital source, such as the 562 or 562V Digital Control Unit, or a CD player.
OPTICAL IN	A digital-optical source, such as a LaserDisc player, the 519 Demodulator, or a CD player with no digital-cable output.

Audio outputs

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

Use this output	*To connect to this*
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 an analogue speaker, in conjunction with a suitable power amplifier, connect the input of the power amplifier to the appropriate analogue output.

You specify whether you are using the digital or analogue output for each channel in the Speaker Set configuration option; see *Setting up the speaker outputs*, page 28. Note that you should always leave the unused analogue or digital output for each channel unconnected.

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

The digital connections should be made with high-quality 75Ω screened cable. Suitable cables are available from Meridian. We do not recommend using analogue 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.

Communications connections

The following table gives details of the communications connections:

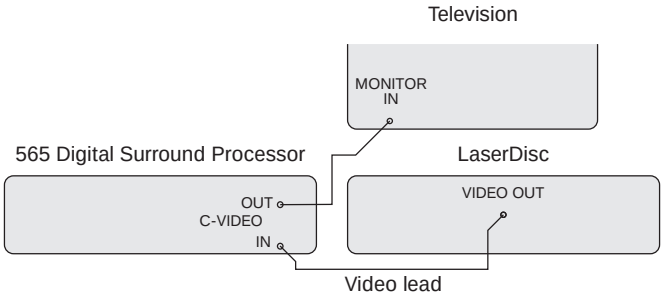
Use this connection	*To connect to this*
COMMS	Other Meridian 500 Series equipment, and the master digital speaker.
S-LEADS	To distribute the S-lead connections from the master digital speaker to other slave digital speakers.

RS232 connection

The RS232 connection is for future expansion, to allow the 565 to be interfaced to a computer. Contact your dealer for more information.

Connecting video

On-screen display

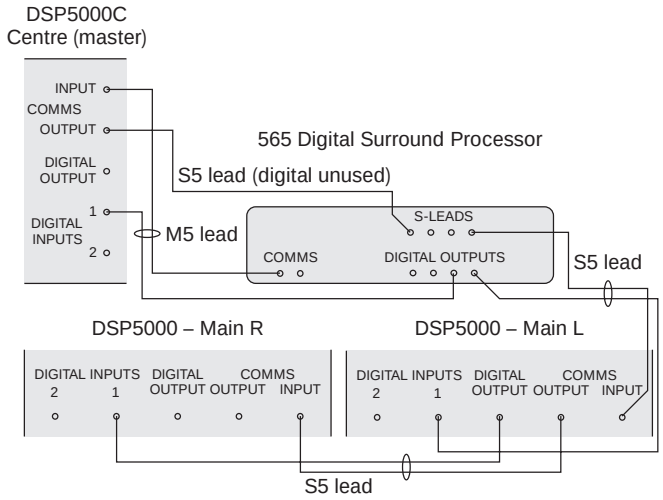


If your surround system includes a television the 565 can add a text overlay to the video signal, to provide additional information about its operation in the form of a textual on-screen display (OSD). In normal operation this repeats the information provided on the 565 front panel display. During calibration the on-screen display provides additional guidelines to help you perform the calibration sequence.

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 565 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 (eg DSP5000)



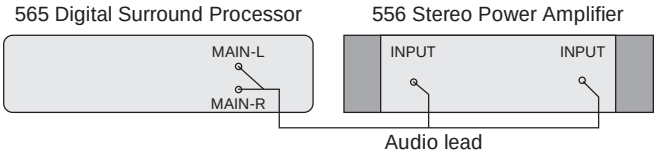
- Use the comms part of an M5 lead to connect one of the COMMS sockets on the 565 to the digital speaker you have chosen as the master (typically the centre speaker).
- Use the audio part of the M5 lead to connect the digital speaker to the appropriate 565 digital output.
- If your system includes more than two Meridian DSP Loudspeakers, use an S5 lead to bring back the COMMS output from the master digital speaker, and connect it to one of the S-LEAD sockets on the 565.
- Link all the other digital speakers together using S5 leads, as shown in the illustration. The other S-LEAD sockets on the back of the 565 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.

To connect to Meridian Active Loudspeakers

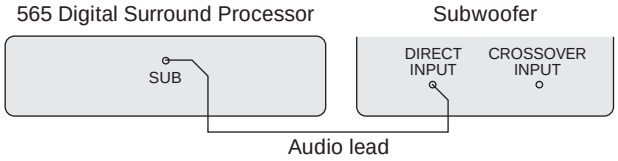
- Connect the appropriate outputs from the digital surround processor to the speaker inputs, using screened audio cable.

To connect to a 556 or 557 Stereo Power Amplifier or other power amplifier



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

To connect an M2500 Active Subwoofer



- Connect the SUB output from the digital surround processor to the subwoofer's line level input.

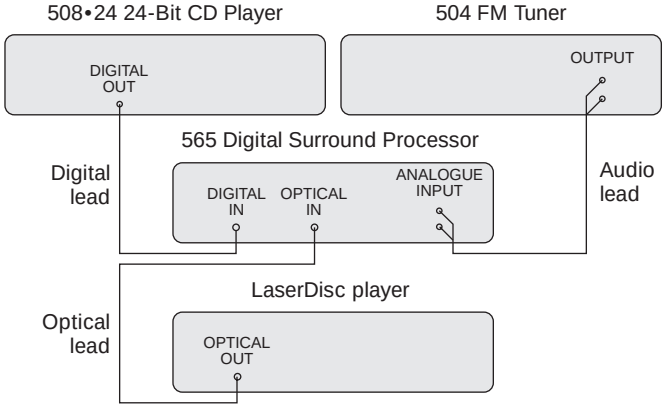
The digital surround processor provides very high-quality crossovers for the subwoofer. For best results you should remove or disable any crossover in the subwoofer, and set the digital surround processor to Sub Narrow. If you cannot bypass the subwoofer crossover set it to its highest setting (eg 200Hz), or set the digital surround processor to Sub Wide to switch off the digital surround processor's crossover. For more information see *Setting up the speaker outputs*, page 28.

