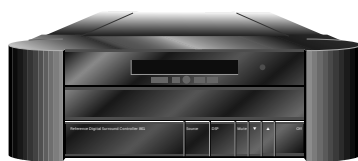


Meridian 861 Reference Digital Surround Controller User Guide



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Sales and service in the UK

Meridian Audio Ltd
Stonehill
Stukeley Meadows
Cambs
PE18 6ED
England

Tel (01480) 52144
Fax (01480) 459934

Sales and service in the USA

Meridian America Inc
3800 Camp Creek Parkway
Building 2400
Suite 122
Atlanta
GA 30331

Tel (404) 344 7111
Fax (404) 346 7111

World Wide Web
<http://www.meridian-audio.com>

Designed and manufactured in the UK by

Digital Gramophone and Wireless Ltd
Stonehill
Stukeley Meadows
Cambs
PE18 6ED
England

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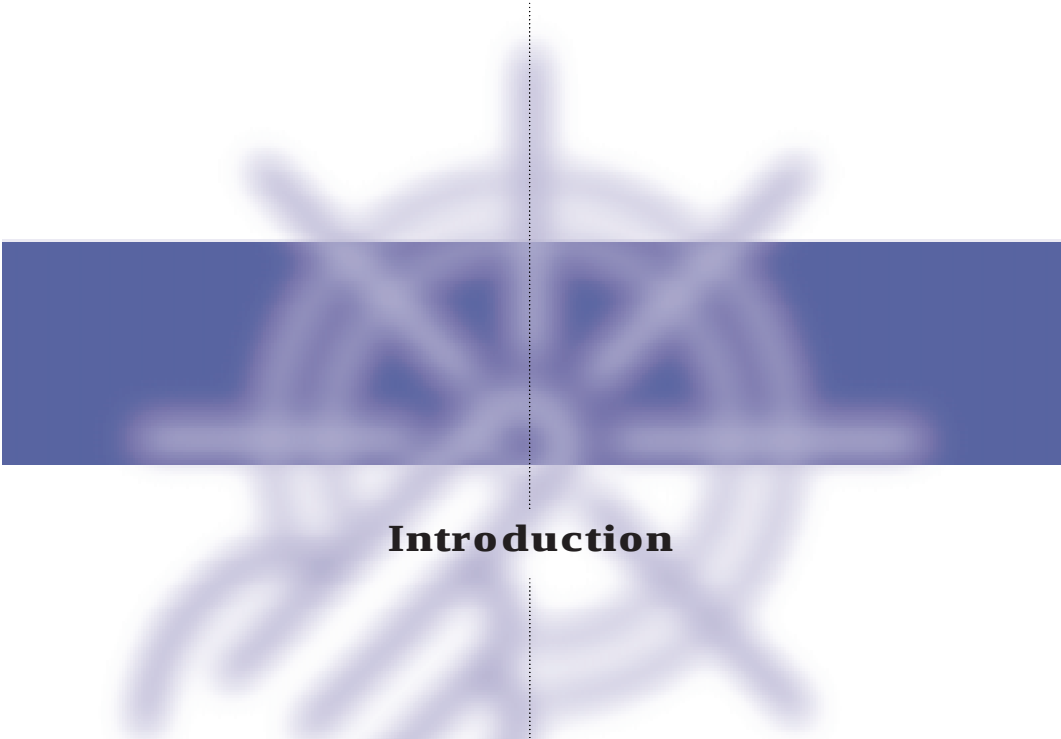
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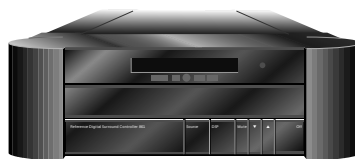
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Introduction

Welcome to the Meridian 861 Reference Digital Surround Controller!
This User Guide provides full information about using the Surround Controller in conjunction with your other equipment, to achieve the superb results you can expect from it.



The 861 Reference Digital Surround Controller

Digital signal processing, or DSP, is a technique pioneered by Meridian in hi-fi products for achieving extremely accurate reproduction of audio signals. Unlike conventional analogue systems – which process signals using electronic circuits based on resistors, capacitors, and inductors – DSP works by performing exact mathematical calculations on digital versions of the signals.

The advantage of DSP over analogue circuitry is that the signals are held as precise numbers, rather than voltages in a circuit. This means that any number of stages of processing can be performed with high precision, and without any of the cumulative noise or degradation that inevitably occurs, even with high-quality analogue circuitry. In addition, several of the surround-sound decoding techniques and signal improvement techniques available in the 861 would be virtually impossible to implement in analogue circuitry.

At Meridian we have taken advantage of the availability of high speed DSP microprocessors to incorporate DSP in hi-fi products, and the 861 is the result of several years of our research and development in this field.

The 861 takes advantage of DSP for several different functions:

- To de-jitter incoming digital signals and expand the precision of the signal.
- To perform filtering or adjustment of the frequency response; eg treble or bass.
- To decode digitally-encoded signals from Dolby Digital (AC-3), DTS, or MPEG Audio.
- To process the audio into a multi-channel signal, and match the source channels to the configuration of main loudspeakers and subwoofers in the system.

