Important safety instructions

• Read the instructions.
• Keep these instructions.
• Follow all instructions.
• Do not use this apparatus near water.
• Clean only with a dry cloth.
• Install only in accordance with the manufacturer’s instructions.
• Refer all servicing to approved service personnel.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.

This apparatus has been designed with Class 1 construction and must be connected to a mains socket outlet with a protective earthing connection (the third grounding pin).

This apparatus uses a single-pole power switch. As a result it is not isolated from AC mains power when switched off at the rear panel. The apparatus may be isolated from mains power either by unplugging the power connector from the rear of the unit, or by unplugging the connector at the opposing end of the power cord or cable from its supply outlet. As a result, either or both of these connectors should remain accessible.

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

To avoid overheating
• Leave at least 10cm around the equipment to ensure sufficient ventilation.

Do not position the product:
• In direct sunlight.
• Near heat sources, such as a radiator.
• Stacked with any other audio products, as the heat it generates may damage the other products.
• On a soft surface, such as a carpet, which would obstruct the ventilation holes in the base.

The product normally runs warm to the touch.

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.
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Part no: C61R/1 (P80404)

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Introduction

This guide provides full information about unpacking the C61R Digital Surround Controller, connecting it to the other equipment in the system, and configuring it using the front panel. Once you have connected and configured the product, refer to the G Series System Guide for information about operating it.

The C61R is a powerful, flexible surround controller, with 8 unbalanced analogue outputs and 10 digital outputs.

At the heart of the C61R is a powerful DSP engine consisting of three Motorola 56367s running at 150MHz – delivering an incredible 450MIPS (million instructions per second) capability. Processing is performed at high sample rates and with 48-bit precision throughout, ensuring that all filtering, processing, and other operations are carried out beyond the limits of human hearing. The C61R is thus a perfect processor for the very latest in digital audio, such as DVD-Audio and DVD-Video.

Inputs

Analogue signals are converted via a 24-bit Delta-Sigma converter to high-sample-rate digital on input to the processor, while all digital signals are reclocked to minimise jitter and maintain total data integrity. The C61R includes two six-channel S/PDIF digital inputs (coax), a USB audio input, four TOSlink optical inputs, and six more stereo coax digital inputs. In addition, there is a six-channel analogue input, and five stereo analogue inputs.

Formats supported

The C61R combines controller and surround processor functions, meeting the latest THX specifications and including MPEG, DTS, Dolby, Trifield, and Ambisonic decoding. In many cases the decoders incorporate our own code, giving them superior integration with the Meridian design philosophy, as well as superior performance. As a result, the C61R can decode surround signals from all PCM optical discs. The C61R is thus an ideal complement to a G Series optical disc player like the G98.

Smart Source feature

The C61R’s ‘Smart Source’ feature continually monitors the digital inputs and automatically loads the correct decoding software for the format, speaker layout, and encoding of the incoming signal. This capability is enhanced by MHR SmartLink, which provides a digital link between a Meridian optical disc player and processor,
carrying explicit information about the nature of the datastream as well as encrypted high-resolution digital signals from DVD-Audio – the first system of its kind to be approved. Virtually all other manufacturers oblige you to go through an analogue connection, losing quality in the process.

You can also store separate parameters for each source (such as DVD) depending on whether the incoming signal is stereo or surround, so that any source material is played with the DSP mode of your choice.

**Meridian Room Correction**
The C61R incorporates Meridian Room Correction, a unique system that compensates for acoustic deficiencies in your listening room, particularly at the bass end. It achieves this by automatically analysing the room response and then using powerful Digital Signal Processing (DSP) technology to build a set of filters, called a profile. This audibly improves the sound by eliminating resonances and making the decay time consistent for frequencies below about 250Hz.
## Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
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<tbody>
<tr>
<td><strong>Digital coax inputs</strong></td>
<td>6 coax digital inputs, 2 6-channel coax inputs, all MHR.</td>
</tr>
<tr>
<td><strong>USB input</strong></td>
<td>1 USB digital input allows connection to a Windows PC or Macintosh.</td>
</tr>
<tr>
<td><strong>Digital optical inputs</strong></td>
<td>5 optical digital inputs.</td>
</tr>
<tr>
<td><strong>Analogue inputs</strong></td>
<td>8 stereo unbalanced inputs; A1-A3 and A4-A6 can be used as two 6-channel unbalanced inputs.</td>
</tr>
<tr>
<td><strong>Digital outputs</strong></td>
<td>Main, Centre/Sub, Sides, Rears, A/B*</td>
</tr>
<tr>
<td><strong>Unbalanced analogue outputs</strong></td>
<td>Main L/R, Centre/Sub, Rears, LZ/RZ†</td>
</tr>
<tr>
<td><strong>Trigger outputs</strong></td>
<td>3 12VDC/100mA trigger outputs configurable by source.</td>
</tr>
<tr>
<td><strong>Comms</strong></td>
<td>2 5-pin 240° DIN sockets, BNC socket, USB, RS232 interface.</td>
</tr>
<tr>
<td><strong>Conversion</strong></td>
<td>Up to 192kHz, 24-bit Sigma-Delta conversion on all analogue inputs and outputs.</td>
</tr>
<tr>
<td><strong>Formats</strong></td>
<td>Include Dolby Digital, DTS, MPEG Surround, and AAC.</td>
</tr>
<tr>
<td><strong>DSP modes</strong></td>
<td>Direct, Music, Trifield, Ambisonics, Super, Stereo, MusicLogic, Mono, TV Logic, PLIIx Music, PLIIx Movie, PLIIx THX, Discrete, Cinema, PLIIx Mov6, PLIIx Mus6, THX, THX Surround EX, THX Ultra2 Cinema, THX Music.</td>
</tr>
<tr>
<td><strong>Power</strong></td>
<td>Universal supply 100-240V, 50-60Hz, 40W.</td>
</tr>
<tr>
<td><strong>Processing</strong></td>
<td>3 Motorola 56367s running at 150MHz to give a total of approximately 450MIPS. 48-bit arithmetic throughout.</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>440mm x 90mm x 350mm (17.32” x 3.54” x 13.78”) WHD.</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>8.5kg (18lb) approx.</td>
</tr>
<tr>
<td><strong>Controls</strong></td>
<td>Front-panel soft keys include control of Source, Preset, etc. Standby and display buttons, volume control, mute. Full remote control of all features via MSR+.</td>
</tr>
<tr>
<td><strong>Display</strong></td>
<td>Multi-character dot-matrix Vacuum Fluorescent Display.</td>
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<tr>
<td><strong>Indicators</strong></td>
<td>Standby button lit when off.</td>
</tr>
</tbody>
</table>

* **A/B**: Subs if two or three subs are used. Optional ceiling speakers with future software update.
† **LZ/RZ**: May be chosen to be any pair from: Main L/R, Centre/Sub, Sides, Rears, Subs.

**Note**: Current software supports a maximum of eight outputs. Future software may support up to 12.
Installing the digital surround controller

This chapter explains how to install the digital surround controller. It describes what you should find when you unpack the product, and how you should connect it to the other equipment in the system.

You should not make any connections to the product or to any other component in the system while the AC power supply is connected and switched on.

Unpacking

The C61R Digital Surround Controller is supplied with the following accessories:

- MSR+ remote control with batteries, manual, and spare key caps.
- Meridian Comms lead.
- Power cord.
- This manual.
- Meridian G Series System Guide.

If any of these items are missing please contact your dealer.

**Note:** You should retain the packaging in case you need to transport the unit.
### Audio inputs

#### Use this connector
- **MULTI DIGITAL INPUT 1 (DVD) or D1-D3,**
- **MULTI DIGITAL INPUT 2 or D4-D6**
- **DIGITAL INPUT D7 (CD), D8 (DISC), D9 (VCR2), D10-D12**
- **MULTI ANALOGUE INPUT 1 (AUX) or A1-A3**
- **ANALOGUE INPUT A4 (TAPE), A5 (TV), A6 (CABLE), A7 (VCR1) * **
- **USB INPUT U1**
- **OPTICAL INPUT O2 (GAME), O3-O5**
- **ANALOGUE IN MIC (A8-L)**

#### To connect to this
- **The multichannel digital output of a source such as the G98DH DVD Audio Transport, or three digital sources.**
- **The digital output of a source such as a G07 24-bit CD Player or DAB tuner.**
- **A multichannel analogue source such as an SACD player.**
- **The unbalanced analogue output of a source such as a tape recorder, TV tuner, cable box, or VCR.**
- **A computer USB port.**
- **The optical output of a source such as a satellite receiver or computer game console.**
- **An SPL meter for use in room correction configuration.**

* A4-A6 can be used as MULTI ANALOGUE INPUT 2 to connect to a second multichannel analogue source such as an SACD player.

The default assignment of the sources to each input is shown in brackets after the input name in the above table. To assign a different input to a source see *Configuring sources*, page 22.
You can connect up to 12 digital coax sources to the C61R Digital Surround Controller.

- Connect the digital source to one of the digital input sockets of the digital surround controller, using a 75Ω screened coax phono lead.

If the source is a Meridian product connect together the COMMS sockets using the Comms lead provided.

To connect to an analogue source (eg TV tuner)

You can connect up to eight analogue sources to the C61R Digital Surround Controller.

- Connect the analogue source to one of the analogue input sockets of the digital surround controller, using screened coax phono leads.
To connect to a computer via USB

You can connect a Windows PC or Macintosh to the C61R via the USB input to allow you to use the C61R as a digital audio output device.

On a PC, Windows XP/SP2 or later is required. On a Macintosh, OSX 10.4 or later is recommended. Linux computers that support USB audio class drivers can also be used.

- Connect the computer’s USB port to USB INPUT U1 on the C61R using a standard USB A-B cable. The flat rectangular end plugs into the PC and the square end into the C61R.

The first time that the C61R is plugged in to the PC or Macintosh it will automatically be recognised, and appropriate drivers will be installed. The C61R will then appear as a sound output device called Meridian 48k/16 in the Sound control panel (PC) or Sound system preferences panel (Macintosh).

Note: The computer volume control will have no effect on the playback volume; use the Meridian system control instead.

To connect to a DVD-Audio player with digital multichannel outputs (eg G98DH DVD Audio Transport)

The C61R Digital Surround Controller provides 12 digital coax inputs, six of which can be used as two multichannel inputs from a source with a suitable digital multichannel output, such as the G98DH DVD Player.

- Connect the MAIN DIGITAL OUT on the G98DH to the MULTI DIGITAL INPUT 1 on the C61R, using three 75Ω screened coax phono leads.
- Connect together the COMMS sockets using the Comms lead provided.
To connect to a source with analogue multichannel outputs (eg SACD or DVD-A player)

Analogue inputs A1 to A3 can be used as a multichannel input from a source with a suitable analogue multichannel output, such as an SACD player. Analogue inputs A4 to A6 can optionally be used as a second multichannel analogue input.

- Connect the ANALOGUE OUTPUT sockets from the source to the analogue multichannel inputs on the digital surround controller using six phono leads.
- Optionally connect a digital output from the source to digital input D8 (DISC) on the digital surround controller, using a digital phono lead.

You can then select the source corresponding to the multichannel input (AUX) for playing surround material, and the source corresponding to the digital input (DISC) to decode other formats.

**Note:** Multichannel analogue sources may have subwoofer level outputs that vary by up to 10dB, so it may be necessary to reduce the LFE level to give correct bass integration; see *DSP presets*, page 85.
Audio outputs

The C61R hardware architecture is designed to process up to 12 completely independent output channels. Currently the software limits the number of outputs to a total of eight: Main L/R, Centre, Sub, Rears, and either Sides or two more additional subwoofers.

The C61R provides analogue and/or digital output sockets for these eight speakers.

**Use this output**

- DIGITAL OUTPUT MAIN L/R, CENTRE/SUB, SIDES, REARS, A/B
- ANALOGUE OUTPUT LEFT, RIGHT, REAR L, REAR R, CENTRE, SUB, LZ, RZ

**To connect to this**

- Digital loudspeakers, using digital coax cables.
- The unbalanced analogue input of a power amplifier or active loudspeakers, using screened coax phono leads.
To connect the C61R to Meridian DSP loudspeakers

- Use the Comms part of an M5 lead to connect one of the COMMS sockets on the C61R 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.

If the system includes more than two Meridian DSP loudspeakers you may use 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 each pair of speakers together with an S5 lead, out of the first speaker and into the second speaker, as shown in the diagram.
- Connect the inputs to the first speaker of each additional pair to the 511 (Comms) and the appropriate output of the C61R (audio), using an S5 lead.