If you are using an M2500 use the L+ input and configure it for Bypass and Maximum gain; refer to the M2500 user guide for more information.

Connecting sources

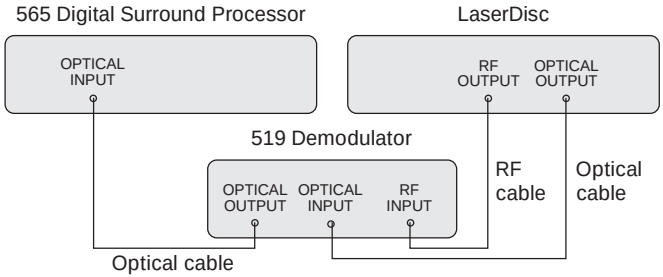
To use the digital surround processor as a preamplifier

You can connect one analogue, one digital, and one optical source to the 565 without needing a separate preamplifier.



- Connect the analogue source to the 565 ANALOGUE INPUT using a standard phono cable.
- Connect the digital source to the 565 DIGITAL IN socket, using a high-quality digital phono cable.
- Connect the optical source to the 565 OPTICAL IN, using an optical cable.

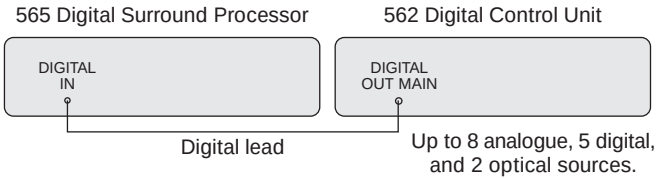
To connect to a 519 Demodulator



- 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.
- Connect the 519 output to the 565 OPTICAL IN using an optical cable.

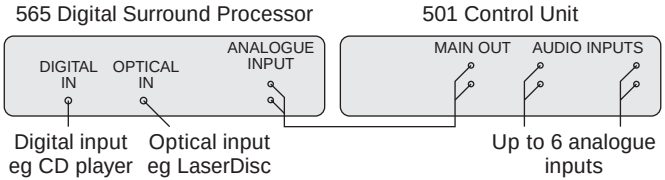
If you are using the 565 with a 562/562V Digital Control Unit connect the 519 to the 562/562V optical input, instead of to the 565.

To connect to a 562 or 562V Digital Control Unit



- Connect the main digital output of the 562 or 562V to the 565 DIGITAL IN, using high-quality 75Ω screened cable.
- Connect all the analogue and digital sources you want to use 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 565 to a 562 Type option; see *565 standard settings*, page 21.

To connect to a 501 or 501V Control Unit or other preamplifier



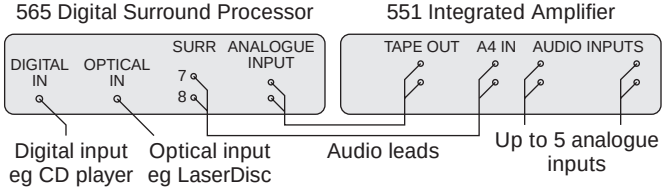
- Connect the main analogue output of the preamplifier to the 565 ANALOGUE INPUT, using high-quality screened cable.
- Connect analogue sources to the preamplifier.
- In addition, connect any digital and optical source directly to the 565.

For example, if your CD player provides both an analogue output and digital output, you will get better performance by connecting the digital output directly to the 565.

- If you are using a 501/501V configure it to Type 1 and set the volume control option to Fout (fixed output).

To use the digital surround processor with a 551 Integrated Amplifier

The 551 Integrated Amplifier provides an ideal companion to the digital surround processor because its preamplifier section can be used to supply up to five analogue sources, with the power amplifier section used to drive one pair of speakers.



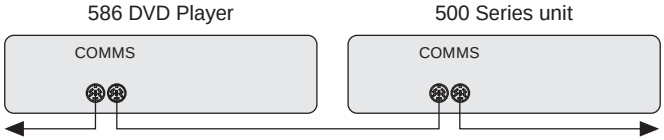
- Connect the 551 tape output to the 565 ANALOGUE INPUT, using a pair of phono leads.
- Connect the two analogue outputs from the 565 that you want to use to the tape input (A4) of the 551.
- Connect one digital input, such as CD, and one optical input, such as LaserDisc, directly to the 565.
- Configure the 551 to Type 9.

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 digital surround processor to one of the COMMS sockets on another 500 Series unit, using the 500 comms lead provided with the 565 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:

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

This is the unit that will respond to the remote.

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

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 standard settings*, page 20.

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

Configuring the digital surround processor

This chapter explains how to configure the digital surround processor to suit the speaker arrangement you want to use, and the other equipment in your system.

The first stage in configuring the digital surround processor is to choose one of the standard Type settings, which are designed to set most of the parameters to typical values.

The next stage is to configure the 565 for those aspects of your layout that differ from the standard setting you chose.

The third stage is then to set up the speaker outputs, and adjust the delay of each output to time-align the system. These three stages are described in detail in the following sections.

Choosing standard settings

The digital surround processor provides 12 alternative standard settings, called Types, which configure all aspects of the 565 into the six most commonly needed configurations.

Choosing one of the 12 standard settings overrides any other configuration you may have performed, and so can be used to reset the configuration of the unit.

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

- ❍ Whether you are using the digital surround processor on its own, or in conjunction with a 562/562V Digital Control Unit.
- ❍ Whether one or more Meridian DSP Loudspeakers are included in the system.
- ❍ Whether you are using the earlier Meridian 200 Series units.

The Type you should choose is shown in the table on the opposite page.