The 861 converts analogue input signals to digital format, using high-quality analogue-to-digital converters (ADCs). Digital signals, from CD, DVD, LaserDisc or digital broadcasting, are already in digital format and do not need to be converted.

The signals are then retained in digital form throughout the 861 until they are converted back to analogue form at the analogue outputs, to drive power amplifiers. If you are using the 861 with Meridian DSP Loudspeakers, the signals remain in digital form until the last possible stage.

DSP presets

The 861 provides an extremely comprehensive range of options for decoding both analogue and digital audio signals and processing them for multi-channel reproduction.

The Digital Surround Controller provides several digital signal processing options, called DSP presets, and these are designed to provide the best results with a range of different types of music and film material.

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

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

Multi-channel digital sources

Several alternative multi-channel digital formats are currently available which encode up to 8 different channels onto a digital signal. Three alternatives are currently in use: Dolby Digital (AC-3), DTS, and MPEG Audio. However, the 861 has been designed so that it can be upgraded by downloading a software update, to cater for new formats as they are introduced.

Dolby Digital

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

MPEG Surround

MPEG Surround is the preferred audio format for DVD in PAL territories, and along with Dolby Digital is a contender as the standard for music and performance videos on DVD worldwide. In addition, it is widely available in US satellite broadcasts and in computer multimedia.

DTS

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

In addition, a high data-rate version of DTS can be used to compress five channels of CD-quality audio into the same space as two channels of

unencoded sound, allowing a DTS music CD to provide over an hour of five-channel music, at a quality indistinguishable from conventional CD.

THX

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

Multi-channel sources encoded onto two channels

Several systems have been developed for encoding multi-channel sources onto a standard two-channel analogue signal so that they can be reproduced by a conventional stereo system, or decoded with special equipment for multi-channel reproduction. The 861 provides decoding of the two most important of these, Ambisonic and Dolby Surround. Although the channel separation cannot be as good as with the digital multi-channel formats, the 861 produces excellent results with these formats.

Pro Logic

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

TV Logic

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

THX Cinema

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

Ambisonic

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

Conventional stereo sources

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

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

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

Music

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

Trifield

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

Super Stereo

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

MusicLogic

MusicLogic provides user-adjustable steering to give an exciting sound with many types of music. We recommend this option for studio-produced music, ie material not produced using natural soundfield recording.

Special DSP presets

The Digital Surround Controller also includes the following special DSP presets, for specific applications:

Mono and Academy

The **Mono** and **Academy** presets are designed for reproducing mono materials through a centre speaker, so that any high-frequency hiss or clicks are centrally localised.

Mono is designed for mono recordings, and multi-language LaserDiscs and video soundtracks.

Academy is designed for early black and white film soundtracks. It includes equalisation designed to correct for a high-frequency balance in some old black and white films.

Stereo and Direct

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

Overview

The architecture of 861 allows for wide flexibility – future sources and formats can be handled by upgrading either software or cards.

Inputs

The 861 is a full-system controller preamp that provides seamless control of up to 12 analogue or digital audio, and up to 12 video sources.

The optional Tape card provides additional internal 20-bit A/D and D/A converters to give full support for both tape recorders, extensive 2- and 3-zone multi-room capability (analogue or digital formats), and headphones.

By providing digital as well as analogue inputs the 861 can give radically higher sound quality for sources that are originally digital – like CD, LaserDisc, Digital Radio and DVD.

As well as accepting 2-channel digital audio, the 861 will handle SPDIF-encoded Dolby Digital, DTS or MPEG from sources like DVD, Satellite and LaserDisc (via a Meridian 519 Demodulator).

Processing

The Meridian 861 routes all signals – if necessary via a 20-bit Delta-Sigma A/D converter – into the digital domain for processing in the highly developed Meridian 24-bit DSP cards.

This processing engine can consist of between 2 and 10 modular processor cards, each housing 1 or 2 ultra-fast 24-bit processors with high-speed cache memory. In each DSP core, the incoming signals are processed using a variety of proprietary algorithms and up to 16 output signals are generated. These output signals can be used to feed a number of speaker layouts, ranging from 2-speaker to 7-speaker stereo with up to 8 subwoofers.

The on-board algorithms include Meridian's own highly transparent Dolby Pro Logic and Dolby Digital, MPEG Surround, DTS, THX extensions, TV Logic and a variety of award-winning music programs including Trifield and Ambisonic.

Outputs

The 8+ outputs can be provided as digital signals to feed Meridian DSP Loudspeakers, or as variable analogue outputs using a proprietary on-board 23-bit resolution conversion method.

Video control and OSD

The Meridian 861 provides broadcast-grade video switching options for monitors, projectors and video tape routing. The comprehensive setup and customising facilities allow the user to link any video and audio combinations to the 12 Sources (accessed from Source switching on the front panel or the remote control).

In addition to providing high-quality video amplification, the 861 has the ability to give help and system control feedback information in an On-Screen Display. Video formats supported include Composite, S, Component, and RGB.

Typical specification

Audio in and out

- Up to 12 analogue inputs. User-adjustable sensitivity. Re-nameable legends.
- Up to 12 digital inputs. Re-nameable legends. 32 to 48kHz or 96kHz sampling, and up to 24-bit precision.
- Digital and analogue tape loops
- Independent copy and 2-room+ capability
- 2 to 12 digital outputs
- 2 to 12 analogue outputs

Control signals

- 3 trigger outputs, programmable by source.
- Meridian Comms and RS232 for control and setup.