The speakers should then be configured appropriately as master and slaves, and Left, Right, Centre, Surround; see Meridian DSP Loudspeaker User Guide for more details.
To connect the C61R to power amplifiers or to analogue active and passive speakers powered by a Meridian G41

The C61R provides six analogue outputs to allow you to connect to six power amplifiers and passive loudspeakers, or 300 Series Active and Passive Installation Loudspeakers powered by the G41 Active Crossover Amplifier.

- Connect the LEFT and RIGHT analogue outputs to the power amplifier inputs for the main front loudspeakers.
- Connect the SURR L and SURR R analogue outputs to the power amplifier inputs for the rear loudspeakers.
- Connect the CENTRE analogue output to the power amplifier input for the centre loudspeaker.
- If the system includes a subwoofer connect the SUB analogue output to an active analogue subwoofer, such as the Meridian SW1600.
To connect to an active subwoofer (eg Meridian SW1600 or SW5500)

The Meridian SW1600 and SW5500 subwoofers provide both digital and analogue inputs, allowing you to connect them to either the digital or analogue subwoofer outputs of the C61R. The analogue connection must be used if you do not have a digital main speaker.

- Connect the SUB analogue output socket from the C61R Digital Surround Controller to the subwoofer’s line-level input using a phono lead.

Use RZ and LZ if you have two subwoofers.

The digital surround controller provides a very high-quality crossover for the subwoofer, and for best results you should use this instead of the subwoofer’s crossover. To do this remove any crossover in the subwoofer or set it to its highest setting (eg 200Hz). The subwoofer crossover can be set from the front panel of the C61R; see Subwoofer crossover frequency, page 32.
Communications connections

Use this connector | To connect to this
DIN COMMS | Other Meridian C Series, G Series, or 800 Series equipment, or Meridian DSP loudspeakers.
BNC COMMS | Other Meridian C Series or G Series equipment, or some Meridian DSP loudspeakers.
RS232 connection* | A computer, for configuring the digital surround controller.
USB connection | A computer, for configuring the digital surround controller.
IR IN | A G12 IR Receiver, or approved alternative infra-red repeater. Contact your dealer for details.
TRIG 1, TRIG 2, TRIG 3 | Other equipment, via mono 3.5mm jack plug outputs (centre pin hot) providing 12VDC. They are always low in standby. By default they are high for all sources, so can be used to bring a G Series power amplifier out of standby. Alternatively you can program them to be high for specific sources; e.g., to control a projection screen.

*A second RS232 socket is provided on the front panel, and a switch allows you to select the active connector.
To connect to other Meridian C Series, G Series, or 800 Series equipment

In a system of Meridian products the products should be linked together in a chain, via the COMMS sockets, using the Comms leads supplied with each product. The sequence in which you connect the units is not important.

One of the products acts as the controller for the system, receiving infra-red commands from the MSR+, and then, if appropriate, relaying them to the other products via the Comms link. The following procedure should be used to set up the Comms correctly between several products:

• Switch all the units to standby.
• Press Clear (MSR+).

Each unit will display:

`Auto`

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

`Con.`

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

`Not Con.`

The system is now ready for use.

If the automatic setup does not work, first make sure you are operating the MSR+ from a position where all the units can receive the infra-red, and try again. Then:

• Check that none of the units have been configured to be IR Controller; see Settings, page 25. Either all products should be set to Auto, or one should be configured as Controller and the others as Not Controller.

Note: Do not, under any circumstances, connect any equipment other than Meridian C Series, G Series, or 800 Series to any socket marked COMMS on the back of the product.
Installing the digital surround controller
Configuring the digital surround controller

This chapter explains how to configure the digital surround controller using the Configuration Wizard. Alternatively, for complete control over all aspects of the product’s configuration you can set up the unit from a computer using the Meridian Configuration Program; see Meridian Configuration Program, page 35.

Configuration Wizard

The Configuration Wizard leads you through the correct sequence to configure your digital surround controller. Alternatively, you can skip between the configuration stages, which allow you to reset the configuration, or configure the sources or other settings of the digital surround controller.

To run the Configuration Wizard
• If necessary press On/Off to put the digital surround controller into standby.
• Press More.

If the product is locked the display shows:

- Press Unlock to unlock it, then press More.

The displays then shows:

- Press Wizard.

Follow the sequence of configuration stages described in the following pages, pressing Next to proceed after each stage.

At any stage in the Configuration Wizard the following options are available:

<table>
<thead>
<tr>
<th>To do this</th>
<th>Press</th>
</tr>
</thead>
<tbody>
<tr>
<td>Go back to an earlier configuration option</td>
<td>Back</td>
</tr>
<tr>
<td>Return to the title screen for the stage</td>
<td>Home</td>
</tr>
<tr>
<td>Exit from the configuration menus</td>
<td>On/Off</td>
</tr>
<tr>
<td>Display help about the current option</td>
<td>More</td>
</tr>
</tbody>
</table>
Stage 1: Resetting the product

The digital surround controller provides several alternative standard settings, called Types, which configure all aspects of the product into the most commonly needed configurations.

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.

To reset the configuration

- Press Wizard.

The display shows the title screen for stage 1:

```
Press More for help
1: Reset settings
Back Enter Skip
```

- Press Enter to proceed or Skip to go stage 2.

If you pressed Enter the display shows:

```
Reset all settings?
Back Yes
```

- Press Yes to proceed or Back to exit.

The display shows the current Type:

```
7.1, All An, Mono/THX Sub
Type 1
Back Next ▼ ▲
```
Configuring the digital surround controller

Types

The following table lists the available Types:

<table>
<thead>
<tr>
<th>Type</th>
<th>Speakers</th>
<th>Music Sub</th>
<th>Logic Sub</th>
<th>5.1 Movie Sub</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>All analogue.</td>
<td>LFE</td>
<td>Centre</td>
<td>LFE</td>
</tr>
<tr>
<td>1</td>
<td>All analogue.</td>
<td>Mono</td>
<td>Mono</td>
<td>Mono</td>
</tr>
<tr>
<td>2</td>
<td>All digital.</td>
<td>LFE</td>
<td>Centre</td>
<td>LFE</td>
</tr>
<tr>
<td>3</td>
<td>All digital, large centre.</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>4</td>
<td>Digital left, right, and centre.</td>
<td>LFE</td>
<td>Centre</td>
<td>LFE</td>
</tr>
<tr>
<td>5</td>
<td>Digital left and right.</td>
<td>LFE</td>
<td>Centre</td>
<td>LFE</td>
</tr>
</tbody>
</table>

Music Sub refers to a subwoofer used for all Music DSP presets, Logic Sub to a subwoofer used for all Logic DSP presets, and 5.1 Movie Sub to a subwoofer used for all 5.1 Movie DSP presets; see Speaker layouts, page 85.

LFE subwoofer is only active in multichannel presets. Mono and Centre Subwoofers are active in all presets.

Note that any Types stored using the Meridian Configuration Program will also be available in this list; see the Meridian Configuration Program Guide for more information.
Stage 2: Configuring speakers

The Speakers configuration stage allows you to set up the digital surround controller for the particular arrangement of loudspeakers in your system.

To configure the speakers

Either:

• Press **Next** after resetting the product; see page 18.

Or:

• Press **Wizard**; see page 17.
• Press **Skip** to skip past the **Reset settings** menu.

The display shows the title screen for stage 2:

![Title Screen](image)

• Press **Enter** to proceed or **Skip** to go to stage 3.

The display shows the first speaker configuration option:

![Speaker Option](image)

• Press **Next** or **Back** to step between options.

A description of each option is shown on the top line of the display, and its current value is shown below this to the right.

The options are summarised in the table on the next page.

To change an option

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

When you have stepped through all the speaker options the display shows:

![Screen with Options](image)

Either:

• Press **Next** on the last option of the last speaker to proceed to configuring sources, as described in the next section.

Or:

• Press **On/Off** to return to standby.

If you press **On/Off** before completing the configuration a warning is displayed, giving you the option of continuing or abandoning the configuration.
**Speaker options**

The following table summarises the speaker options:

<table>
<thead>
<tr>
<th>Option</th>
<th>Values</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Subwoofers</td>
<td>none, one, two, three</td>
<td>How many subwoofers.</td>
</tr>
<tr>
<td>The main L&amp;R speakers are</td>
<td>small analogue/THX, small DSP, large analogue, large DSP</td>
<td>The types of the main left and right speakers. If you have no subwoofers, you cannot specify small main speakers.</td>
</tr>
<tr>
<td>The Centre is used</td>
<td>always, never, for music, for movies</td>
<td>When the centre speaker is to be available.</td>
</tr>
<tr>
<td>The Centre speaker is a</td>
<td>small analogue/THX, small DSP, large analogue, large DSP</td>
<td>The type of the centre speaker.*</td>
</tr>
<tr>
<td>Number of Surrounds</td>
<td>none, two, four</td>
<td>The total number of rear and side surround speakers.</td>
</tr>
<tr>
<td>The Side speakers are</td>
<td>small analogue/THX, small DSP, large analogue, large DSP</td>
<td>The types of the side speakers.*</td>
</tr>
<tr>
<td>The Rear speakers are</td>
<td>small analogue/THX, small DSP, large analogue, large DSP</td>
<td>The types of the rear speakers.*</td>
</tr>
<tr>
<td>The Subs are used</td>
<td>for movies only, always</td>
<td>When the subwoofers are used. If you have small main speakers, the subwoofer must always be used.</td>
</tr>
<tr>
<td>The Sub handles</td>
<td>all the bass, only the LFE</td>
<td>Whether to use the subwoofer for all bass or just the LFE channel. Only available if there is only one subwoofer.</td>
</tr>
<tr>
<td>The bass balance is</td>
<td>neutral, heavy</td>
<td>Whether the bass is distributed to all the large speakers and subwoofer (heavy) or just the subwoofer (neutral – recommended). Only available if there is only one subwoofer, and it handles all the bass not just the LFE.</td>
</tr>
<tr>
<td>The 2 Subs are used for</td>
<td>Left and Right, Front and Surround</td>
<td>If there are two subwoofers, their position. Only available if there are two subwoofers.</td>
</tr>
<tr>
<td>The sub is</td>
<td>analogue, digital</td>
<td>The type of subwoofer(s).</td>
</tr>
</tbody>
</table>

*If you have small main speakers, you cannot specify large centre or surrounds.
Stage 3: Configuring sources

The digital surround controller provides up to 12 sources corresponding to the 12 source keys on the MSR+:

CD, RADIO, DVD, AUX, DISC, TAPE, TV, CABLE, SAT, VCR1, VCR2, GAME.

For each source the Configure sources stage allows you to configure a series of options, including:

- Whether it is in use.
- The label used for it on the front-panel display.
- The audio input it selects.
- The TRIGGER output level it selects.

The procedure for doing this is as follows.

To configure a source

Either:
- Press Next after configuring speakers; see page 20.

Or:
- Press Wizard; see page 17.
- Press Skip to skip past the Reset settings and Select speakers menus.

The display shows the title screen for stage 3:

- Press Enter to proceed or Skip to go to stage 4.

The display shows the first source and the first configuration option for that source, whether it is in use:

- Press Next or Back to step between options.

The top line of the display shows a description of each option, and its current value is shown to the right of the source name.

When changing the source name, Next and Back step between character positions.

The options are summarised in the table on the next page.

To change an option

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

To move to the next source

- Press Source.

When you have finished configuring sources:

Either:
- Press Next on the last option of the last source (Game) to proceed to configuring settings, as described in the next section.

Or:
- Press On/Off to return to standby.
# Source options

The following table summarises the source options:

<table>
<thead>
<tr>
<th><strong>Option</strong></th>
<th><strong>Values</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>The source is:</td>
<td>in use, not in use</td>
<td>Whether the source is enabled.</td>
</tr>
<tr>
<td>Audio input:</td>
<td>D1-D12, MD1-MD2, U1, O2-O5, A1-A8, MA1, MA2, Last Valid*</td>
<td>The audio input used for the source; digital, multichannel digital, USB, optical, tuner, analogue, or multichannel analogue.</td>
</tr>
<tr>
<td>Source name:</td>
<td>Any name of up to five characters.</td>
<td></td>
</tr>
<tr>
<td>Trigger #1:</td>
<td>High, Low, Last Valid</td>
<td>Trigger outputs for the source.</td>
</tr>
<tr>
<td>Trigger #2:</td>
<td>High, Low, Last Valid</td>
<td>Trigger outputs for the source.</td>
</tr>
<tr>
<td>Trigger #3:</td>
<td>High, Low, Last Valid</td>
<td>Trigger outputs for the source.</td>
</tr>
<tr>
<td>Comms Type:</td>
<td>CD 1C, Tuner 2C, DVD 3C, 4C-8C, No Comms NC</td>
<td>Set to NC unless the source is a Meridian product.</td>
</tr>
<tr>
<td>Comms Address:</td>
<td>1A-8A</td>
<td>Allows you to have up to eight of each source type.</td>
</tr>
</tbody>
</table>

*Last Valid leaves the input set to the last input you selected.*
The next stage allows you to configure other aspects of the product's operation.