Note that you cannot use the digital surround processor with the Meridian 601, or with both 200 Series units and a Meridian DSP Loudspeaker.

To select a standard setting

- Switch off any power amplifiers that are connected to the 565 and put any digital speakers to standby.
- Switch off the 565, using the power switch on the back panel.
- Switch on the power again while holding down the **Off** key on the front panel.

After a short delay the display will show:

- Press ▲ or ▼ on the front panel to change the Type number.

For example, if you select Type 3 the display shows:

- Wait for one second, and then switch off the 565 using the power switch on the back panel.
- Switch on again to use the standard settings you have selected.

565 standard settings

The following table shows the options configured by Types 0 to 5 on the digital surround processor:

Type	*Speakers*	*Mode*
0	All analogue (Layout AG)	500
1	All analogue (Layout A)	500
2	All analogue (Layout A)	200
3	All Meridian DSP (Layout G)	500
4	Meridian DSP L, R, and Centre, analogue surrounds (Layout G)	500
5	Meridian DSP centre, otherwise analogue (Layout A)	500

Types 0 to 5 configure all the sources, except for CD, CDR, and LD, to use the 565 analogue input. These are ideal for using the 565 on its own or with an analogue preamplifier, such as the 501/501V Control Unit.

A second set of six types, referred to as Type 0 562 to Type 5 562, are identical to Type 0 to 5 but configure all the sources to use the 565 digital input. These are intended for use with a 562/562V Digital Control Unit.

If none of the standard settings exactly matches your requirements choose the one that is closest, and then make the necessary changes to the appropriate parameters as described in the following sections of this chapter.

Specifying the speaker layout

When you reset the digital surround processor to one of the standard settings an appropriate speaker layout is selected based on the Type number you have chosen, as shown on the previous page.

In most cases you will then need to set the speaker layout explicitly, according to the particular arrangement of speakers in your system.

The speaker layout determines:

- How the eight analogue or digital outputs are assigned to the different speakers in the layout.
- Whether the bass is to be handled by the main speakers, or by one or more subwoofers.

The digital surround processor provides 15 alternative layouts, identified by a single letter A–N and the pairs AB and AG.

The table on the next page shows the complete set of alternative layouts, and you may find it useful to choose the appropriate layout from these tables in conjunction with the illustrations in the section *Planning a system*, page 12.

How to use the table of speaker layouts

Choose the appropriate row in the table depending on the size of your main speakers, the size of your centre speaker (if present), and the way you want to use any subwoofers in your system.

Each entry shows the size or position of the corresponding speaker(s), followed in brackets by the number of the 565 output they should be connected to.

Large main speakers

If your main left and right speakers are large, with good bass performance, and you want to use them for full range reproduction, choose one of the layouts in the upper half of the table. We recommend these options for Meridian DSP loudspeakers.

Then select the appropriate section of the table depending on whether you have no centre speaker, a small centre speaker (eg DSP5000C), or a large centre speaker (eg DSP5500C).

If you have a subwoofer you can use it to augment the bass from the centre channel (Layouts B or H). If the subwoofer is not very high quality we recommend using it only for the cinema presets, and not for music (Layouts AB or AG).

With Dolby Digital sources an additional option is to use the subwoofer for the LFE channel.

Small main speakers

If your main left and right speakers are small and do not have a good bass response, or your room is large, you can use one or more subwoofers to handle the bass for the system by selecting one of the layouts in the lower half of the table.

All the layouts include at least one subwoofer. If there is only one subwoofer this provides mono bass for all the channels.

If you have two subwoofers you have a choice of using them for mono and surround (Layout J), left and right (Layout K), or left+right and centre (Layout F).

Surrounds

All the layouts allow you to add up to two rear surrounds. If you do not have rear surrounds, set No Surrounds in Config. If you have only one rear surround connect it to output 8 and set 1 Surround in Config.

Many of the layouts also allow you to add up to two side surrounds. To use side surrounds in a layout that supports them set 4 Surrounds in Config. For more information see *To specify the number of surround speakers*, page 26.

Speaker layouts

Main	*Centre*	*Subwoofers*	*Sides*	*Rear*	*Layout*
Large (1, 2)	None	None	Optional (5, 6)	Optional (7, 8)	M
	Small (3)	None	Optional (5, 6)	Optional (7, 8)	G
		Centre (4)	Optional (5, 6)	Optional (7, 8)	B
		Centre (4) cinema presets only	Optional (5, 6)	Optional (7, 8)	AB
		Mono (4) cinema presets only	Optional (5, 6)	Optional (7, 8)	AG
		Centre (4), Surround (5)	No	Optional (7, 8)	H
	Large (3)	None	Optional (5, 6)	Optional (7, 8)	L
		Mono (4)	Optional (5, 6)	Optional (7, 8)	N
Small (1, 2)	None	Mono (4)	Optional (5, 6)	Optional (7, 8)	D
		Left (5), Right (6)	No	Optional (7, 8)	C
	Small (3)	Mono (4)	Optional (5, 6)	Optional (7, 8)	A
		Mono (4), Surround (5)	No	Optional (7, 8)	J
		Left (5), Right (6)	No	Optional (7, 8)	K
		Centre (4), Left (5), Right (6)	No	Optional (7, 8)	E

To set the speaker layout

- Switch off the 565, using the power switch on the back panel.
- Switch off any power amplifiers that are connected to the 565.
- Switch on the power again while holding down the **Display** key on the front panel.

The display will show:

- Press ▶ or ◀ until you see the display:

- Press ▲ or ▼ to step between the alternative layout options.

When you have chosen the layout you want to use proceed to the next step.