Signal processing

The 861 uses Meridian's proprietary DSP software to provide the following powerful Modes:

- Pro Logic
- THX
- TVLogic
- Dolby Digital (AC-3)
- DTS Coherent Surround
- MPEG Audio and MPEG Surround
- Music
- Trifield
- Ambisonics
- Super Stereo
- MusicLogic

Controls, etc.

Front-panel facia controls for:

- Source, DSP, Mute, Volume and Off.

Hinged control panel provides additional switches for:

- Display
- Copy
- Store and Assign
- Parameter menus
- Setup

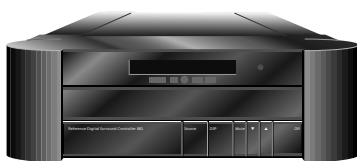
Display

- 20-character dot-matrix display: adjustable brightness and contrast
- Lights for Dolby, Digital, THX, DTS, and MPEG

Using the 861 Reference Digital Surround Controller

This chapter provides a summary of the functions of the 861 Reference Digital Surround Controller to identify the controls which you use to operate the unit.

It also provides step-by-step instructions for operating the Digital Surround Controller, using either the front panel or the Meridian System Remote.



Front panel and Meridian System Remote keys

- 1 **Source**
Selects the source.
- 2 **DSP**
Changes the DSP preset selected for a source.
- 3 **Mute**
Mutes or restores the sound.
- 4 ▼
Reduces the volume.
- 5 ▲
Increases the volume.
- 6 **Off**
Switches to standby.
- 7 **Display**
Changes the information displayed on the front panel.
- 8 **Copy**
Copies a source to a tape output.
- 9 **Store**
Stores the parameters for a preset.
- 10 **Menu keys**
Allow you to select DSP parameters, and change their values.
- 11 **Assign**
Assigns the current DSP preset to the current source.
- 12 **Calibrate**
Sets up the loudspeakers.
- 13 **Config**
Configures source sensitivity.



Switching on and off

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

If you are not going to use the Digital Surround Controller for several days you should switch the unit off completely at the rear panel, and disconnect it from the AC power supply.

To switch on from standby

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

If the Digital Surround Controller is part of a Meridian system it will automatically switch on any other unit in the system, such as the 800 Reference CD Machine and Meridian DSP Loudspeakers.

To switch to standby

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

If you have other Meridian equipment or Meridian DSP Loudspeakers connected to the Digital Surround Controller these units will also switch to standby.

Selecting a source

The sound processor provides the following 12 sources:

CD, Radio, LP, TV, Tape 1, Tape 2, CDR, Cable, DVD, VCR1, VCR2, LDisc.

Your installer may have customised the labels displayed for each source to suit your other equipment.

The input and DSP preset associated with each source depends on how the Digital Surround Controller has been set up; for more information refer to the *Meridian 861 Reference Digital Surround Controller System Guide*.

To select a source

- Press **Source** (front panel) until the display shows the source you require, or press the appropriate source key on the remote; eg **CD**.

The display shows the source, DSP preset, and volume setting.

For example, if you select the CD source the display might show:



CD Trifield 65

The Digital Surround Controller mutes the sound while you change source, to avoid clicks in the speakers.

Adjusting the volume

The 861 Reference Digital Surround Controller adjusts the volume in precise steps of 1dB, where 9dB is equivalent to doubling the loudness. The current volume setting is displayed in dB on the front panel display, and can be varied in the range 1 to 99dB. When you first connect power to the Digital Surround Controller the volume is set to 65, which is similar to the mid-way position of the rotary volume control on a conventional preamplifier.

A setting of 87 corresponds to THX reference gain, the level at which film soundtracks are mixed.

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

To change the volume

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

As you adjust the volume setting the display shows the current volume level.

For example:

The image shows a digital display on a black background. The text 'CD Trifield 70' is displayed in a white, monospaced font. 'CD' is on the left, 'Trifield' is in the middle, and '70' is on the right.

To mute the sound

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

The display will show:

The image shows a digital display on a black background. The word 'Mute' is displayed in a white, monospaced font.

To restore the sound

- Press **Mute** again.

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

To change the headphone volume

You can connect headphones to the 861 using the optional Tape card. To change the headphone volume:

- Press the **Calibrate** button, under the front panel, and then use the **Menu** ▲ or ▼ buttons to change the headphone volume. Alternatively to use the remote hold down **Function** while pressing the red ▲ or ▼ keys.

The display shows the headphone volume; for example:

The image shows a digital display on a black background. The text 'Headphone Volume 65' is displayed in a white, monospaced font. 'Headphone Volume' is on the left and '65' is on the right.

Changing the DSP preset

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

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

For example, if you have selected the CD source and are playing a conventional CD, the **Trifield** DSP preset will initially be selected.

You may then wish to choose a different DSP preset, such as **Music** or **Ambisonic**.

You can also change the default DSP preset assigned to the source; see *To assign a DSP preset to a source*, page 30.