**To configure other settings**

*Either:*

• Press **Next** after configuring the sources; see page 22.

*Or:*

• Press **Wizard**; see page 17.
• Press **Skip** to skip past the stages 1 to 3.

The display shows the title screen for stage 4:

```
Press More for help
4: Other settings
Back  Enter  Skip
```

• Press **Enter** to proceed or **Skip** to go to the calibration procedure.

The first setting is displayed:

```
The fan is:
used as necessary
Back  Next  ▼  ▲
```

A description of each setting is shown on the top line of the display, and its current value is shown to the right of the display.

The settings are summarised in the table on the next page.

**To change a setting**

• Press ▲ or ▼ to step through the alternative values for the setting.

When you have finished configuring the settings:

*Either:*

• Press **Next** to proceed to calibrating the system, as described in the next chapter.

*Or:*

• Press **On/Off** to return to standby.
Settings

The following table summarises the product settings:

<table>
<thead>
<tr>
<th>Option</th>
<th>Values</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>The fan is:</td>
<td>used as necessary, never used</td>
<td>Specifies how the optional temperature controlled fan operates.</td>
</tr>
<tr>
<td>Distance measurement:</td>
<td>feet/inches, metres</td>
<td>Units for displaying and entering distances.</td>
</tr>
<tr>
<td>Do your subs play to 20Hz?</td>
<td>No, THX Ultra2/yes</td>
<td>Subwoofer frequency response.</td>
</tr>
<tr>
<td>Boundary Gain Compensation:</td>
<td>off, on</td>
<td>Reduces the bass to compensate for listening positions close to a wall.</td>
</tr>
<tr>
<td>Rear speaker separation</td>
<td>&lt;12&quot;/0.3m, 12-48&quot;/0.3-1.2m, &gt;48&quot;/1.2m</td>
<td>Separation between rear speakers; only available when there are four surrounds.</td>
</tr>
<tr>
<td>Timeout to Home buttons:</td>
<td>on, off</td>
<td>Whether the soft keys revert to the home keys after a delay.</td>
</tr>
<tr>
<td>Diagnostic displays:</td>
<td>on, off</td>
<td>Whether diagnostic displays are shown.</td>
</tr>
<tr>
<td>Is the C61R IR Controller?</td>
<td>Auto, Controller, Not Controller</td>
<td>Whether the product is the infra-red controller for the system.</td>
</tr>
<tr>
<td>Main System Address</td>
<td>1-8</td>
<td>Advanced setting (normally 1).</td>
</tr>
<tr>
<td>Product Address</td>
<td>1-8</td>
<td>Advanced setting (normally 1).</td>
</tr>
</tbody>
</table>

To toggle the IR mode

- If necessary press **On/Off** to put the surround controller into standby.
- Press **More**.

The display shows:

```
Version IR Wizard Calib Lock
```
Configuring the digital surround controller
Calibrating the system

To help you to set up the installation to give the best possible sound with any particular combination of associated equipment, the C61R Digital Surround Controller 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 use the calibration procedure the first time you set up the system, and whenever you want to check the calibration, such as after changing the layout of the room.

Introduction

We recommend that you perform the calibration procedure using the MSR+ 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.

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.

You can choose to display and enter distances in either feet and inches or metres.
To start the calibration procedure

*Either:*

- Press **Next** on the last option of configuring settings; see page 24.

*Or:*

- Press **On/Off** to put the digital surround controller into standby.
- Press **More**.

If the product is locked the display shows:

Press Unlock.

The display shows:

Press Calib.

The display shows **Please wait....**

After a few seconds the display shows 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 **On/Off**.

To complete the calibration procedure

When you reach the end of the calibration procedure the following display confirms that you have completed the calibration of the system:

Press Restart to restart the calibration procedure, or **Next** to complete the wizard.

The display shows:

Either:

- Press **Exit** to return to standby.

Or:

- Press **Restart** to return to stage 1; see page 18.
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 THX.

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

```
[534x532]Press More for help
[536x532]Left   Level  +0.0dB
```

- Use ↑ and ↓ 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 the 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 → 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 ear height at the listening position to the tweeter on each speaker (where applicable), in the distance units you have chosen; see *Settings*, page 25.
Calibrating the system

• Use ▶ and ◄ to move between each of the speakers in the layout.

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

Press More for help
 Left  Distance 18'0

Units ▶ ▶ ▶

• Use ▲ and ▼ to change the distance.

• You can press Units to change between feet/inches and metres.

Repeat this for each of the speakers in your layout.

• Press ▶ 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 ▶ and ◄ to move between each of the speakers in the layout.

The first display allows you to adjust the phase. For example:

Press More for help
 Left  Phase

• Choose the correct setting as follows:

<table>
<thead>
<tr>
<th>Setting</th>
<th>What it sounds like</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct</td>
<td>The sound between the speakers is very even, and does not change radically as you move your head.</td>
</tr>
<tr>
<td>Incorrect</td>
<td>The sound appears diffused, and changes in timbre and apparent location as you move your head.</td>
</tr>
</tbody>
</table>

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

• Press ▶ to proceed to the next calibration stage.
Speaker size

These tests allow you to determine the bass handling capability of subwoofers and large analogue speakers. Once set, the digital surround controller will limit the bass level to protect the speakers from potential damage.

On starting the test the speaker sizes are set to zero to avoid the possibility of damaging the speakers, and the display shows:

- Press More for help
- Sizes set to zero

The display then shows the first large analogue speaker; for example:

- Press More for help
- Left Size 0

- Press ▲ or ▼ to adjust the size value for the speaker until it just begins to distort distinctly, and then reduce the value by one.
- Press ► or ◄ to move between each of the speakers to be adjusted.

This is the last test in the calibration procedure; see To complete the calibration procedure, page 28.
Using the Sine/Sub/Sens controls

This section explains how to use the Sine/Sub/Sens controls to check for room resonances, adjust the subwoofer crossover frequency, or adjust the sensitivity of the analogue sources.

To display the Sine/Sub/Sens controls

- If necessary, unlock the digital surround controller as described in Configuration Wizard, page 17.
- Select a source and press More until the bottom line of the display shows:

  ![Radio Trifield 65 Sine/Sub/Sens.]

- Press Sine/Sub/Sens.

The bottom line of the display shows the Sine/Sub/Sens controls:

![Radio Trifield 65 Sine -Ovr+ -Sens+] 85Hz

Subwoofer crossover frequency

The C61R Digital Surround Controller allows the crossover frequency for any subwoofers which you have to be adjusted between 30 and 150Hz. The crossover can be set independently for Music, Logic, and 5.1 Movie layouts. The default is the THX standard of 80Hz.

To adjust the subwoofer crossover frequency

- Select a source, then display the Sine/Sub/Sens controls as described above.
- Press Xovr- or Xovr+ to decrease or increase the crossover frequency.

The display shows the current crossover frequency:

![CD Xover 85Hz Sine -Ovr+ -Sens+] 85Hz

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 the main speakers have good bass handling down to, say, 50Hz.

Sinewave sweep test

The C61R includes a sinewave signal test, to help you set the subwoofer crossover frequencies, or check for room resonances. To avoid possible damage to the speakers the volume is reduced to 50, if necessary, on entering the test.

Warning: This test is very loud. Bass protection is turned off during this test, and very loud low-frequency signals may damage the speakers.

To use the sinewave sweep test

- Select a source, then display the Sine/Sub/Sens controls as described above.
- Press Sine to turn on the sinewave signal.
The display shows:

```
CD  Sine  80.0Hz
Chan ▼  ▲  Sound Exit
```

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 select the channel**
- Press **Chan**.

You can select any individual channel, or **All Channels**.

**To change the sweep rate**
- Press ▲ or ▼ to change the sweep rate and direction, as follows:

<table>
<thead>
<tr>
<th>Display</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD  &gt;&gt;  88.5Hz</td>
<td>Fast sweep up.</td>
</tr>
<tr>
<td>Chan ▼ ▲ Sound Exit</td>
<td></td>
</tr>
<tr>
<td>CD  &gt;  81.5Hz</td>
<td>Slow sweep up.</td>
</tr>
<tr>
<td>Chan ▼ ▲ Sound Exit</td>
<td></td>
</tr>
<tr>
<td>CD  Pause  80.0Hz</td>
<td>Paused.</td>
</tr>
<tr>
<td>Chan ▼ ▲ Sound Exit</td>
<td></td>
</tr>
<tr>
<td>CD  &lt;  78.5Hz</td>
<td>Slow sweep down.</td>
</tr>
<tr>
<td>Chan ▼ ▲ Sound Exit</td>
<td></td>
</tr>
<tr>
<td>CD  &lt;&lt;  70.5Hz</td>
<td>Fast sweep down.</td>
</tr>
<tr>
<td>Chan ▼ ▲ Sound Exit</td>
<td></td>
</tr>
</tbody>
</table>

**To change the volume**
- Use the volume keys in the usual way.

**To change the input**
- Press **Sound**.

You can select between the following inputs:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input</td>
<td>The current input.</td>
</tr>
<tr>
<td>Sine</td>
<td>A sinewave.</td>
</tr>
<tr>
<td>Noise</td>
<td>Pink noise, band bass 500Hz to 2kHz for main channel.</td>
</tr>
<tr>
<td>Silent</td>
<td>Silence.</td>
</tr>
</tbody>
</table>

Alternatively you can switch between inputs using the menu keys on the MSR+.
Setting up sources
This section explains how to use the Sine/Sub/Sens controls to adjust the sensitivity of the analogue sources.

To adjust the sensitivity of a source
To obtain the best signal-to-noise ratio for each analogue source you can adjust its sensitivity to give the highest level that does not produce clipping.

- Select the source you want to adjust, with loud source material playing.
- Display the Sine/Sub/Sens controls as described above.
- Press Sens- or Sens+ to decrease or increase the sensitivity.

The display shows the current sensitivity and the peak level; for example:

```
TV    1.4V  Peak -3
Sine  -Xover+  -Sens+
```

You can adjust the sensitivity between 0.7, 1.0, 1.4, 2.0, and 2.8V (least sensitive).

If the sensitivity is set too high the input will clip the loudest passages, and the peak will be 0dB.

The display shows, for example:

```
TV    2.0V  Clip -0
Sine  -Xover+  -Sens+
```

In this case reduce the sensitivity by selecting a higher number.

If you have selected a digital source you cannot adjust the sensitivity and the display shows, for example:

```
DVD    Not Analogue
Sine  -Xover+  -Sens+
```
This chapter explains how to install the Meridian Configuration Program, with a general overview of its key features, and then gives complete step-by-step instructions for creating a complete configuration for a typical simple system.

Overview

The Meridian Configuration Program is a Windows application that lets you design the configuration of your G Series or 800 Series products to suit both your own personal preferences and the particular configuration of other equipment in your system.

It uses an intuitive graphical interface that prompts you at every stage for the information it needs to complete the system. When you have designed the system to your requirements you can save the configuration to the appropriate Meridian products in the system via a serial link connected to the back of each product.

How it works

The Meridian Configuration Program reflects Meridian’s system approach to designing audio products and presents a graphical representation of your whole system. It allows you to create a single configuration file representing the settings of each product in your system and the way they are interconnected. This file is stored in the controller of the system for future reference. As well as being far more convenient than configuring each product independently, this approach also enables the Meridian Configuration Program to check that the settings you are proposing are appropriate for the particular combination of products in the system.

The Meridian Configuration Program is structured as a wizard; it leads you through a series of stages from the Welcome page through to the Finish page, which is reached when the configuration has been completed. A Breadcrumb Trail below the toolbar at the top of the Meridian Configuration Program window shows your current position in the sequence of pages and allows you to jump back to an earlier page to check a particular setting you made.
Benefits of using the Meridian Configuration Program

Configuring your system with the Meridian Configuration Program offers several important benefits. In particular:

- You can configure the entire system in a single operation.
- It is more convenient and more intuitive than using the front-panel menus.
- You have access to many advanced configuration options that are not available from the front-panel menu.
- You can conveniently edit the names of sources, DSP presets, and radio presets using the keyboard.
- You can edit the G Series soft keys.
- If your controller is a C61R, G61R, G68, or 861 you can take advantage of Meridian Room Correction.
- You can set up multiple systems far more conveniently than by manually configuring each product.
- You can keep a record of the configuration of your entire system in a single document on your PC.