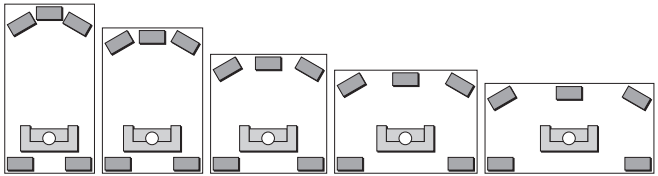
To define the shape of the speaker layout

In some of the DSP programmes the digital surround processor makes use of information about the shape of your speaker layout, or aspect ratio.

- Press ▶ or ◀ until you see the display:

- Measure the distances between the speakers in your room and calculate the aspect ratio, as follows:

$$\textit{aspect ratio} = \frac{\textit{centre - surround depth}}{\textit{left - right width}}$$



- Use the ▲ and ▼ keys to select the nearest aspect ratio.

If your layout has an aspect ratio greater than 2 or less than 0.5 you should consider changing the speaker positions for optimum sound.

To specify the number of surround speakers

- Press ▶ or ◀ until you see a display such as:

- Press ▲ or ▼ to step between the following options:

Option	*What it means*
No Surrounds	No rear speakers.
1 Surround	One centre rear speaker (should be connected to REAR-R).
2 Surrounds	L and R surround speakers; eg a THX system.
4 Surrounds	L and R rear and side speakers.

To specify the type of the surround speakers

- Press ▶ or ◀ until you see a display such as:

- Press ▲ or ▼ to select Small if the rear surround speakers have limited bass handling (eg bookshelf speakers), or Large if they have full bass handling (eg Meridian DSP loudspeakers).

If you have side surround speakers, an additional Side option allows you to set the type of side speakers in the same way.

To select a 5.1 LFE subwoofer

If you have the 7.1 version of the 565 you can add an LFE subwoofer to layouts that do not normally have one (such as G, L, or M), or choose an LFE subwoofer instead of a mono subwoofer in layouts that have a subwoofer (such as A).

- Press ▶ or ◀ until you see a display such as:

- Press ▲ or ▼ to change the 5.1 Sub option.

With layouts with no subwoofer the choice is between No 5.1 Sub or LFE 5.1 Sub. For layouts with one or more subwoofers you can choose between Mono 5.1 Sub, to give a standard THX 80Hz crossover, or LFE 5.1 Sub, to give an 120Hz crossover.

To set other configuration options

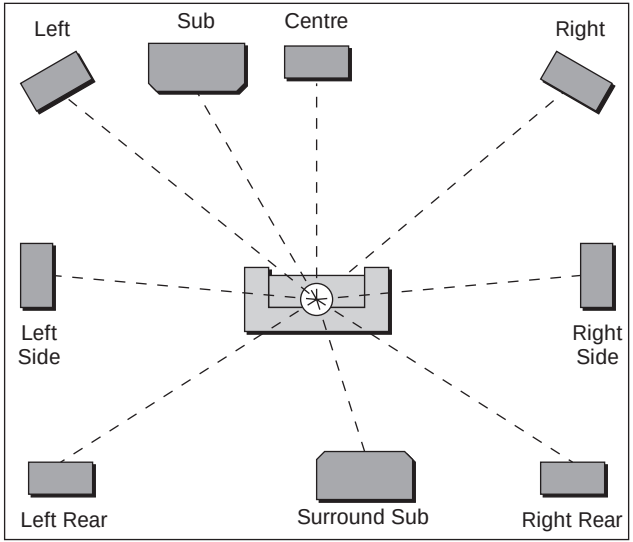
The other configuration options are generally set to an appropriate value when you reset the 565 to one of the standard settings, and you should not normally need to alter them; see *Choosing standard settings*, page 20.

These options are summarised in the table opposite for advanced use:

Option	*Initial value*
Crossover frequency	
24 Bit Upgrade	
Communications mode (500 Comms or 200 Comms)	
Controller mode (Auto Setup, Controller, or Not Con.)	
System address (1–8)	
Product address (1–8)	
Volume mode (Main Volume or 2nd Volume)	
Front panel volume (N or Y)	

Setting up the speaker outputs

The next stage in configuring the 565 is to specify information about each of the speakers in your layout, and adjust their delays to time-align the system so that sounds are coincident when they arrive at the listening position.



To time-align the system

Before setting up the speaker outputs you need to measure the distance, in cm or inches, to each speaker from the listening position.

- As you measure each distance, write it against the appropriate line in the diagram opposite (or a copy of it).

Measure from the ear height at the listening position to the tweeter on each speaker (where applicable).

Then decide which speaker is furthest from the listening position; this distance is referred to as *furthest* below.

To set up a speaker output

- Switch off the 565, using the power switch on the back panel.
- Switch off any power amplifiers that are connected to the 565.
- Switch on the power again while holding down the **Source** key on the front panel.

The display will show:

and then after a short delay:

- Press **Source** to step between the different speakers specified in the layout you have chosen.
- Change the settings for each speaker as described below.

To change the settings for a speaker

- Press **Source** until the name of the speaker output you want to adjust appears.

For example:

If the speaker output does not appear check that you have chosen the correct layout; see *Specifying the speaker layout*, page 22.

To select the output type

- Press ▶ until you see a display such as:

The number specifies the number of the output, and corresponds to the labelling on the analogue or digital outputs on the back panel.

The option specifies the type of speaker you are using, and whether you are using the analogue or digital output connection.

● Use ▲ and ▼ to choose between the following options:

Choose this	*For this type of speaker*
Meridian	A Meridian DSP Loudspeaker such as the DSP5000, DSP5000C, DSP6000, or DSP6000C connected to the appropriate digital output.
Digital	A digital signal for feeding a DAC directly from the appropriate digital output.
Analogue	A power amplifier or active speaker connected to the appropriate analogue output.

To set the output delay

● Press ▶ or ◀ until you see a display such as:

● Using the diagram you completed at the start of this section, calculate the correct delay as follows:

For measurements in inches: $delay = \frac{furthest - distance}{12}$

For measurements in cm: $delay = \frac{furthest - distance}{30}$

where *distance* is the distance to the speaker you are setting up, and *furthest* is the distance to the furthest speaker.