The sequence of DSP presets for each music format is as follows:

Music format	Presets
Two-channel (PCM)	Direct, Music, Trifield, Ambisonic, Super, Stereo, MusicLogic, ProLogic, THX Cinema, Mono, Academy, TV Logic
Dolby Digital	Digital, Digital THX
DTS	DTS, DTS THX, DTS Music
MPEG	MPEG, MPEG THX, MPEG Music

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

To change the DSP preset

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

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

*The Digital Surround Controller
mutes the sound while you
change DSP preset, to avoid clicks
in the speakers.*

Changing the display

The 861 Reference Digital Surround Controller displays information about the current settings on the 20-character front panel display. In addition, it can display the same information superimposed on a video image. For more information about setting up an on-screen display refer to the *861 Reference Digital Surround Controller System Guide*.

You can adjust the contrast and brightness of the front-panel display for optimum viewing, and choose what information is displayed.

The Digital Surround Controller automatically stores these settings, even with the power off.

To change the contrast

- Press ► or ◀ (remote), or the corresponding **Menu** buttons under the front panel, until the display shows:

A black rectangular display showing the text 'CD Contrast 8' in a white, monospaced font. The 'CD' is on the left, 'Contrast' is in the middle, and '8' is on the right.

- Press ▲ or ▼ (remote), or the corresponding **Menu** buttons under the front panel, to change the display contrast.

You can change the contrast between 0 and 15.

To change the brightness

- Press ► or ◀ (remote), or the corresponding **Menu** buttons under the front panel, until the display shows:

A black rectangular display showing the text 'CD Bright 11' in a white, monospaced font. The 'CD' is on the left, 'Bright' is in the middle, and '11' is on the right.

- Press ▲ or ▼ (remote), or the corresponding **Menu** buttons under the front panel, to change the display brightness.

You can change the brightness between 0 and 15.

To change the displayed information

- Press **Display**.

Each time you press **Display** the display will step between the options shown in the following table.

Display option	Example
Source, DSP preset, and volume	CD Ambisonics 65
DSP preset, source, and THX reference level	CD Ambisonics -22
Audio format and sampling rate	CD PCM 44k
Blank	

If your Digital Surround Controller is fitted with a video card, the same information can be displayed on an on-screen display.

For example:



You can choose the position of the on-screen display for each DSP preset; see *To change the position of the on-screen display*, page 29.

If the Diagnostic display option has been selected additional diagnostic displays are included; refer to the *861 Reference Digital Surround Controller System Guide* for details.

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

Symbol	What it means
 DIGITAL	Dolby processing is operating. Input is Dolby Digital.
	THX processing is operating.
 MPEG	Input is DTS. Input is MPEG.

Customising the 861 Reference Digital Surround Controller

In addition to being able to change the source, volume, and DSP preset, the 861 Reference Digital Surround Controller provides a sophisticated range of more advanced adjustments for each DSP preset, to allow you to tailor the sound.

This chapter explains how to change these parameters, and gives detailed instructions for adjusting the parameters that are common to most of the DSP presets.

For information about the parameters specific to individual presets see *DSP presets*, page 35.



Locking and unlocking the menus

To simplify the normal operation of the Digital Surround Controller, and to protect the settings from accidental changes, you can lock the menus so that the DSP parameters cannot be accessed.

The only parameters available with the menus locked are **Brightness** and **Contrast**.

To display or change the DSP presets, or to define your own presets, you first need to unlock the Digital Surround Controller menus.

To unlock the menus

- Press **Off** (front panel or remote) to put the Digital Surround Controller in standby.
- Press and hold down the **Store** button under the front panel for a few seconds until the display shows:



Unlocked

To lock the menus

- Repeat the above sequence so that the display shows:



Locked

Changing the DSP parameters

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

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

You can save the changes you have made to one or more DSP parameters in place of the original DSP preset. Alternatively you can create a new user-defined DSP preset, with a name of your choice. User-defined presets appear in the list of DSP presets after the built-in ones. For more information about doing this see *Defining your own presets*, page 31.

Standard parameters

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

Parameter	Range	Default	What it changes
Treble	-10dB to +10dB	+0dB	The slope of the frequency response.
Bass	-5dB to +5dB	+0dB	The bass response.
Phase*	+ or -	+	The phase of all loudspeakers.
Balance	<10 to 10>	<0>	The L-R balance.
Centre	-3dB to +3dB	+0dB	The level of the centre.
Depth	-2.5ms to +5ms	+0.0	The relative delay of the centre.
Rear	-30dB to +10dB	+0dB	The relative level of the rears.
Sides	-30dB to +10dB	+0dB	The relative level of the sides.
R Delay	15ms to 30ms	0.0	The relative delay of the rears.
S Delay	15ms to 30ms	0.0	The relative delay of the sides.
LipSync	0ms to 30ms	0.0	The sync. delay.
OSD*	Off, Low, Med, High	Low	The position of the on-screen display.

* These parameters apply to all DSP presets.

Individual DSP presets provide additional parameters, to allow you to adjust specific features provided by that preset. For full details refer to *DSP presets*, page 35.

To change a DSP parameter

- Make sure the menus are unlocked; see *To unlock the menus*, page 22.
- Press ► or ◀ (remote) until the display shows the name of the parameter you want to change.

For example:



CD Depth +0.0

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

Alternatively you can use the corresponding **Menu** buttons under the front panel.