If you have made manual adjustments to the configuration of a product from the front panel, you can fetch the product’s configuration into the Meridian Configuration Program as the starting point for the configuration of your system, in order to retain the settings, such as calibration settings.

Meridian Control Window

The Meridian Configuration Program is supplied with the Meridian Control Window utility, a separate PC application that allows you to control any Meridian product via a serial cable (or USB cable on certain products) using a simple push button interface that emulates a Meridian MSR+ or MSR remote control. Alternatively it allows you to submit commands by name, and supply parameters for commands that take a value, such as the volume setting.
The Products page

The following illustration shows the key features of the **Products** page, which lets you specify how your system is interconnected:
Installing and running the Meridian Configuration Program

Requirements
To use the Meridian Configuration Program you need:

• A computer running Windows 95, 98, 2000, NT 4, ME, or XP.
• 10Mbytes of free disk space.

The Meridian Configuration Program communicates with the products you are setting up via a serial cable. The computer you are using needs to have a nine-pin serial port available, or you can use a USB/serial adaptor.

Alternatively some G Series products include a USB port, in which case the Meridian Configuration Program can communicate with them via a USB cable connected to the computer’s USB port.

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 Meridian Configuration Program Installation CD-ROM.

The Setup program should run automatically when the CD-ROM is inserted. If not, locate setup.exe on the CD-ROM and run it.

The Setup program Welcome page will be displayed.

• Follow the wizard.

On the Preferences page:

• Leave Install for all users selected, unless you want to restrict use of the program to yourself on a multi-user machine.

Running the Configuration Program
• Click Start, point at All Programs, Meridian, then click Configuration Program.

The Welcome page will be displayed. This provides links to useful information.
Quick tour

This section gives complete step-by-step instructions for creating a complete configuration for a typical simple system. Even if this does not correspond to your own system we recommend you follow the tutorial to give you a quick tour of the Meridian Configuration Program.

At each stage the Quick tour shows information in grey tinted boxes about the more advanced features of the program, and the additional options for configuring 800 Series products.

Using the Meridian Configuration Program

The simplest way to use the Meridian Configuration Program is to click the links in the Breadcrumb Trail and Information Bar at the top of the window; for example:

Starting a configuration

To start creating a configuration from the **Welcome** page:

- Click the **Next** link in the Breadcrumb Trail:

The **Products** page will then be displayed. This allows you to define the products in your system and indicate how they are connected together.

Getting help

For more detailed information about the Meridian Configuration Program see the on-line help. To display the help:

- On the **Help** menu, click **Configuration Program Help**.
The controller is defined as the product that selects sources and controls the volume for the system; it is the digital surround controller, preamplifier, or combination product. In this example it is a G68 Digital Surround Controller.

- Click the insert a controller link in the Information Bar.

An Insert dialogue box is displayed to allow you to specify the type of controller.

- Select G68ADV from the drop-down list and click the OK button to add the product:

You will then be asked whether you want to fetch an existing configuration from the controller. If you are starting from scratch, as in this Quick tour, you do not need to do this. For more information see the Advanced tips on the next page.

- Click the No button to indicate that you do not want to fetch data from the digital surround controller.
Advanced tips

**Adding products by dragging them from the Resource Bar**
The most flexible way of adding products is to drag an appropriate icon from the Resource Bar (to the left of the Products page) onto the Products page:

**Fetching settings from a product**
If you have changed any settings on a product from the front panel since making a previous configuration, you can retain the settings by using the Meridian Configuration Program to fetch the configuration from the product, rather than starting from a default configuration as described above. This is also useful if you cannot locate the file on the computer.

- Connect a serial cable between the product and your PC, as described in *To connect the serial cable*, page 56.

- When the Fetch from Product dialogue box is displayed, click the Yes button.

**Performing other actions**
Right-clicking on most objects on the Products page displays a context menu of actions appropriate to that object:

For example, to delete a product:

- Right-click the product, then click Delete on the context menu.

**Note:** If you delete the controller you will need to restart the configuration from scratch.

**Displaying or changing product properties**
Many products provide a range of properties that you can change for specific situations. To display the product properties:

- Right-click the product, then click Properties on the context menu, or double-click the product.

The Properties dialogue box shows a list of the properties associated with the product, and allows you to view or change their values:

For detailed information about each of the properties refer to the Configuration chapter in the Installation Guide for the product, or the FAQs section in the on-line help. To display this, click Configuration Program Help on the Help menu.
Changing the value of a property

- Click the value of the property.
- Choose an option from the drop-down list:

  ![Dropdown List Example]

If it is a numeric property you will get a spin button rather than a drop-down list:

![Spin Button Example]

If it is an on/off property you can click the checkbox to change the value:

![Checkbox Example]

If you have changed the value of a property an asterisk (*) is shown after its name.

Reverting a property to its default value

- Right-click the property, then click **Revert to Default** on the context menu:

  ![Revert to Default Menu Option]

The menu option shows the default value.

Configuring 800 Series products

**Adding an 800 Series controller**

If you are adding an 800 Series controller a dialogue box will allow you to specify one of the product’s standard card configurations. Alternatively select **Minimal** to add a minimum set of cards at this stage, in which case you will be prompted to add further cards as you make connections to the product:

![Dialogue Box Example]

**Adding cards**

You will be automatically prompted to add cards as required when you add sources or speakers to the 800 Series product. Alternatively you can add cards explicitly if you prefer:

*Either:*

- Drag the appropriate card icon from the **861 Cards** or **800 Cards** tab in the Resource Bar (to the left of the **Products** page).

*Or:*

- Right-click the product icon, then click **Add Card**... on the context menu:
The following dialogue box allows you to specify the card type and, when appropriate, the position of the jumper identifying the card:

Initially this shows a graphic of the card positions:

**Removing a card**
- Right-click one of the outputs on the card, then click **Remove Card** on the context menu.

**Displaying the properties of a card**
- Right-click one of the outputs on the card, then click the **Properties** item on the context menu.

A **Properties** dialogue box shows information about the type of card, its slot positions, and the jumper setting:

**Displaying information about the cards**
- In the **Properties** dialogue box click the **Cards** tab.

You can also add a card, remove a card, or display a card’s properties in the **Graphic** or **Details** view by right-clicking, then clicking **Properties** on the context menu.
Products: Inserting a source

The next step is to add the sources in your system. For this Quick tour we will assume a satellite receiver is required.

- Click the **insert a source** link in the Information Bar.

An **Insert Source** dialogue box is displayed to allow you to select the type of source.

- Choose **Satellite** from the drop-down list, and click the **OK** button to add the source:

The **Connection Wizard** is then displayed to assist you in connecting the source to your other equipment:

- Leave **Yes** selected to make the recommended connections between the source and the controller.

The Meridian Configuration Program will use a set of connections which match the back panel screening of the controller to make wiring up straightforward.

- Click the **Finish** button to make the recommended connections.

The connections will be displayed on the **Products** page:

This shows the audio connection between the satellite receiver optical output and the optical input O1 on the digital surround controller, and the S-video and component video connections between the satellite receiver and the digital surround controller.

You can now proceed to add the other sources in your system in a similar way. In this example we are only inserting a single source.

See the **Advanced tips** on the next page for information about modifying these connections; eg to use analogue rather than optical for audio.
Advanced tips

**Showing a list of the recommended connections**
- Click the Details… button in the Connection Wizard dialogue box.

This shows the connections that will be made if you choose the Yes (recommended) option:

![Meridian Configuration Program](image)

**Specifying connections manually**
- Choose the No (advanced) option in the Connection Wizard dialogue box.
- Click the Next button to continue.
- Specify each connection that you want to make from the source to the controller, using the From: and To: drop down lists, then click the Connect button to make the connection:

![Connection Wizard](image)

- Click the Finish button to close the Connection Wizard dialogue box.

**Renaming a source**
You can give each source a name of up to five characters to identify it on the front-panel display:

- Right-click the source, then click Rename… on the context menu:

![Rename Source](image)

The following dialogue box allows you to enter a new name:

**Changing the MSR+ key for a source**
You can choose which MSR+ key selects each source:

- Right-click the source, then click Properties on the context menu.
- Click the Identification tab in the Properties dialogue box.
Choose the MSR+ key from the **MSR+ key** drop-down list:

- Drag between the output on the source and the input on the controller that you want to connect:

**Showing and hiding connections**

You can choose whether or not source connections are displayed by clicking the View or Hide Source Connections button in the toolbar:

**Displaying information about the style of each connection line**

- On the **View** menu, click **Legend**.

**Connecting using drag and drop**

You can also connect between any two compatible connectors using drag and drop:

**Removing a connection**

- Drag from one of the connectors and release the mouse button:

The cable connecting the two products will be removed.
Making a multichannel connection
If you are connecting a product with multichannel outputs, such as a G98DH DVD Player, to a digital surround controller with multichannel inputs, the Meridian Configuration Program can create a multichannel configuration when you drag between two appropriate connectors:

A prompt allows you to choose whether to make a single or multichannel connection.

If you choose Yes the multichannel connection will automatically be made:

Adding or removing inputs or outputs
With non-Meridian sources you can add new inputs or outputs, or remove inputs or outputs, to reflect the connectors provided by your source. For example, if your satellite receiver includes a digital coax output you can add a connector for this:

• Right-click one of the source’s existing connectors, point to Connection on the context menu, then click New… on the submenu:

The Add Connector dialogue box allows you to define the new connector.

• Specify the type of connector using the Class and Type drop-down list, enter a name, and choose Output or Input as appropriate:

• Click the OK button to add the connector.
Products: Adding speakers

The next step is to add the speakers in your system.

• Click the **insert a speaker** link in the Information Bar.

The **Insert Speaker** dialogue box allows you to select which type of speaker you want to add, and the positions in which to add it.

• Select **DSP8000** from the **Type** drop-down list.

The **Location** will automatically be set to **Front left/right**:

• Click the **OK** button to add the speakers.

The speakers will be added to the appropriate points in the layout, and the connections will automatically be made between the speakers and the controller:

• Click the **insert a speaker** link again and select **DSP5500HC** from the **Type** drop-down list to add a centre speaker:

The program will offer to add a 511 patch box to the layout to connect the Comms cables for the speakers:

• Click the **Yes** button to confirm.

• Click the **insert a speaker** link again and click **Analogue (passive)** on the **Type** drop-down list to add small analogue rear speakers:

• Click the **OK** button to add the speakers.

The Meridian Configuration Program will automatically prompt you to add an amplifier to the layout to drive the passive speakers:
• Click the Yes button.

• Click G57 on the Amplifier type drop-down list, and click the OK button to add the amplifier:

The G57 will automatically be connected up to the appropriate analogue output on the digital surround controller:

Finally insert a subwoofer into the layout:

• Click the insert a speaker link in the Information Bar and select Subwoofer from the Type drop-down list:

You can proceed to add any other speakers in your layout in a similar way.

• Click the Next link in the Breadcrumb Trail to proceed to the next page.
Advanced tips

Adding a speaker by dragging it from the Resource Bar

• Drag an icon from the Speakers tab of the Resource Bar (to the left of the Products page):

• Drop it onto the appropriate speaker position.

Adding a speaker at a specific position

• Right-click the position, point to Insert on the context menu, then click Speaker… on the submenu:

Alternatively, double-click or right-click the speaker position.

Reviewing and printing the source and speaker connections

Additional Speaker connections and Controller connections pages can be displayed to allow you to check the source and speaker connections, or print out a copy for help in wiring up the system.

• On the View menu, click Review Pages.

The Speaker connections and Controller connections pages will appear in the Breadcrumb Trail after the Soft keys page:

Displaying or changing the speaker properties

To display the speaker properties right-click the speaker symbol, then click Properties on the context menu, or double-click the speaker symbol:

You can edit the properties in the same way as for source properties.
Soft keys

The **Soft keys** page allows you to customise the soft keys for each of the G Series products in the system, starting with the controller. In this example the only applicable product is the G68ADV.

An initial recommended layout is provided for each product; for example, for a G68 this provides soft keys for each of the sources in the system, plus a DSP key in the rightmost position.

- Click the **Next** link in the Breadcrumb Trail to proceed to the next page.
Advanced tips

Changing the soft key layout

• Drag a soft key, or pair of keys, from the left-hand pane onto the set of soft keys you want to edit:

• Hold down Ctrl to insert the key(s), moving existing keys right to make space.