For example, if the main left speaker is 120" (300cm) from the listening position, and the furthest speaker is 180" (450cm) away, set the delay for the main left speaker to +5.0.

Note that when you are setting up the furthest speaker its delay should work out to be zero.

Repeat this for each of the speakers in your layout.

To set up speaker protection for 5.1 sources

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

- Press ▶ or ◀ until you see a display such as:

- Press ▲ or ▼ to specify the volume of bass that the speaker can withstand, according to the table opposite.

A setting of Max corresponds to no protection, and 0 corresponds to full protection.

The following table gives suggested settings for different types of speaker. Generally reflex or active speakers can take a higher score. As a guideline, add 2 for a reflex design.

For Meridian DSP Loudspeakers set Size to Max.

Size of drivers	*1 bass unit*	*2 bass units*	*3 bass units*
6 inch	0	4	8
8 inch	4	10	14
10 inch	8	14	18
12 inch	14	20	24
15 inch	20	26	30

To specify the output precision

If you are using Meridian DSP Loudspeakers set the output precision to 22 bits as follows:

- Press ▶ or ◀ until you see a display such as:

- Press ▲ or ▼ to set the value to 22 bits.

To specify the type of subwoofer

- Press ▶ or ◀ until you see a display such as:

- Press ▲ or ▼ to specify the subwoofer filtering. The options are shown in the following table:

Option	*Description*
Narrow	The digital surround processor provides an 80Hz cutoff; the subwoofer's crossover should be bypassed.
Wide	The subwoofer includes a crossover.

The remaining parameters are set up automatically by the calibration procedure described in the next chapter; see *Calibrating the system*, page 33. They are summarised in the following table for reference.

Option	*Initial value*
Phase (+ or -)	
Gain (-18dB to +6dB for main speakers, -12dB to +12dB for subwoofers)	

Note that Meridian speakers cannot go above 0dB.

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 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. The on-screen display also provides additional text explaining what to do, and these displays are reproduced in the following sections for reference. For information about setting up the on-screen display refer to *Video connections*, page 9.

Each calibration test uses a test signal designed to give the best results. For information about choosing an alternative test signal, or one of the 565 inputs, see *To select a different test signal*, page 44.

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, 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 vertical. You should hold the meter with an outstretched arm to minimise reflections from your body.

To start the calibration procedure

- Put the 565 into standby by pressing the **Off** key.
- Press and hold the front panel **Off** key for at least five seconds.

The display shows:

After a few seconds the display shows:

followed by:

Levels is the name of the first calibration test. For more detailed information about this and the other calibration tests see 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** on the front panel or Meridian System Remote.

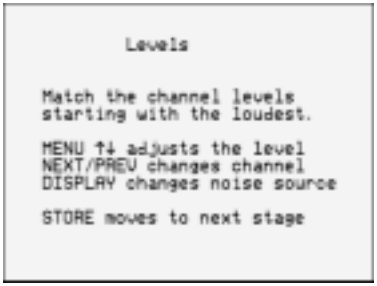
To move between the calibration tests

- Press **Store** on the front panel or Meridian System Remote.

The calibration tests are described in the following sections.

Calibration tests

Levels



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

After a short delay the display shows:

- Use the ▶| and |◀ keys on the Meridian System Remote to move between each of the speakers in the layout in the sequence: left, centre, right, side right, surround right, surround left, side left, and subwoofers.
- Use ▲ and ▼ to adjust the level of the speaker. Ignore any tonal difference.

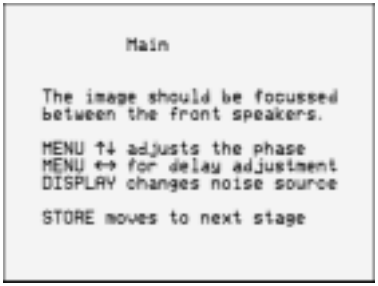
For correct THX reproduction you should adjust each speaker to 75dB SPL using an SPL meter. Even if your speakers are not THX approved this setting is recommended.

Note that 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.

Digital or Meridian outputs cannot be set above 0dB. You will therefore need to reduce the level of louder channels to match them.

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

Main



This test allows you to set the relative phase and the relative delay between the left and right main speakers.

The Low test signal is now presented equally and in phase on just the left and right main speakers; see *Test signals*, page 44, for details of the signals.

● Use ▶ and ◀ to switch between phase and delay.

When setting phase the display shows the absolute phase of the left speaker.

For example:

● Use ▲ and ▼ to change the phase.

Choose the correct setting as follows:

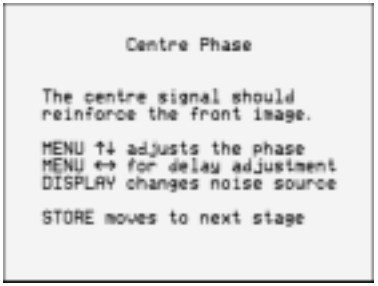
Setting	*What it sounds like*
Correct	A centrally focused sound image which remains stable as you move your head.
Incorrect	An uncomfortable, phasey, diffused image which appears to come from behind you, and which changes dramatically as you move your head.

Unless there is a wiring error in one of the speakers, or an incorrect setting in Speaker Set, the correct setting should be Phs +.

You should not adjust the delay as this has already been specified when you time-aligned the layout.

● Press **Store** to proceed to the next calibration stage.

Centre Phase



As in the previous test, signals are applied to the main left, right, and centre speakers to allow you to adjust the relative phase and delay on the centre channel.

● Use ▶ and ◀ to switch between phase and delay.

When setting phase the display shows the absolute phase of the centre speaker.

For example:

● Use ▲ and ▼ to change the phase.