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

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

Changing treble, bass, or phase

The Digital Surround Controller provides sophisticated treble and bass controls, to allow you to adjust the broad balance of the system to correct for the acoustics of your listening room, or for a misbalanced recording.

The controls are more subtle than conventional tone controls, and take advantage of digital signal processing techniques to provide a more natural adjustment of the frequency response.

*If you have a Meridian
DSP Loudspeaker the **Treble** and
Bass settings apply to all DSP
presets.*

You can also change the absolute phase of the signal, to compensate for recordings which are out of phase.

In each case all the outputs of the Digital Surround Controller are given the same frequency adjustment, to ensure a correct surround effect.

To change the treble

- Press ◀ or ▶ (remote) until the display shows the current treble; for example:

A digital display with a black background and white text. It shows 'CD' on the left, 'Treble' in the center, and '+0.0' on the right.

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

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

To change the bass

- Press ◀ or ▶ (remote) until the display shows the current bass setting; for example:

A digital display with a black background and white text. It shows 'CD' on the left, 'Bass' in the center, and '+0.0' on the right.

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

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

To change the absolute phase

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

A digital display with a black background and white text. It shows 'CD' on the left, '+ Phase' in the center, and nothing on the right.

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

Changing the listening position

A conventional stereo system provides a single balance control, which changes the relative loudness of the two speakers. The 861 Reference Digital Surround Controller provides a more sophisticated adjustment which corresponds to moving the listening position to the left or right.

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

To move the listening position to the left or right

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

A black rectangular display with white text showing 'CD Balance <0>'. The 'CD' is on the left, 'Balance' is in the middle, and '<0>' is on the right.

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

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

For example:

A black rectangular display with white text showing 'CD Balance <3>'. The 'CD' is on the left, 'Balance' is in the middle, and '<3>' is on the right.

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

Note that this adjustment is not available for the **Mono** or **Academy** presets.

To change the relative level of the side or rear loudspeakers

- Press ◀ or ▶ (remote) until the display shows the speaker(s) you want to adjust; for example:

A black rectangular display with white text showing 'CD Rear +0dB'. 'CD' is on the left, 'Rear' is in the middle, and '+0dB' is on the right.

- Use ▲ or ▼ to change the relative level of the speakers, in dB.

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

For example, to double the loudness of the loudspeakers:

- Adjust their level until the display shows:

A black rectangular display with white text showing 'CD Rear +10dB'. 'CD' is on the left, 'Rear' is in the middle, and '+10dB' is on the right.

Note that this adjustment is not available for the **Direct**, **Stereo**, **Mono**, or **Academy** presets.

Changing the integration of the centre

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

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

Note that these adjustments are not available for the **Direct**, **Stereo**, **Mono**, or **Academy** presets.

To change the relative level of the centre speaker

- Press ► or ◀ until the display shows the current centre level; for example:



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

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

To change the relative delay of the centre speaker

- Press ◀ or ► until the display shows the current centre depth; for example:



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

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

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

Changing the spaciousness of the sound

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

Note that these adjustments are not available for the **Direct**, **Stereo**, **Mono**, or **Academy** presets.

To change the relative delay of the rear or side speakers

- Press ► or ◀ until the display shows:



- Press ▲ or ▼ to change the relative delay of the rear speakers.

You can change the rear delay between 15ms, which is equivalent to moving the rear speakers 15 feet away, and 30ms, which is equivalent to moving the rear speakers 30 feet away.

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

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

The **Dolby Digital**, **Music**, **Trifield**, and **Ambisonic** presets allow you to vary these delays down to 0ms.

Changing the lip sync and on-screen display

To adjust the lip sync

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

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

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

- Press ► or ◀ until the display shows:

A black rectangular OSD display with white text. The text reads 'CD LipSync 0.0'.

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

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

If your video display system has a long latency, this can be corrected using the Frame Sync feature; refer to the *861 Reference Digital Surround Controller System Guide* for details.

To change the position of the on-screen display

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

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

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

For example:

A black rectangular OSD display with white text. The text reads 'CD OSD Low'.

- Press ▲ or ▼ to change the position.

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

Changing the DSP preset for a source

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

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

To assign a DSP preset to a source

- Make sure the menus are unlocked; see *To unlock the menus*, page 22.
- Select the source you want to change by pressing the **Source** key on the front panel or the appropriate source button on the remote, eg **CD**.
- If necessary, select a signal in the appropriate format. For example, to change the DSP preset used for DTS compact discs, play a DTS CD.

The display will show the source and the DSP preset currently assigned to that source.

For example:



- Press ▲ or ▼ until the display shows the new DSP preset you want to assign.

For example:



- Press the **Assign** button to save the new assignment.

Defining your own presets

The 861 Reference Digital Surround Controller allows you to modify one of the built-in presets, and save it for future use.

You can either save the changes to the built-in preset, or you can create up to 12 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 unlock the menus*, page 22.
- Press **DSP** (front panel), or **Function** • (remote), to select the preset you want to modify.
- Change the preset parameters to the values you want to store; see *To change a DSP parameter*, page 24.
- Press **Store** on the remote.

The display shows the next available user-defined preset.