You can undo or redo changes to the soft key layout by clicking the Undo or Redo buttons in the toolbar:

Renaming a source

• Right-click a soft key corresponding to a source, then click Rename Source… on the context menu:

All occurrences of the source in the soft key sets will be changed.

Clearing a soft key

• Right-click the soft key, then click Remove on the context menu:

Restoring the recommended layout

• Click the Reset button for a recommended assignment of soft keys.

The first 12 soft keys correspond to the 12 MSR+ keys. Only the ones corresponding to the sources you have defined in your system will be available – the others will be greyed out. Their names will reflect the names you have given to the sources on the Products page.

Soft keys that work in pairs, such as balance, bass, treble, and bright, automatically occupy two adjacent soft key positions.
Bass management

The Bass management page specifies how bass is handled in the system for each of the three speaker layouts. The settings are automatically set to recommended values and can be ignored for a simple configuration.

Advanced tips
Meridian digital surround controllers allow you to define three different speaker layouts for use with different types of material: Music, Logic, and 5.1 Movie. The Bass management page allows you to specify how the bass is handled in each speaker layout:

You can choose whether the main front and centre speakers are specified as Large or Small for each of the Music, Logic, and 5.1 Movie speaker layouts.

The diagram to the right of each tab represents the selected speaker layout; select Display bass flow to display red arrows on the diagram indicating how the bass for each channel is handled by the speakers in the layout for either Multichannel or 2-channel sources as specified (see below).

Specifying which subwoofers are used in the layout
In the Subwoofers section you can specify how many of the subwoofers are used in the layout. Subwoofers used in the layout are indicated by a black square in the layout diagram, and subwoofers not in use are indicated by a white square.

If there are no subwoofers in the layout the front speakers must be specified as Large, and they will handle the bass for any other small speakers in the layout.

• Click the Next link in the Breadcrumb Trail to proceed to the next page.

Specifying which speakers should handle the bass
The Main speakers and Surround speakers sections allow you to specify whether each speaker is Large, in which case it will handle the bass for that channel, or Small, in which case the bass for that channel will be redirected to another speaker.
If there is one subwoofer in the layout, and you have specified the front speakers as **Small**, the subwoofer will be used for the bass and LFE. If the front speakers are **Large** and the centre speaker is **Small**, the **Front subwoofer** option allows you to choose from the following options:

<table>
<thead>
<tr>
<th>Option</th>
<th>Use of subwoofer</th>
</tr>
</thead>
<tbody>
<tr>
<td>LFE Only *</td>
<td>Handles just the LFE.</td>
</tr>
<tr>
<td>Bass-neutral (centre)</td>
<td>Handles all the bass.</td>
</tr>
<tr>
<td>Bass-heavy (mono)</td>
<td>Shares the bass with the front speakers.</td>
</tr>
</tbody>
</table>

* Not available for the **Logic** layout.

If the layout includes two or more subwoofers, the subwoofers will handle the bass and LFE for the system irrespective of the size of the front speakers.

**Specifying the crossover settings**
For each speaker layout the **Crossover** option allows you to set the crossover frequency for the subwoofers. This is ignored if the subwoofers are only handling the LFE.

The Meridian digital surround controllers provide very high-quality crossovers for the subwoofers, and for best results you should use these instead of the subwoofer’s crossover. To do this set the subwoofer **Width** property to **Narrow**, and remove any crossover in the subwoofer, or set it to the highest setting (e.g., 200Hz). If you cannot do this, set the subwoofer **Width** property to **Wide** to switch off the digital surround controller’s crossover and use Sine/Sub mode to match the subwoofer’s crossover frequency.

The **LFE low pass filter** option sets the low-pass filter for the LFE channel, for the Music and 5.1 Movie speaker layouts.

- Click the **Reset** button to reset the crossover and low-pass filter to recommended values in all layouts.

**Specifying the THX settings**
The **THX settings** tab allows you to specify that your subwoofers are **THX Ultra2 approved**, and select **Boundary gain compensation** to reduce bass levels if listeners are close to a wall. Click the **THX Defaults** button to set the crossover and low-pass filter to 80Hz in all layouts, as recommended by THX.
Speaker distances

The Speaker distances page gathers information about the relative positions of the full-range speakers in your system, and the distance of each speaker from the listening position. First choose the units you would like to work in.

- On the View menu, click Metric or Imperial.
- Measure the distance to each speaker in the specified units.
- Drag the speakers until they are in the correct positions, with the correct distance shown on each speaker icon.

This information is used to calculate the speaker delays, and generate the aspect ratio and rear speaker separation.

Advanced tips

- Click the ▲ or ▼ buttons to the left of the scale indicator to change the scale of the whole diagram.
- Click a speaker to select it, and then use the arrow keys to move the speaker in the corresponding direction.
- Use Ctrl ↑ and Ctrl ↓ to move a speaker away from or towards the listening position. Hold down Shift to move all the speakers at once.
- Use Ctrl ← and Ctrl → to move a speaker in a circle around the listening position.
- Click the Scale to Fit button to increase the scale so the loudspeakers fit neatly in the window.
Speaker calibration

The **Speaker calibration** page allows you to calibrate the speakers attached to your controller while listening to the product. You can use the Meridian Configuration Program to step between speakers, and change the properties of the currently selected speaker, using the on-screen buttons.

**To connect the serial cable**
- Connect one end to the RS232 connector on the back panel of the controller in your system.
- Connect the other end to one of the serial ports on your computer.

The default is COM1. If you have to use a different port see **Advanced tips** overleaf.

The **Speaker calibration** page shows a list of the speakers connected to your controller and the current distance, level, and phase settings of each speaker:

- Click the Start button.
  The Meridian Configuration Program stores the settings you have created to the controller and then automatically starts the calibration sequence so you can tune your speakers by ear using a series of listening tests:

  - Use the ◀, ►, ▲, and ▼ buttons on the **Speaker calibration** page to control the product; refer to the appropriate guide for your product for details of the calibration procedure.

  The product’s display is shown above the arrow keys on the **Speaker calibration** page.

  - When you have completed the calibration procedure click the Exit button on the **Speaker calibration** page, or the Off button on the product, to fetch the calibration settings from the controller.

  The calibration settings will be shown in the speaker list on the **Speaker calibration** page.

  - Click the Next link in the Breadcrumb Trail to proceed to the next page.
Advanced tips

Specifying the serial port

- Click the Options… button on the Pre-calibration store page to display the Comms Port tab on the Options dialogue box:

![Options dialogue box]

- Select the port you want to use from the drop-down list and click the OK button.

A warning triangle will be displayed against the port number if it is already in use by another program.
Room correction

The **Room correction** page runs the Meridian Room Correction procedure. This is optional and you can skip this stage by clicking the **Next** link in the Breadcrumb Trail:

For information about running the Room Correction procedure see the chapter *Room Correction*, page 65.

- Click the **Next** link in the Breadcrumb Trail to proceed to the next page.
DSP presets

The **DSP presets** page shows a list of the DSP presets available to the digital surround controller, and allows you to edit the properties of each preset. You can also edit the preset mappings, to change the default DSP preset selected for each source and each audio format.

For a simple configuration you can skip this page.

- Click the **Next** link in the Breadcrumb Trail to proceed to the next page.

**Advanced tips**

The **Preset Properties** pane shows the name and value of each of the preset properties:

![Preset Properties](image)

Some properties apply globally to all presets; to edit these select **All presets** in the **Preset Properties** list.

**Displaying and changing the properties for a preset**

- Select the preset in the left-hand list.

You can then edit the properties in exactly the same way as for product properties; see *Changing the value of a property*, page 9, or *Reverting a property to its default value*, page 9.

For full information about the parameters for each DSP preset see the Installation Guide for your product.

**Creating user-defined presets**

You can create additional user-defined presets with specific properties:

- Right-click the preset you want to use as the basis for the new preset, point to **Copy to** on the context menu, then click **New Preset** on the submenu:

![New Preset](image)

If you have already created one or more user-defined presets, you also have the option of overwriting an existing user-defined preset.

**Restoring presets to their default values**

- Right-click the preset, then click **Revert to Defaults** on the context menu:

![Revert to Defaults](image)

- Alternatively click **Revert All to Defaults…** to revert all the built-in and user-defined presets to their default properties.
Changing the preset mapping

The **Preset Mapping** pane shows the default DSP preset selected for each source and each audio format.

- Click the preset in the appropriate audio format column and select the preset you want to use for the default from the drop-down list:

![Preset Mapping Table]

---

*Image Credit: Meridian Audio Limited*
For each product in your system that includes a radio tuner, a Tuner presets page allows you to define the legend displayed on the front panel display for each tuner preset, and the waveband, frequency, and audio mode it selects:

- Click the checkbox in the Number column to enable the corresponding tuner preset, and edit the Legend, Frequency, and Audio Mode as required.

- Set Display Legend to No if you want the display to show the RDS station name, or frequency if no RDS station name is available, rather than a predefined legend.

When you have edited the tuner presets as required:

- Click the Next link in the Breadcrumb Trail to proceed to the next page.
Store settings

This page stores the settings to the controller:

- Connect the serial cable.

For more information see *To connect the serial cable*, page 56.

- Click the **Start** button to store the settings.

When the store has completed:

- Click the **Next** link in the Breadcrumb Trail.
Finish

The Finish page confirms that you have successfully completed the configuration of your system.

Save a copy of your configuration

Although a copy of the configuration document is saved in the controller for your system, it is recommended that you also save a copy of the final configuration document on your PC, with an appropriate name, so that you can refer to it again at a later date, if necessary.

• On the File menu, click Save, or click the Save button in the toolbar:
Room Correction

Introduction

The Meridian Room Correction procedure creates a set of one or more room correction profiles matched to your room. These are then downloaded to the digital surround controller and can be associated with particular presets, or selected from the front panel. Selecting a profile applies a set of digital filters individually to each speaker to achieve the required room correction.

If you use a single speaker layout you may choose to have one room correction profile, and use this with all presets. If you have separate speaker layouts for use with Music, Logic, and 5.1 Movie sources you will need to calculate a separate room correction profile for each speaker layout. These will then be selected automatically by the digital surround controller depending on the audio format. In addition, you can create separate room correction profiles to take account of changes to the room, such as the position of large items of furniture, or with curtains open or closed.

How room correction profiles are calculated

Calculating a room correction profile is a time-consuming and mathematically complicated process. Meridian Room Correction performs the necessary sequence of measurements and calculations automatically, using a PC connected to the digital surround controller, with the minimum of interaction. It works as follows:

First you need to set up a microphone close to the listening position, and connect this to an appropriate input on the digital surround controller. On the C61R, G61R, or G68 Digital Surround Controller this will be A8 (L). On the 861 Reference Digital Surround Controller this can be any analogue input; input A1 on card IA00 is chosen by default.

Usually a standard sound pressure level meter will be used as a microphone; this can be the same one used for setting the
speaker levels during the Calibration procedure. After an initial short test sequence, designed to check that the microphone is set up correctly, a test signal is presented to each loudspeaker and measured at the microphone to determine how the room response affects the sound from each speaker. This stage of the procedure takes about one minute per speaker, and can be left to run unattended.

Finally, after a complete set of measurements has been made for each channel and speaker layout, the program calculates a set of filters for each channel, and stores these to the digital surround controller. A copy of the measurements, together with the calculated filters in each profile, is also stored on the PC so they can be accessed at a later date if required.

Examples

Most domestic rooms tend to be rectangular, or at the very least have one pair of parallel facing walls, and unfortunately these are the ideal conditions for low frequency resonances within the room. The wavelength of low frequency sounds is relatively large, so even bookcases and curtains act as an almost perfect mirror for low frequencies.

Frequencies close to the resonant frequency, determined by the distance between the two reflective surfaces, will sound louder and take longer to decay than other frequencies. In practice this means that when listening to music some notes will sound louder, giving a roughness or unevenness to the sound.

Other problems that can be corrected by room correction are imbalances between the speakers due to positioning constraints.

For example, in an L-shaped room one loudspeaker may need to be close to the wall whereas its partner is in an open area, giving rise to an imbalanced sound field.

Unless your listening room has been specially designed for acoustic performance, you will almost certainly hear distinct benefits after incorporating room correction into your digital surround controller, and if the room has major resonances or imbalances the difference should be quite dramatic.

You can find more information about the theory behind Meridian Room Correction on the Meridian Web Site at: http://www.meridian-audio.com/p_rc.htm
This section explains how to create a basic room correction using default settings.