Choose the correct setting as follows:

Setting	*What it sounds like*
Correct	The centre speaker reinforces the sound.
Incorrect	The sound from the centre cancels some of the image formed by the left and right speakers.

When setting the delay the display shows the relative displacement, in feet, of the centre speaker.

● Use ▲ and ▼ to adjust the delay.

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.

As you increase the delay the centre speaker will appear to move away from you. In practice we usually find that the ideal delay setting is +0.5 more than the value used to time-align the system.

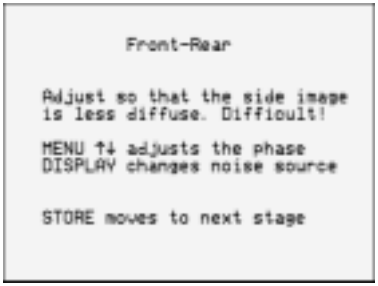
For example, if the original value was +1.0' adjust it to:

This is equivalent to moving the centre speaker $^1/_2$ foot further away from the listener.

You have now calibrated all the front speakers.

● Press **Store** to proceed to the next calibration test.

Front-Rear



This calibration test adjusts the relative phase between the front speakers and the rear surround speakers.

After a short delay the display shows:

● Use ▲ and ▼ to change the phase of the right surround speaker.

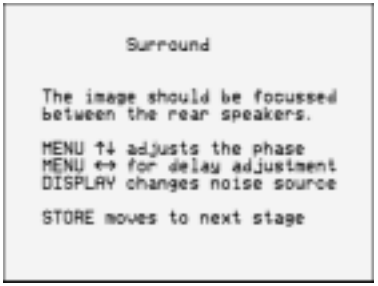
Choose the correct setting as follows:

Setting	*What it sounds like*
Correct	A focused central image between the right front and rear speakers.
Incorrect	A diffuse, phasey image between the two right speakers that changes as you move your head.

This is a difficult setting to adjust, but is particularly important for the Ambisonic and Super Stereo DSP modes.

● Press **Store** to proceed to the next calibration test.

Surround



This test presents the Low test signal through the left and right rear surround speakers to allow you to adjust the relative phase and delay between them.

- Use ▶ and ◀ to switch between phase and delay.

When setting phase the display shows the absolute phase of the left surround speaker.

For example:

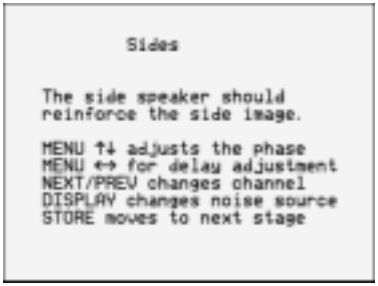
- Use ▲ and ▼ to change the phase of the left surround speaker.

Unless there is a fault in the wiring, the correct setting should be the same phase as you set for the right surround speaker in the previous calibration stage. Confirm that in this position there is a more focused central image between the two surround speakers, as for the Main test.

You should not adjust the delay as this has already been specified when you time-aligned the layout.

If you have subwoofers or side surround speakers in your system press **Store** to proceed to the next calibration stage; otherwise you have completed the calibration of your speakers.

Sides

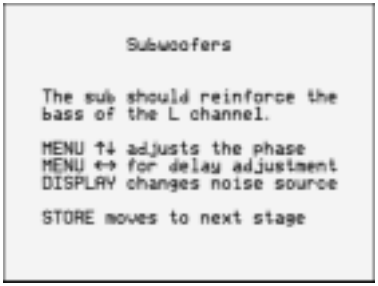


If your layout includes side surround speakers an additional Sides option allows you to adjust the relative phase and delay. Side L presents the signal to the front left, rear left, and side left speakers and you adjust the phase of the side left speaker for reinforcement, as with Centre Phase. Side R repeats the test for the three right speakers.

- Use ▶ or ◀ to switch between phase or delay.
- Use ▲ or ▼ to change the phase.
- Use ▶| or |◀ to switch between Side L and Side R.

You should not adjust the delays as these have already been specified when you time-aligned the layout.

Subwoofers



In this calibration test the Low noise signal is used to allow you to calibrate the phase and delay of each subwoofer in turn relative to another reference speaker. The reference chosen depends on the layout.

- Use ▶ or ◀ to switch between phase or delay.

When adjusting phase the display shows the absolute phase of the subwoofer.

For example:

- Use ▲ and ▼ to change the phase.

Choose the position in which the subwoofer reinforces the sound from the main speakers in the crossover region.

You should not adjust the delay as this has already been specified when you time-aligned the layout.

Other subwoofers

- Press **Store** to adjust any additional subwoofers in the system in exactly the same way. In each case adjust the phase for maximum reinforcement.
- Use ▶| and |◀ to step between the subwoofers.

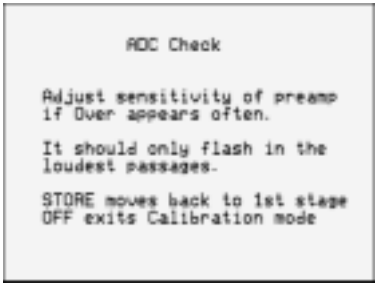
In the case of other configurations you will be balancing different combinations, in some cases the best test is that multiple subwoofers reinforce each other or the bass from wideband speakers like the main left and right (if applicable).

The table opposite lists the combinations and adjustments you may make for the different Layout options; see *Specifying the speaker layout*, page 22.

Layout	*Sounds*	*Adjusting*	*Adjust phase for*
A	L and MS	MS	Crossover reinforce
B	L and CS	CS	Bass adding to L bass
C, K	L and LS	LS	Crossover reinforce
	R and RS	RS	Crossover reinforce
	LS and RS	RS	Bass reinforcing check
D	L and MS	MS	Crossover reinforce
E	L and CS	CS	Bass adding to L bass
	LS and CS	CS	Bass adding to LS
	LS and RS	RS	Bass reinforcing check
F	L and LRS	LRS	Crossover reinforce
	LRS and CS	CS	Bass adding to LRS
H, J	L and CS	CS	Bass adding to L bass
	CS and SS	SS	Bass adding to CS

Key: L=Main Left, R=Main Right, MS=Mono Sub, CS=Centre Sub, LS=Left Sub, RS=Right Sub, LRS=Left+Right Sub, SS=Surround Sub.