For example:



- If you want to overwrite an existing user-defined preset press ▲ or ▼ to select the preset you want to overwrite.

For example:



Alternatively you can choose the built-in preset you started with.

For example:



- Press **Store** on the remote.

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

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

A flashing cursor shows the letter you are editing:



If you have an on-screen display it shows:



- 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 remote.

For example, you could change the name to:

A black rectangular screen with white text. The text reads: 'CD La Scala'.

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

The display shows:

A black rectangular screen with white text. The text reads: 'Stored'.

To clear a user-defined preset

- Make sure the menus are unlocked; see *To unlock the menus*, page 22.
- Press **DSP** (front panel), or ▲ or ▼ (remote) to select the preset you want to clear.
- Press and hold down **Clear** (remote) for several seconds.

The display shows:

A black rectangular screen with white text. The text reads: 'Preset Clear'.

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

Adjusting the sensitivity of the analogue sources

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

To adjust the sensitivity of a source

- Select the source you want to adjust.
- Press the **Config** button under the front panel.

The display shows the current sensitivity.

For example:



- Press ▲ or ▼ (front panel) to change the sensitivity.

You can select between sensitivities of 0.7V (most sensitive), 1.4V, 2.0V, or 2.5V (least sensitive).

If the sensitivity is set too high the input will clip the loudest passages.

The display shows, for example:

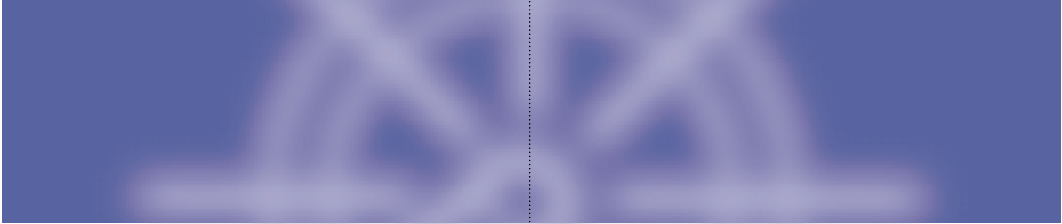


In this case reduce the sensitivity.

If you have selected a digital source you cannot adjust the sensitivity.

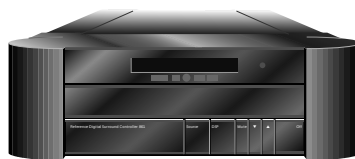
The display shows, for example:





DSP presets

This chapter gives technical information about each of the DSP presets built in to the 861 Reference Digital Surround Controller. It explains the processing performed by each DSP preset, and gives details of the types of material you should use with each preset. It also gives details of the special DSP parameters available for each preset.



Cinema DSP presets

The Digital Surround Controller provides five DSP presets specifically designed for reproducing film soundtracks. Three of these presets, Pro Logic, THX Cinema, and TV Logic, are designed for Dolby Surround encoded material. Most films, and many TV programmes and series, are encoded using Dolby Surround, and it is increasingly being used to encode music.

The 861 Reference Digital Surround Controller follows the Meridian philosophy of performing all the signal processing digitally, and the Dolby Surround decoding operates purely in a digital mode. This gives it a far higher performance and a better subjective sound than other analogue-based decoders.

The remaining two cinema presets, **Mono** and **Academy**, are designed for films with mono soundtracks.

If your Digital Surround Controller is configured to use different loudspeaker layouts, all the cinema DSP presets will use the CINEMA layout; refer to the *861 Reference Digital Surround Controller System Guide* for more information.

Pro Logic

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

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

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

THX Cinema

The **THX Cinema** DSP preset provides Pro Logic decoding, followed by additional signal processing refinements developed by Lucasfilm Ltd.

The THX extensions to Pro Logic decoding are designed to provide a better match between the sound of the movie theatre and a home cinema.

In a home system the speakers tend to be a lot closer to the listener than in a movie theatre, and the **THX Cinema** DSP preset compensates for this difference of scale in three ways:

- The front channels are re-equalised so that the sound at the listener has a frequency balance close to that of the mastering theatre.
- The surround channels are frequency-corrected using a timbre-matching process so that sounds moving front–back are more convincing.
- The surround channels are decorrelated to break up any artificial localisation of the rear signals due to the speakers being nearby. In the 861 Reference Digital Surround Controller this decorrelation is optimised to give a spacious surround sound that has no artefacts disturbing to music or other sensitive sounds in the mix.

Pro Logic and THX Cinema DSP preset parameters

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

TV Logic

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

TV Logic DSP preset parameters

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

Mono and Academy

In the **Mono** and **Academy** DSP presets 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 there is a centre speaker, the combined or selected signal is played only through this to centrally localise high-frequency hiss and clicks.

The **Academy** DSP preset includes an equalisation (recommended by Lucasfilm Ltd) to correct for a high-frequency balance in some old mono films.

Mono and Academy DSP preset parameters

Parameter	Options	What it changes
Input	Auto L+R, Left, Right, L+R	The channel selected.

Music DSP presets

The Digital Surround Controller provides seven alternative music DSP presets designed for the reproduction of well recorded material, originally intended for replay over a traditional stereo pair of loudspeakers.

In addition, it provides DSP presets for reproducing music in the digitally encoded DTS and MPEG formats.