The room should be as you would normally use it for listening. Close/open doors, close/open curtains, and position your screen and furniture as they would normally be for listening.

If you are creating room correction profiles as part of the initial configuration of your system, follow the procedure described in this chapter when you get to the Room correction page in the sequence of Meridian Configuration Program pages.

If you decided not to create room correction profiles when you first configured the system, start from the saved configuration file, or fetch the configuration from the digital surround controller, and then step forward to the Room correction page in the Breadcrumb Trail:

To set up the room correction options
The first step is to specify options for the room correction procedure.

- Click the Options… button to display the room correction options:

  ![Room Correction Options](image)

  - Specify the sensitivity for the microphone.

  When first running room correction it is recommended that you leave this at its initial setting.

  If you are using an 861 Reference Digital Surround Controller you will also need to specify the card and input you are using for the microphone.

  - Specify the maximum number of measurement retries; by default this is set to 3, but you can enter a lower value to reduce the time taken by retries.

  - Click the OK button to confirm the options you have specified.
Room correction

- If you are using a C61R, G61R, or G68 Digital Surround Controller connect the SPL meter or microphone to the analogue input A8 (L).
- If you are using an 861 Reference Digital Surround Controller connect the SPL meter or microphone to the analogue input you specified in the Options dialogue box.
- Position the SPL meter or microphone at the listening position and, if you are using an SPL meter, switch it on.

When using an SPL meter, the C weighting must be used. The 90dB range is recommended unless the loudspeakers measured less than 75dB SPL during the calibration, in which case the 80dB range is recommended.

To run the Auto Build procedure
- Click the Start... button.

A countdown dialogue box will give you time to leave the room:

A test tone will then be presented to each loudspeaker in turn for each of the distinct layouts defined in the digital surround controller configuration file.

Depending on the number of channels and layouts in your configuration this may involve up to 24 tests and take up to 20 minutes to complete.

The Room correction page shows information about each test and a progress bar indicates the percentage completed:

When the measurements have been completed the following dialogue box allows you to apply the room correction profiles:

- Click the Yes button to assign an appropriate profile to each preset.
Each preset will be assigned the profile designed for the layout used with the preset. The wizard creates profiles called Mus, Log, and Mov for the Music, Logic, and 5.1 Movie speaker layouts respectively. If two or more layouts share the same settings, the profile name will include all the layouts it applies to; for example, MusLog or MusLogMov.

What next?

You have now completed the Auto Build procedure, which creates a recommended set of room correction profiles. In most situations this is all you need to do in order to take advantage of room correction with your digital surround controller.

The next sections describe some of the more advanced options available on the Room correction page, including the options for re-measuring channels, selecting different filter parameters, and manually editing the filters.
The **Measurements** tab shows a list of the measurement sets you have created. Each measurement set shows the channels measured for each of the speaker layouts set up in the digital surround controller configuration:

You can also create additional measurement sets; for example to cater for different furniture layouts. For each measurement you can view the effect of applying different profiles.

The **Measurements** tab gives you the option of viewing or comparing the measurements. You can also repeat the measurements for individual speakers; for example, if an external noise interfered with the test procedure.

**To view the measurements**
- Right-click the measurement you want to view, then click **View Plot** on the context menu, or double-click the measurement:

The **Plot Measurement** window allows you to see the measurement for the specified channel:

- Select the profile from the **Profile** drop-down list.

To show the uncorrected response select **Bypassed**.

You can compare the effect of two **Profile** settings on the same plot by clicking one of the split pane buttons:
You can then set different **Profile** settings for each plot:

**Waterfall plot**

Shows the response of the room to a series of short sine wave pulses of frequencies between 0 and 250Hz. It shows how the response decays over time at each of those frequencies.

The ideal waterfall plot would have a smooth profile and decay evenly to a low level within 0.5 to 0.8 seconds. Peaks or dips in the waterfall plot indicate resonances or absorption at the corresponding frequency. Ridges extending forwards in time indicate reverberation at the corresponding frequency.

The room correction profile aims to identify the strongest resonances and to reduce the decay time of each strong resonance to the average decay time for the room.

**Impulse response**

Shows the response over time of the loudspeaker to a click. The curve shows a maximum just after time zero, and then decays rapidly depending on the amount of reverberation in the room. Any additional peaks in the response indicate resonances set up by the initial impulse.
Low frequency response

Shows the loudspeaker-room response to a low frequency sine wave, swept between 0 and 250Hz. The ideal low frequency response would be smooth. A peak in the response indicates a resonance at the corresponding frequency. A dip in the response indicates absorption or cancellation at the corresponding frequency.

To display the value of the curve at any point

- Drag to position the vertical red cursor.

The values of the curve at the current point are displayed in the top right-hand corner of the plot:

In the Waterfall Plot the values displayed correspond to Time = 0.

To change the axes

- Click the Axes… button to display the axis parameters.

The Data Range section on each tab shows the range of the data measured by the Room Correction procedure.

The View Range section on each tab allows you to set the range of the Frequency, Level, Time, and Amplitude axes as appropriate for each plot:

To repeat measurements

You can repeat measurements for one or more channels; for example, if an external sound interfered with an existing measurement.

- Right-click the measurement you want to repeat, then click Re-measure… on the context menu:
The following dialogue box allows you to select which channels you want to repeat:

- Select the channels you want to repeat.
- Click the OK button to confirm your selection.

The following dialogue box warns you that the existing measurements will be overwritten:

- Click the Yes button to continue, or the No button to retain the existing measurements.

The following dialogue box then indicates how long the selected measurements will take, and gives you an opportunity to leave the room before the test sequence begins:

**To create multiple measurements**
You can create additional measurement sets to take account of different configurations of the room, such as with curtains open or closed.

- Right-click the Measurements tab, then click New on the context menu.

A new measurement set will be added to the list, and the Speakers to Measure dialogue box will be displayed to allow you to specify which speakers you want to measure.

- Click the OK button to proceed with the measurement.

**To rename a measurement set**

- Right-click the measurement set, then click Rename on the context menu, or press [F2].
- Edit the name as required and press [Enter].

**To delete a measurement set**

- Right-click the measurement set, then click Delete on the context menu, or select the measurement set and press [Delete].
Viewing profiles

The Profiles tab shows a list of the profiles that have been calculated, together with the number of filters used for each profile and the number of remaining filters available:

<table>
<thead>
<tr>
<th>Profile name</th>
<th>Layout</th>
<th>Filters</th>
<th>Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Movie</td>
<td>5.1</td>
<td>49</td>
<td>11</td>
</tr>
<tr>
<td>Logic</td>
<td>Logic</td>
<td>49</td>
<td>11</td>
</tr>
<tr>
<td>Music</td>
<td>Music</td>
<td>57</td>
<td>9</td>
</tr>
</tbody>
</table>

Each profile can use up to 60 filters; if a profile requires more filters than this, filters will be allocated in order of priority.

Each channel is limited to a maximum of 20 filters; a two-channel system therefore has a limit of 40 filters.

To build the filters for a profile

- Right-click the profile in the Profiles list, then click Build... on the context menu:

  ![Build Filters](image)

The following dialogue box then allows you to specify a target decay time:

- Leave Automatic selected, or click Manual and enter a delay time between 100 and 1000 milliseconds.

- Click the OK button to continue.

If you have more than one measurement set the following dialogue box is displayed to allow you to select which measurement set you want to use for the filters:

![Select Measurement Set](image)

Note: The process of building filters is computationally intensive, and it is recommended that you do not try to run other programs at the same time.

As the filters are calculated the status is shown in the lower half of the Room correction page.

To store profiles temporarily to the digital surround controller

You can store profiles temporarily to the digital surround controller so you can listen to them while using Meridian Room Correction.

- Right-click the profile in the Profiles list, then click Store on the context menu.

The lower half of the Room correction page shows the progress as the profile is stored to the digital surround controller.
Editing filters

After building the filters for a profile you can edit the filters numerically or graphically to adjust their parameters, or change the response of each filter.

**Note:** This should only be attempted by users with an understanding of filter design. It is strongly recommended that you copy the profile first and then edit the copied profile. There is no undo function within Edit filters.

**To display the filters for a profile**
- Right-click the profile in the Profiles list, then click Edit… on the context menu, or double-click the profile in the Profiles list.

The Edit Filters window shows a numeric or graphical display of the filters in the profile.

- Choose a channel from the Channel drop-down list to display the filters for that channel, or choose All Channels to show all the filters for all channels on a single display.

**To view the filters numerically**
- Select Numeric.

The columns give the Centre Frequency (Hz), Gain (dB), Filter Bandwidth (Hz), Room Mode Bandwidth (Hz), Equalized Bandwidth (Hz), $RT_{60}$ (s), Target $RT_{60}$ (s), and Channel:

![Filter Columns](image)

The fields on the left of the filters list allow you to adjust the Frequency, Gain, and Width of the currently selected filter.
To view the filters graphically

• Select **Graphical**:

The currently selected filter is displayed with a red vertical bar at the filter centre frequency, and a rectangle indicating the bandwidth and gain of the filter.

You can edit each parameter of the filter interactively as described in the following sections.

**Centre frequency**

• Drag the vertical bar to the left or right on the filter response curve, or press [←] or [→]:

**Gain**

• Drag the base of the filter, or press [↑] or [↓]:

Alternatively if the filters are close together you can step right or left between filters using **Ctrl Tab** or **Ctrl Shift Tab**.

To edit a filter

• Select the filter you want to edit by clicking on the filter:
**Bandwidth**
- Drag one of the sides of the filter, or press Ctrl← or Ctrl→:

![Diagram](image)

**To add a filter**
- Click the Add button on the **Numeric** or **Graphical** tab:

![Add Button](image)

- Edit the parameters of the filter as described above.

**To delete a filter**
- Select the filter you want to delete in the **Filters** list, or on the **Graphical** tab.
- Press Del, or click the Delete button:
Changing settings at a later date

This section describes how to change the room correction or configuration settings of the digital surround controller at a later date, subsequent to storing the original version.

**Note:** You can only edit or add to existing profiles if you have the MSL file originally used to design the profile. If you do not have the original MSL file you will need to make new measurements, create new profiles, and then store these to the digital surround controller.

**To edit an existing profile, or add a new profile**
- Run the Meridian Configuration Program and open the MSL file used to create the original profiles.

If you have changed settings on the digital surround controller since the original profiles were made, and you want to retain these changes:

- On the **File** menu, click **Save as** to save the MSL file under a new name.

To fetch the settings from the digital surround controller:

- On the **Products** page, right-click the controller, then click **Fetch…** on the context menu.
- Step forward to the **Room correction** page in the Breadcrumb Trail.
- Select the **Profiles** tab, and proceed as described in *Editing filters*, page 75.

**To change other settings if you have the original MSL file**
- Run the Meridian Configuration Program and open the original MSL file.

If you want to keep the original settings:

- On the **File** menu, click **Save as** to save a copy of the MSL file under a new name.
- Change the settings as required and store the new settings to the digital surround controller.

For more information about changing configuration settings using the Meridian Configuration Program refer to the Installation Guide for your product.

**To change other settings if you have lost the original MSL file**
If the original MSL file is not available you will be able to change all non-room correction settings, and which room correction profile you want to use with a given preset.

- Start a new document.
- On the **File** menu, click **Fetch…** to fetch the settings from the digital surround controller.

The newly created file will contain the profile labels and these can be used to choose the profile you want to use with a given preset. It will not contain measurements or profile data for Meridian Room Correction. If you use Meridian Room Correction to create new
measurements and profiles and store these to the digital surround controller, the old profiles will be overwritten.

- Change the settings as required and store the new settings to the digital surround controller.

For more information about changing configuration settings using the Meridian Configuration Program refer to the Installation Guide for your product.

**To change other settings directly on the digital surround controller**

For information about changing other configuration settings on the digital surround controller refer to the Installation Guide for your product.

After making changes on the digital surround controller you can add these changes to an existing MSL file as follows:

- Run the Meridian Configuration Program and open the original MSL file.
- On the **Products** page, right-click the controller, then click **Fetch...** on the context menu to fetch the new settings from the digital surround controller.

If you want to keep the original settings:

- On the **File** menu, click **Save as** to save a copy of the MSL file.
Room correction
Control Window

The Meridian Control Window emulates an MSR+ to allow you to control a Meridian product from a PC via a serial or USB cable.