ADC Check



This test provides metering to help you set the level of the analogue inputs. The analogue-to-digital converter (ADC) fitted for the analogue input to the 565 has a sensitivity of 2V rms for full scale. With this setting, the analogue input can be connected to the output of a LaserDisc or CD player and will not require adjustment. If the analogue signal comes from a preamplifier or control unit, then it is important to ensure that the internal ADC is not overloaded.

In this calibration test the display shows:

The digital surround processor selects its analogue input, and replays the signal through the speakers.

The display shows when the input level comes within 3dB of full scale:

Play any analogue source, or sources connected via an ancillary preamplifier or switchbox, choosing the loudest material. The input signal level should be adjusted so that the Over display hardly ever occurs.

What next?

Congratulations – your 565 Digital Sound Processor is now set up and ready for use. Refer to the user's guide for information about using the digital surround processor with your music and cinema sources.

The remaining chapters in this guide give more advanced information about configuring the digital surround processor's sources, and further reference and troubleshooting information.

Test signals

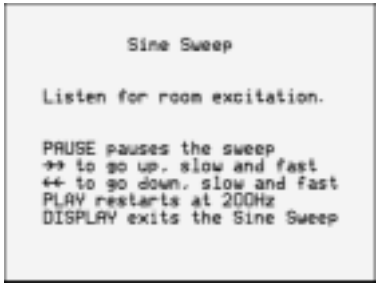
In Calibration you can make adjustments using a number of different signals, shown in the table below. Normally the 565 selects the most appropriate signal for the test.

Signal	*Description*
High	Continuous ‘pink’ noise, band-limited 500Hz–2kHz.
Low	Continuous ‘pink’ noise, band-limited 20Hz–80Hz.
Digital In Optical In Analogue In	Any signal applied to the appropriate input is combined to mono (L+R) and then used to supply outputs under calibration. This allows adjustments to be made using speech or music, or external test signals from CD or LaserDisc.
Sine Sweep	For checking room resonance and vibration; see opposite.
Silence	No test signal – useful for tracking down hum and noise.

To select a different test signal

- Press the **Display** key.

To test for room vibrations



The Sine Sweep test signal allows you to check your room for rattles and buzzes which could interfere with your listening.

- Press the **Display** key until the display shows:

- Use the ⏸, ⏭, ⏮, and ▶ (Play) keys on the Meridian System Remote to control the Sine Sweep.

Setting up sources

This chapter explains how to set up the sources connected to the digital surround processor, and configure them to suit your other equipment.

When you set up the digital surround processor to one of the standard settings, 12 sources are automatically set up for you.

If you wish, you can configure each source individually to choose its label, the audio input it selects, and the DSP preset it uses.

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 set to one of the standard settings the sources are set up with the labels, inputs, and presets shown in the table below.

Source	*Types 0 – 5*	*Types 0 562 – 5 562*	*2-channel preset*	*Digital preset*	*DTS preset*	*MPEG preset*
CD	Digital	Digital	Trifield	Digital Mu	DTS Mu	MPEG Mu
Radio	Analogue	Digital	Music	Digital Mu	DTS Mu	MPEG Mu
LP	Analogue	Digital	Music	Digital	DTS	MPEG
TV	Analogue	Digital	TV Logic	Digital	DTS	MPEG
Tape 1	Analogue	Digital	Music	Digital	DTS	MPEG
Tape 2	Analogue	Digital	Music	Digital	DTS	MPEG
CDR	Digital	Digital	Trifield	Digital	DTS	MPEG
Cable	Analogue	Digital	TV Logic	Digital	DTS	MPEG
DVD	Digital	Digital	Pro Logic	Digital	DTS	MPEG
VCR 1	Analogue	Digital	Pro Logic	Digital	DTS	MPEG
VCR 2	Analogue	Digital	Pro Logic	Digital	DTS	MPEG
LD	Optical	Digital	THX Cinema	Digital THX	DTS THX	MPEG THX

If the configuration you want is not catered for by one of the standard settings, you can configure each source individually.

For each source you can configure:

- ❍ The label used for it on the front panel display, from 54 alternative labels.
- ❍ The audio input it selects.
- ❍ The DSP preset to be used.
- ❍ The comms type and address, to identify other Meridian 500 Series equipment.

The procedure for doing this is as follows.

To configure a source

- Switch off the 565, using the power switch on the back panel.
- Switch on the power again while holding down the **Display** key on the front panel.

The display will show:

- Press **Source** until the left-hand pair of characters identifies the source you want to configure.

For example, to configure the CD source the display initially shows:

The right-hand part of the display shows the current value of the option.

To change an option

- Press ▲ or ▼ to step between the alternative values for the option.

When you have finished programming sources:

- Switch off at the back panel, and then switch on again to restore normal operation.

The options are summarised in the following table:

Option	*Initial value*	*Alternative values*	*Explanation*
Label		CD, RD, LP, etc.	See *To change a source label*, page 50.
Audio input		Digit.In, Opt.In, Anlg.In, or Last Valid.	Choose the appropriate option for the digital, optical, or analogue inputs, or Last Valid to use the last valid input.
2-channel preset		Music, ProLogic, etc, No Preset, or user preset.	Choose the DSP preset you want to use for two-channel audio streams, or No Preset to use the last valid preset.
Precision		16, 18, 20, or 22 Bits.	All CDs and LaserDiscs are currently 16 bits. The 518 provides 22 bits.
Comms type		1C–8C or NC.	Choose IC for a Meridian CD player, 2C for a Meridian FM Tuner, or NC otherwise.
Address		1A–8A.	Allows you to have up to eight of each source type.
Digital preset		Digital, Digital THX, Digital Mu, or user preset.	Choose the DSP preset you want to use for Dolby Digital audio streams.
DTS preset		DTS, DTS THX, DTS Mu, or user preset.	Choose the DSP preset you want to use for DTS audio streams.