Music format	Presets
Conventional stereo (PCM)	Direct, Music, Trifield, Ambisonic, Super, Stereo, MusicLogic
DTS	DTS Music
MPEG	MPEG Music

If your Digital Surround Controller is configured to use different loudspeaker layouts, all the music DSP presets will use the MUSIC layout; refer to the *861 Reference Digital Surround Controller System Guide* for more information.

Music

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

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

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

Trifield

As for the **Music** DSP preset, the **Trifield** preset extracts the mono and surround components of the original recording. It then calculates the signals for the front left, centre, and right speakers, using the phase and amplitude differences between the three front channels, to redistribute the sounds on a frequency-dependent basis.

This gives a significant improvement over traditional stereo, which converts the differences between the microphone signals into amplitude differences in the speaker signals. This version of the Trifield algorithm is virtually impossible to implement without digital signal processing.

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

Music and Trifield DSP preset parameters

Parameter	Options	What it changes
Centre	Flat, EQ1–3	The timbre of the centre loudspeaker.
Width*	0–2	The width of the image.
Surr. Rear	Surr. Rear, Surr. Side, Surr. All	Switches the surround signal between the side and rear speakers.
R Filter	Off, 1kHz, 3kHz, 7kHz	The cutoff of high frequencies from the rear surrounds.
S Filter	Off, 1kHz, 3kHz, 7kHz	The cutoff of high frequencies from the side surrounds.

* **Trifield** only.

Ambisonic

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

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

The Digital Surround 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 Ambisonic surround sound and conventional stereo is that the signals from all the speakers combine to produce a coherent sound field at the listening position, giving the illusion that you are sitting inside the recording space whether you are at the exact central seat or well off to one side.

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

Super Stereo

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

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

Ambisonic and Super Stereo DSP preset parameters

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

* **Super Stereo** only.

† **Ambisonic** only.

MusicLogic

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

MusicLogic DSP preset parameters

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

DTS Music

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

MPEG Music

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

For details of the DTS Music and MPEG Music DSP preset parameters see *Discrete Digital DSP preset parameters*, page 44.

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.

There are no special DSP preset parameters.

Discrete digital DSP presets

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

If your Digital Surround Controller is configured to use different loudspeaker layouts, all the music DSP presets will use the 5.1 layout; refer to the *861 Reference Digital Surround Controller System Guide* for more information.

Dolby Digital

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

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

Dolby Digital THX

As with the standard **THX Cinema** DSP preset, **Dolby Digital 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, and can be used whether or not your other equipment is THX approved.

DTS

DTS is unusual among the compressed surround formats in that it can deliver high quality music at high bit rates.

CDs and LaserDiscs are currently available which provide a DTS signal in place of the normal digital audio. DVD may also feature DTS soundtracks.

MPEG

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

DTS THX and MPEG THX

As with **Dolby Digital THX**, these presets re-equalise the signals to suit domestic listening conditions.

Discrete Digital DSP preset parameters

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

* **Dolby Digital** and **Dolby Digital THX** only.

† See below.

Using dynamic range control

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

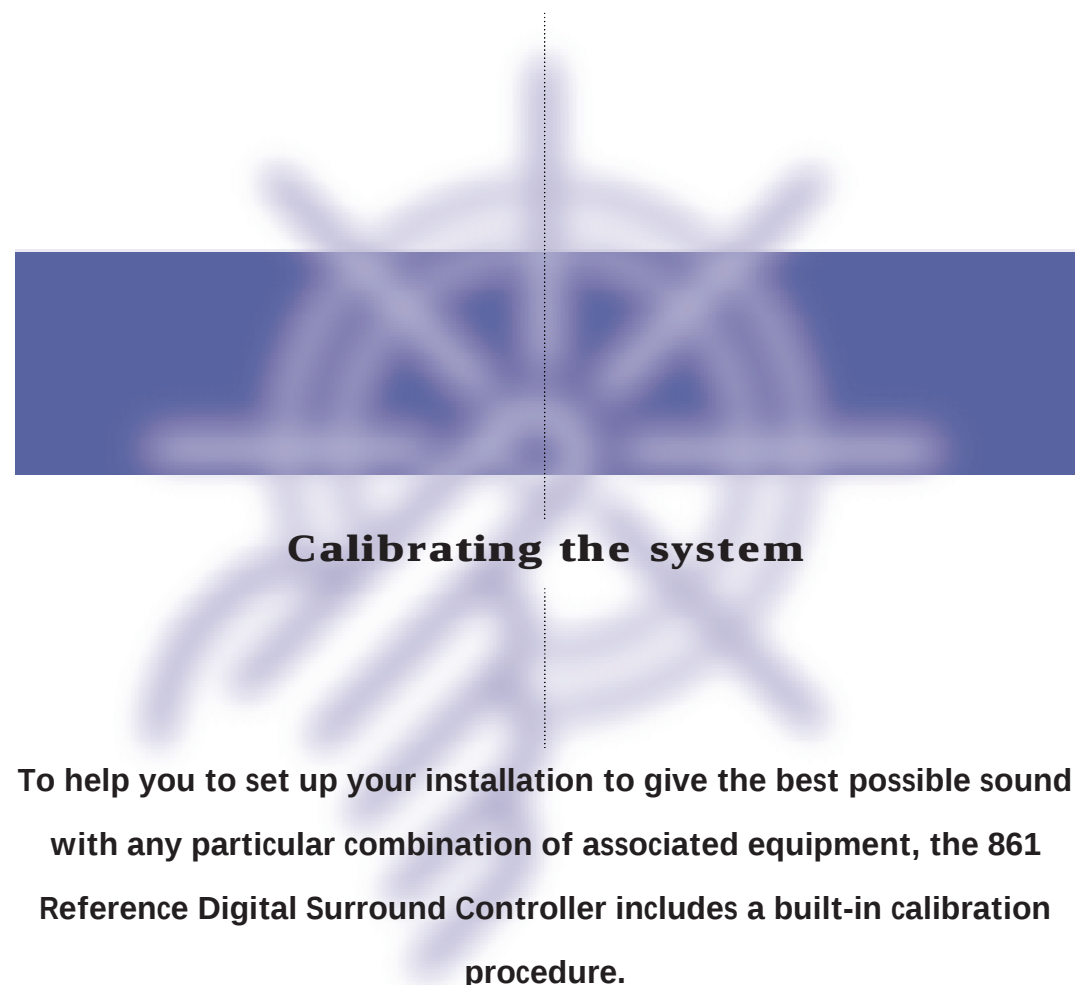
Option	Description
Off	No compression.
Low	Provides a moderate amount of bottom-up compression. This raises quiet sounds above the background noise, which is ideal for demonstration and quiet listening.
Med	Provides moderate amounts of both bottom-up and top-down compression.
Top	Provides a moderate amount of top-down compression. This reduces loud sounds.
Max	Provides full bottom-up and top-down compression. Quiet sounds are raised to be audible and loud passages are minimised to avoid disturbance, which is useful for late-night listening.
Mix	Bypasses dialogue normalisation and references the sound pressure level in the studio where the material was mixed.