Running the Meridian Control Window

• Click Start, point to Programs, Meridian, then click Control Window:

The Meridian Control Window will be displayed:

This provides the following tabs:

<table>
<thead>
<tr>
<th>Tab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSR+</td>
<td>Emulates an MSR+ Controller.</td>
</tr>
<tr>
<td>MSR</td>
<td>Emulates an MSR Controller.</td>
</tr>
<tr>
<td>Command</td>
<td>Allows you to send predefined commands, and optionally specify arguments for the commands, and then see the response from the product in a terminal-style window.</td>
</tr>
</tbody>
</table>
Emulating an MSR+ or MSR

To send a command to the product
• Click the corresponding button on the Control Window.

The bar above the buttons shows the response from the product, corresponding to the front panel display.

To enter a function key
Either:
• Click the Fn button followed by the button you want to enter.

Or:
• Right-click the button or click the button while holding down Ctrl.

The legends of the buttons change to show the function options.

To lock the Fn button down
• Click the Lock button:

Subsequent button presses will then enter function keys.

Press the Lock button or Fn button again to release the Lock button.

To see the command corresponding to each button
Each button transmits a two-letter code to the product.

• Point to the button with the mouse pointer.

A tooltip shows the description of the key followed by the key's command:

You can also give commands by typing the key's command on the computer keyboard. Note: Commands are case sensitive.

For example, to select the CD source type CD.

In addition, the following keys on the keyboard provide shortcuts for the menu buttons:

<table>
<thead>
<tr>
<th>Computer key</th>
<th>MSR button</th>
</tr>
</thead>
<tbody>
<tr>
<td>↑, ↓, ←, →</td>
<td>▲, ▼, ◀,▶</td>
</tr>
<tr>
<td>←</td>
<td>Enter</td>
</tr>
<tr>
<td></td>
<td>Return</td>
</tr>
</tbody>
</table>

To disconnect the Control Window
• Click the Disconnect button.

To connect the Control Window
• Select the COM port you want to use from the Port drop-down list.
• Click the Connect button.

A warning triangle next to a port number indicates that it is in use by another application.

To close the Control Window
• Click the Close button or press Esc.
Using the Command tab

The **Command** tab lists all the available commands under four headings: **Source**, **General**, **Function + MSR keys**, and **Preset**.

To display the commands
- Click the + button to the left of one of the headings to show the commands under that heading.
- Double-click the command you want to send.

To send a command with arguments
- Click the command in the **Command** list.

You will be prompted for the argument in the box below the **Command** list.

• Enter the argument from the keyboard:

• Click the **Send** button, or press →, to enter the command.
DSP presets

This chapter gives details of the DSP presets and their parameters, and describes how to modify them.

DSP presets

The C61R Digital Surround Controller provides two types of DSP preset. One set is available if the input is two-channel; eg from a traditional stereo source or a two-channel DVD-A. The other set is available if the input is 5.1 or 6 channels of discrete audio; eg from a Dolby Digital DVD-V or a music DVD-A. The DSP presets available in each set are described in the following pages.

Speaker layouts

The C61R Digital Surround Controller provides great flexibility in the way in which you use the loudspeakers in your system. For example, the speaker step of the Configuration Wizard allows you to use the subwoofers and centre speaker only for movie material see Configuring speakers, page 20. With the Meridian Configuration Program you can specify three different speaker layouts, each with a different use of subwoofers and centre speaker:

<table>
<thead>
<tr>
<th>Layout</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music</td>
<td>For music presets: two-channel (eg Trifield) and multichannel (eg Discrete).</td>
</tr>
<tr>
<td>Logic</td>
<td>For two-channel movie presets: eg PLIIx Movie.</td>
</tr>
<tr>
<td>5.1 Movie</td>
<td>For multichannel movie presets: eg Cinema.</td>
</tr>
</tbody>
</table>
Standard parameters

All DSP presets (except Mono and Direct) provide the following standard parameters.

Individual DSP presets provide additional parameters, to allow you to adjust specific features provided by that preset. For full details refer to information about each preset later in this chapter.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
<th>Default</th>
<th>What it changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treble*</td>
<td>-10dB to +10dB</td>
<td>+0dB</td>
<td>The slope of the frequency response.</td>
</tr>
<tr>
<td>Bass*</td>
<td>-5dB to +5dB</td>
<td>+0dB</td>
<td>The bass response.</td>
</tr>
<tr>
<td>Phase*</td>
<td>+ or -</td>
<td>+</td>
<td>The phase of all loudspeakers.</td>
</tr>
<tr>
<td>Axis†</td>
<td>-2 to +3</td>
<td>-1</td>
<td>The vertical balance.</td>
</tr>
<tr>
<td>Balance</td>
<td>&lt;10 to 10&gt;</td>
<td>&lt;0&gt;</td>
<td>The L-R balance.</td>
</tr>
<tr>
<td>HS Output?*</td>
<td>Y or N</td>
<td>Y</td>
<td>Select Y for high-rate audio, upsampled if necessary. Select N for standard-rate audio, downsampled if necessary.</td>
</tr>
<tr>
<td>Centre</td>
<td>-3.0dB to +3.0dB</td>
<td>+0.0dB</td>
<td>The level of the centre.</td>
</tr>
<tr>
<td>Depth</td>
<td>-2.5ms to +5.0ms</td>
<td>+0.0ms</td>
<td>The delay of the centre.</td>
</tr>
<tr>
<td>Rear</td>
<td>-30dB to +10dB</td>
<td>+0dB</td>
<td>The level of the rears.</td>
</tr>
<tr>
<td>Sides</td>
<td>-30dB to +10dB</td>
<td>+0dB</td>
<td>The level of the sides.</td>
</tr>
<tr>
<td>R Delay</td>
<td>0ms to 30ms</td>
<td>Varies</td>
<td>The delay of the rears.</td>
</tr>
<tr>
<td>S Delay</td>
<td>0ms to 30ms</td>
<td>Varies</td>
<td>The delay of the sides.</td>
</tr>
<tr>
<td>LipSync</td>
<td>0ms to 30ms</td>
<td>0ms</td>
<td>The sync. delay.</td>
</tr>
<tr>
<td>RC</td>
<td>As defined</td>
<td>Bypassed</td>
<td>The Room Correction profile, or Bypassed for no room correction.</td>
</tr>
</tbody>
</table>

*These parameters apply to all DSP presets.
†Axis is only available with Meridian DSP loudspeakers.
DSP presets for two-channel material

The C61R provides several signal processing options for two-channel material. The Music DSP presets are designed for use with music from sources such as CD, radio, or two channel DVD-A:


The Logic DSP presets are designed for use with film soundtracks or TV programmes:

- PLIIx Movie, PLIIx THX, TV Logic, and Mono.

The Music and Logic DSP presets use the Music and Logic speaker layout respectively; see Speaker layouts, page 85.

**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 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**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Options</th>
<th>What it changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centre</td>
<td>Flat, EQ1-3</td>
<td>The timbre of the centre loudspeaker.</td>
</tr>
<tr>
<td>Width†</td>
<td>0-1.5</td>
<td>The width of the image.</td>
</tr>
<tr>
<td>Surr. Rear</td>
<td>Surr. Rear, Surr. Side, Surr. All</td>
<td>Switches the surround signal between the side and rear speakers.</td>
</tr>
<tr>
<td>R Filter</td>
<td>Off, 1kHz, 3kHz, 7kHz</td>
<td>The cutoff of high frequencies from the rear surrounds.</td>
</tr>
<tr>
<td>S Filter</td>
<td>Off, 1kHz, 3kHz, 7kHz</td>
<td>The cutoff of high frequencies from the side surrounds.</td>
</tr>
</tbody>
</table>

†Trifield only.
Ambisonics
The Ambisonics DSP preset can decode 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 controller.

Ambisonics 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 soundfield 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 controller uses accurately matched, frequency-dependent, phase-amplitude matrices to decode the signal and construct the signals for each speaker feed.

The fundamental difference between Ambisonics surround sound and conventional stereo is that the signals from all the speakers combine to produce a coherent soundfield 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
Super 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 DSP preset parameters

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

*Super only.
†Ambisonics only.
**MusicLogic**

MusicLogic is a music DSP preset based on Pro Logic II with the addition of user-adjustable steering, designed to provide an exciting experience with many types of studio-produced music.

**MusicLogic DSP preset parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Options</th>
<th>What it changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roll</td>
<td>Off, Low, Med, Max</td>
<td>The degree of left-right steering.</td>
</tr>
<tr>
<td>Yaw</td>
<td>Off, Low, Med, Max</td>
<td>The degree of front-rear steering.</td>
</tr>
<tr>
<td>Steered All</td>
<td>Steered Rear, Steered Side, Steered All</td>
<td>Which of the four surround channels are generated by steering.</td>
</tr>
</tbody>
</table>

**PLIIx Music**

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

**PLIIx Music DSP preset parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Options</th>
<th>What it changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steered All</td>
<td>Steered Rear, Steered Side, Steered All</td>
<td>Which of the four surround channels are generated by steering.</td>
</tr>
<tr>
<td>Width</td>
<td>0 to 7</td>
<td>The centre spread, where 0 is full centre and 7 is full left and right.</td>
</tr>
<tr>
<td>Dimension</td>
<td>-3 to +3</td>
<td>The spatial soundfield, where -3 puts the balance to the rear of the room and +3 puts it to the front.</td>
</tr>
<tr>
<td>Panorama</td>
<td>No, Yes</td>
<td>Extends the front stereo image to include the surround speakers, providing a wrap-around effect new to Pro Logic.</td>
</tr>
</tbody>
</table>
**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, bypassing any spatial processing and bass management.

There are no additional DSP preset parameters for Stereo and Direct.

**PLIIx Movie and PLIIx THX**
PLIIx Movie and PLIIx THX use the Dolby Pro Logic IIx DSP processing mode, and are the recommended choice for Dolby Surround encoded material. They also give excellent results with two-channel sources not specifically encoded for Dolby Surround, including two-channel Dolby Digital sources.

Pro Logic IIx re-creates 7.1-channel movie surround from the two-channel source, using improved decoding techniques that preserve the directness of the soundfield, resulting in enhanced image stability compared with the original Pro Logic decoding. Meridian’s implementation of Pro Logic IIx uses proprietary code based on 48-bit precision to give outstanding clarity.

The PLIIx THX DSP preset uses the same PLIIx processing as PLIIx Movie, but adds THX Cinema processing. THX is a set of standards and technologies developed by Lucasfilm Ltd. with the aim of making your experience of the film soundtrack as faithful as possible to what the director intended.

Re-equalisation is used to restore the correct tonal balance for watching a film soundtrack in a small home environment.

Timbre matching filters the information going to the surround speakers so that they more closely match the tonal characteristics of the sound coming from the front speakers. This ensures seamless panning between the front and surround speakers.

THX can also be used with the 5.1 Movie DSP presets; see **THX**, page 93.

**PLIIx Movie and PLIIx THX DSP preset parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Options</th>
<th>What it changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surrounds</td>
<td>Rear, Side, All</td>
<td>Which of the four surround channels are generated by steering.</td>
</tr>
<tr>
<td>Pro Logic</td>
<td>Off, On</td>
<td><strong>On</strong> selects an emulation of the original Pro Logic decoding.</td>
</tr>
</tbody>
</table>
**TV Logic**

TV Logic is a Logic preset based on Pro Logic IIx with the addition of user-adjustable steering, designed to give higher intelligibility and a more appropriate spatial presentation for studio-based TV material.

**TV Logic DSP preset parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Options</th>
<th>What it changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roll</td>
<td>Off, Low, Med, Max</td>
<td>The degree of left-right steering.</td>
</tr>
<tr>
<td>Yaw</td>
<td>Off, Low, Med, Max</td>
<td>The degree of front-rear steering.</td>
</tr>
<tr>
<td>Surrounds</td>
<td>Rear, Side, All</td>
<td>Which of the surround channels are generated by steering.</td>
</tr>
</tbody>
</table>

**Mono**

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

- Only one of two input channels, such as when different languages or material are carried on each channel.
- A combined version of the two input channels, such as 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**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Options</th>
<th>What it changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academy</td>
<td>Off or On</td>
<td>Select <strong>On</strong> to include an equalisation (recommended by Lucasfilm Ltd) to correct for a high-frequency balance in some old mono films.</td>
</tr>
<tr>
<td>Party?</td>
<td>No or Yes</td>
<td>Select <strong>Yes</strong> to play the mono signal through all speakers, including subwoofers.</td>
</tr>
</tbody>
</table>
DSP presets for multichannel material

Multichannel audio signals can come from either encoded data streams (such as Dolby Digital) or as discrete channels from a DVD player. If you are using Meridian SmartLink then all formats will reach the C61R as discrete channels. With suitable loudspeakers the C61R can upsample these to provide a more enjoyable surround experience.