Option	*Initial value*	*Alternative values*	*Explanation*
MPEG preset	CD MPEG	MPEG, MPEG THX, MPEG Mu, or user preset.	Choose the DSP preset you want to use for MPEG audio streams.
MLP preset	CD MLP	MLP or user preset.	Choose the DSP preset you want to use for MLP (Meridian Lossless Packing) audio streams.
DTS delay	DTS Delay Y	Y or N.	Allows you to add a 30 msec delay to avoid an initial hiss with non-video DTS sources.

The last valid, or L.V. options leave the corresponding setting unchanged from its previous value.
For a full list of presets see the *565 User Guide*.

Examples of configuring the sources

The following examples illustrate how you can configure the source options to your own requirements.

To change a source label

- Display the source you want to configure, together with its current label, as described in *To configure a source*, page 47.

For example, to configure the Radio source label choose:

- Press ▲ or ▼ to step between the alternative labels.

For example, to use the label FM for the Radio source set it to:

Over 50 alternative labels are provided to allow you to choose the most appropriate ones for your sources. Selecting None turns off the source.

To use a source key to change DSP preset

If you have fewer than 12 different sources you can use some of the source keys on the Meridian System Remote to change the DSP preset.

- Configure the source key you are going to use with the audio input set to Last Valid, and the required DSP preset.

For example: Source CDR, Label C1, Audio input Last Valid, 2-channel Preset Ambisonic.

Selecting the **CDR** source key will now switch the DSP preset to Ambisonic, leaving the input unchanged.

To set up a system with two Meridian CD players

- Configure the source you are going to use for the first CD player.

For example: Source CD, Label C1, Audio input Digit.In, Comms type 1C, Address 1A.

- Configure the source you are going to use for the second CD player, with a different address.

For example: Source CDR, Label C2. Audio input Opt.In, Comms type 1C, Address 2A.

You will also need to configure this CD player to have the same address; eg 2A.

The Meridian System Remote will now automatically control whichever of the CD players you have selected with the **CD** or **CDR** source keys.

To set up two sources for DVD, one for audio CDs and one for video DVDs

- Configure the source key you are going to use for audio CDs with the digital input, and an appropriate 2-channel preset.

For example: Source CD, Label CD, Audio input Digit.In, 2-channel preset Trifield.

- Configure the source key you are going to use for video DVDs with the digital input, and an appropriate Digital preset.

For example: Source DVD, Label DV, Audio input Digit.In, Digital preset Digital.

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 565.
- ❍ The power switch on the rear panel of the 565 is turned on.

If the 565 will still not illuminate, check any fuses in your power supply and the fuse in the inlet of the 565. If these are all intact, contact your dealer.

Remote not working

Check the following:

- ❍ The battery in the Meridian System Remote.
- ❍ Remove the 500 comms connections from the 565, does it respond now? If so, replace the connections and perform an Auto Configure procedure; see *Connecting to other Meridian equipment*, page 18.
- ❍ See if the 565 is set to Not Controller in Config; see *To set other configuration options*, page 27. Note that this may be deliberate by your dealer.

Communications not working with other Meridian products

- ❍ Check the connections carefully.
- ❍ Are you using a mix of 200 and 500 Series units?

Erratic or unexpected system behaviour

Redo the Auto Configure process; see *Connecting to other Meridian equipment*, page 18.

If this fails, the memory of the 565 may have been corrupted. If this is suspected perform a full reset.

I am playing a Dolby Digital DVD, but the 565 selects the Pro Logic preset

DVDs include a 2-channel Dolby Digital soundtrack, which will use the default 2-channel preset.

- ❍ Select a 6-channel soundtrack, if it is available.

Audio problems

Hum on analogue input

There is no reason for the 565 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 which case an antenna-lead isolator should be fitted.
- ❍ If the 565 seems to be the cause of hum consult your dealer.

Poor sound quality

Poor sound quality will usually result from driving an analogue input too hard.

- ❍ Turn down the analogue input level.
- ❍ To optimise this use the ADC Check procedure; see *ADC Check*, page 43.

There is radio interference

The 565 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 565 and its cabling.
- ❍ Ensure that the receiver uses well-screened antenna cable.
- ❍ Relocate the receiver with respect to the 565.
- ❍ Connect the receiver and this product to different AC outlets.
- ❍ If the problem persists contact you dealer.

Audible hiss at high volume settings

The input dynamic range of any recordings you have are 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-reel tape, 13 bits.
- Cassette tape, 12 bits.
- LP, 11 bits.

Note that 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 565 has a 16-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 565 has 18-bit output precision on the analogue outputs.

Other sources of hiss may be tracked down using either:

- The Mute option. When muted the outputs are reduced to the dither at the selected precision.
- The Silence test signal; see *Test signals*, page 44.

Crackling on optical inputs

Some optical sources, in particular some LaserDisc players, provide poor drive waveforms that do not meet the EIAJ standard, in that 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 *Specifying the speaker layout*, page 22.

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 565 takes 30 msec to identify the encoding, during which a hiss is heard.

❍ With non-video DTS sources you can add a 30 msec delay to avoid this. However, with video sources the delay would cause a noticeable sync problem, so the hiss is unavoidable.

Video problems

TV does not work using the 565

- ❍ Check all video connections; the input is the lower connector of the pair.
- ❍ Temporarily remove the 565 from the video circuit. The fault will probably be elsewhere or in a cable.

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 565?

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.

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