The C61R Digital Surround Controller will automatically select the right decoder algorithm and present the same set of preset choices for all streams. **Note:** Some presets are only available if there are four surround speakers in the system.

There are four multichannel Music presets:

- Discrete, PLIIx Mus6, THX Music, and Ambisonics B format (discrete inputs only).

There are five multichannel Movie presets:

- Cinema, PLIIx Mov6, THX, THX Surround EX, and THX Ultra2 Cinema.

The multichannel Music presets all use the Music speaker layout and the multichannel Movie presets all use the 5.1 Movie speaker layout; see *Speaker layouts*, page 85.

**Cinema**

The Cinema preset is recommended for listening to multichannel movie soundtracks when no further processing is required.

**Discrete**

The Discrete preset is similar to Cinema, except that it uses the Music speaker layout and sets the LFE level to -10dB.

### Discrete and Cinema DSP preset parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Options</th>
<th>What it changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2+2+2*</td>
<td>Off, 5.1, Side, 7.1</td>
<td>Allows you to specify how DVD Audio channels 3+4 should be interpreted: Off ignores them, 5.1 and 7.1 use them for centre and LFE, Side uses them for the side speakers, 7.1 adds side speakers to 5.1.</td>
</tr>
<tr>
<td>Surround†</td>
<td>Surr. Rear, Surr. Side, Surr. All</td>
<td>Allows you to specify which speakers the surround channels should be sent to in a system with four surrounds.</td>
</tr>
<tr>
<td>R Filter</td>
<td>Off, 1kHz, 3kHz, 7kHz</td>
<td>The cutoff of high frequencies from the rear surrounds.</td>
</tr>
<tr>
<td>S Filter</td>
<td>Off, 1kHz, 3kHz, 7kHz</td>
<td>The cutoff of high frequencies from the side surround.</td>
</tr>
<tr>
<td>LFE</td>
<td>-28dB to 0dB</td>
<td>The relative level of the LFE bass channel.</td>
</tr>
</tbody>
</table>

*Discrete only.
†Cinema only.
THX
As with the PLIIx THX DSP preset, THX re-equalises 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. It can be used whether or not your other equipment is THX approved.

THX DSP preset parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Options</th>
<th>What it changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surround</td>
<td>Surr. Rear, Surr. Side, Surr. All</td>
<td>Switches the surround signal between the side and rear speakers.</td>
</tr>
</tbody>
</table>

PLIIx Mov6, THX Surround EX, PLIIx Mus6, THX Ultra2 Cinema, and THX Music
These presets are available if you have four surround speakers. They use Dolby Pro Logic IIx, Dolby Surround EX, and THX Ultra2 Cinema processing to generate multiple signals for larger home theatres.

PLIIx Mov6 uses extended PLII technology from Dolby to generate four surround signals from traditional multichannel source material like Dolby Digital 5.1. It is intended for use with movie soundtracks.

PLIIx Mus6 also creates four surround signals; it is intended for multichannel music playback from sources such as DVD-A or SACD music discs.

THX Ultra2 Cinema and THX Music use a THX proprietary process called advanced speaker array to provide a mix of ambient and directional surround sounds using four surround speakers. Optimum performance of THX Ultra2 Cinema and THX Music is produced when the two rear speakers are placed close together behind the listening position. THX Ultra2 Cinema is recommended for movie soundtracks that are not Dolby Surround EX encoded, and THX Music is recommended for listening to multichannel music.

PLIIx Mov6, THX Surround EX, PLIIx Mus6, THX Ultra2 Cinema, and THX Music preset parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Options</th>
<th>What it changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>LFE</td>
<td>-28dB to 0dB</td>
<td>The relative level of the LFE bass channel.</td>
</tr>
</tbody>
</table>
**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.

**Using dynamic range control**

If the input format is Dolby Digital, the 5.1 Movie DSP presets provide an additional *Compress* parameter to allow you to take advantage of the dynamic range information provided in the Dolby Digital format to provide dynamic range control without the distortion involved in analogue methods.
Defining your own presets

The C61R Digital Surround Controller allows you to modify any of the built-in presets, and save them 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.

**To save the preset settings**
- Make sure the menus are unlocked; see *To run the Configuration Wizard*, page 17.
- Press DSP to select the preset you want to modify.
- Change the preset parameters to the values you want to store.
- Press More then Store, or Function + Store on the MSR+.

The display shows the next available user-defined preset. For example:

```
Pick Preset to overwrite User 1
Store

Press Store.
```

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:

```
Write label for preset User 1
```

- Press ▶ or ◄ to select the character position you want to edit.
- Press ▲ or ▼ 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 Clear on the MSR+.
For example, you could change the name to:

![Write label for preset Concert Store]

- When you have entered the name you want to use press **Store**.

The display shows:

![Stored Assign]

To make the new preset the default for the current source and audio format:

- Press **Assign**.

**To clear a user-defined preset**

- Make sure the menus are unlocked; see *To run the Configuration Wizard*, page 17.
- Press **DSP** to select the preset you want to clear.
- Press **More** then **Clear**, or **Function + Clear** on the MSR+.

The display shows **Preset Clear**.

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

We expect you to achieve superb results with your digital surround controller. If, however, you encounter any problems, either when installing and configuring it, or during operation, please check the following pages for suggested solutions. If these suggestions fail to cure the problem, please contact your Meridian dealer for further assistance.

General operating problems

Standby light not lit

- Check that the AC power supply is connected correctly.
- Check that the ON OFF switch on the back panel is in the ON position.

If the light still does not illuminate, check any fuses in your power supply and the fuse in the inlet of the C61R. 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.
- Make sure you are operating the MSR+ from a position where all the units can receive the infra-red.
- Press Clear on the MSR+.
- Observe all units responding correctly.

In extreme cases, the memory of the C61R may have been corrupted. If this is suspected perform a full reset; see Resetting the product, page 18.
Remote not working
Check the following:

- The battery in the MSR+.
- Remove the Comms connections from the C61R and check whether it responds now. If so, replace the connections and perform an Auto Configure procedure; see *To connect to other Meridian C Series, G Series, or 800 Series equipment*, page 15.
- See if the C61R has been set up as Not Controller in the Configuration Menu; see *Configuring other settings*, page 24.

**Note:** This may be deliberate by your dealer.

When playing a Dolby Digital DVD, the C61R selects a two-channel 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
Check that there is adequate ventilation around the unit.

Audio problems

**Hum on 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 C61R seems to be the cause of hum consult your dealer.

**There is radio interference**
The C61R 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 C61R and its cabling.
- Ensure that the receiver uses well-screened antenna cable.
- Relocate the receiver with respect to the C61R.
- Connect the receiver and this product to different AC outlets.
- If the problem persists contact your dealer.

**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 *Configuring speakers*, page 20.

**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 C61R 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.

**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 or CDs**
The DTS audio stream is indistinguishable from a PCM audio stream; the C61R 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.

For more information about each of these options see *Meridian Configuration Program*, page 35.

**The preset changes unexpectedly with a multichannel source**
If you are using a non-Meridian source on the MHR SmartLink input, proprietary data may cause preset switching.

- Select **Force this source to be six-channel** for the source. See *Meridian Configuration Program*, page 35.
Troubleshooting

Room Correction problems
This section gives suggested solutions to typical problems that may occur when using Meridian Room Correction. If problems still persist after working through the following steps please send an email to support@meridian.co.uk with a zip file containing your MSL file. Please also supply details of the loudspeakers and amplifiers you are using.

Failed microphone/SPL meter test
During the first measurement a microphone test is performed to ensure that the power and SNR (signal to noise ratio) are acceptable. The larger the SNR the better the measurement.

The following sections describe some of the most likely problems which will cause the power and SNR values to go outside these ranges.

Power result “Bad”
This indicates that there is very little or no signal on the connector you have chosen as your microphone input.

• Check that there was sound from the front left speaker during the test.

If in doubt, repeat the measurement. If there is still no sound check the connections from the digital surround controller to the left loudspeaker. Switch the digital surround controller off and then on again, select Calibrate as described in the installation guide for your digital surround controller, and check that the left speaker plays the calibration signal.

• Ensure that the lead from the SPL meter is intact.
• Check that the SPL meter is switched on and set to the 90dB band, or the band which includes 90dB, and with C weighting.

If the loudspeakers measured less than 75dB SPL during the calibration phase it may be better to use the 80dB range.

• Check that the lead from the SPL meter is connected to the correct input, A8 (L) on the G68.
• Ensure that the Sensitivity setting is adequate for the SPL meter or microphone.

The sensitivity value for analogue inputs is given in rms volts (Vrms). For example, a sensitivity of 1Vrms allows a signal of 2.8Vpp. A sensitivity of 1V is recommended for use with most SPL meters though 0.7V may be preferable for those with lower level output.

Power OK, SNR result “Bad”
The most likely cause of this problem is that an analogue source is connected to the input chosen for the microphone.

• Check that the lead from the SPL meter is connected to the input you have chosen for the microphone test.

Another possibility is that the lead from the SPL meter is in bad condition and only making a poor connection.
Power OK, SNR result “Poor”  
The reasons for this are described in detail in the following section where example measurements are also shown.

Repeated measurements due to poor SNR  
Measurements are retried until the SNR is acceptable or the maximum number of retries has been completed. The maximum number of times each measurement will be retried due to poor SNR can be set in the Preferences dialogue box, accessed from the Options menu:

The default number of retries is 3. If the measurements are consistently giving poor SNR figures you can reduce the number of retries. However, it is better to follow the steps described below to improve the measurement conditions. The better the measurement the more accurate the results when calculating the filters for a profile.

SPL meter is set on a low band  
The following graph shows an impulse response obtained when a Radio Shack SPL meter was set on the 60dB band. The SNR value was “Poor”:

SPL meter is set on a high band  
The following graph shows an impulse response obtained when a Radio Shack SPL meter was set on the 120dB band. The tail of the response is generally noisy. The SNR value was acceptable but the power was “Bad”:
Troubleshooting

**Loudspeaker is running in a non-linear range**
The effects of a loudspeaker running in a non-linear range is most easily observed in the impulse response. The tail of the response has small spikes, as shown in the plot below, where it should be zero. The larger these spikes are relative to the largest value at the beginning of the impulse response the smaller the SNR value:

- Check that the bass protection size has been correctly set – see the Installation Guide for your product.
- Check that the bass drive unit in your loudspeaker is not rubbing.
- Check that your amplifier is not clipping.

If problems are still encountered, use the **Speaker calibration** page to reduce the gain of the channel. Use the reduced gain setting for the room correction measurements, then return to the correct level for a calibrated system after running room correction measurements.

**Hum in the system**
The effect of hum on the measurement is most easily observed in the waterfall plot. The continuing signal at 50Hz and 150Hz in the waterfall plot shown below indicates a mains hum loop:

You are likely to have heard this level of hum when playing analogue sources connected to the same analogue input card as the microphone/SPL meter.

In order to get a better measurement disconnect analogue sources from the analogue input card used for the room correction measurements. Reorganise your speaker wiring to remove the hum loop.

Hum may also be picked up by the lead from the microphone/SPL meter. It is best to use a shielded cable to reduce the chances of picking up hum.
Cleaning

To clean the case, display panel, and keypad
• Disconnect the power cord before cleaning the unit.

The exterior surfaces of Meridian G Series products are made from solid anodised aluminium, powder coated steel, thermoplastic rubber, and glass.

They are designed to be easily wiped clean with a dry, lint free cloth. Greasy marks should be removed by light rubbing with a slightly damp cloth and a trace of proprietary glass cleaner. Do not use any other solvent or abrasive based cleaners.

Ensure that no liquid enters the casework and that the product is completely dry before re-connection.

To clean the audio and video connections
The audio and video sockets on the back of the product are gold plated and do not need to be cleaned if gold-plated phono plugs are used. Otherwise, it is recommended that you unplug and reconnect the plugs at least once a year. A proprietary contact cleaner can be used to some advantage.

The electrical digital output should be treated in a similar way.

To change the mains fuse
• Remove the mains connector, and pull out the drawer above the power input to access the fuse.

Before replacing a blown fuse, it is best to ascertain the cause of the failure.

The fuse drawer includes a spare fuse. This should be replaced by a fuse of the same rating.
Service and guarantee

Service
The Meridian C Series of hi-fi components has 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 product 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 iv.

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

No responsibility can be accepted for the product 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 product is guaranteed against defects in material and workmanship for two years from the date of purchase.

The guarantee is void if the product 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 product 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 outside the UK 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 country of purchase.
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