Using peak-level limiting

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

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

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



Calibrating the system

To help you to set up your installation to give the best possible sound with any particular combination of associated equipment, the 861 Reference 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 work through the calibration procedure the first time you set up your surround sound system, and whenever you want to check the calibration, such as after changing the layout of your room.



Using the calibration procedure

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

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

If your Digital Surround Controller is fitted with a video card, and you have a video source connected, the on-screen display also provides additional text explaining what to do. For information about setting up the on-screen display refer to the *861 Reference Digital Surround Controller System Guide*.

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, available fairly cheaply from Tandy/Radio Shack, or your Meridian dealer may be able to lend you one.

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

To start the calibration procedure

- Put the Digital Surround Controller into standby by pressing **Off** (front panel or remote).
- Press and hold the **Calibrate** button, under the front panel, for at least five seconds.

The display shows:



If you have an on-screen display it shows:



After a few seconds the display shows:



Left Level +0dB

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

To move between the calibration tests

- Press ► (remote), or the corresponding **Menu** button under the front panel.
- Press ◀ (remote), or the corresponding **Menu** button under the front panel, to move back to an earlier test.

To jump to the next set of tests

- Press **Store**.

The calibration tests are described in the following sections.

To exit from the calibration procedure

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

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

Calibration tests

Levels

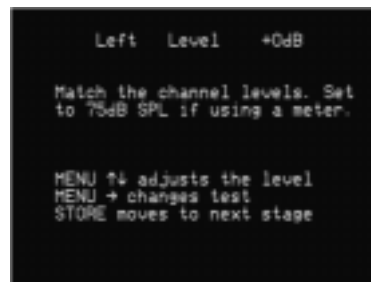
These tests allow you to adjust the output level to each speaker individually, and it follows the general guidelines from Dolby Laboratories and Lucasfilm. A Sound Pressure Level (SPL) meter can be useful at this stage; ask your dealer for more information.

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

For example:

Left Level +0dB

If you have an on-screen display it shows:



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

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

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

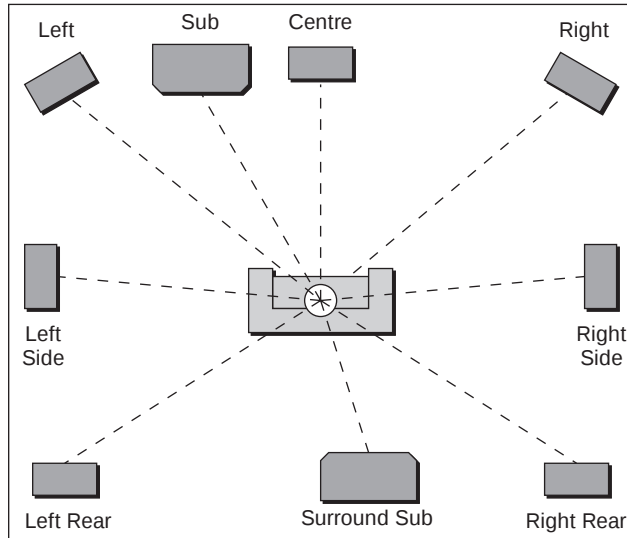
Note that you cannot set the level of a subwoofer by ear, because low-frequency noises sound quieter. To set the subwoofer correctly either use an SPL meter, or set it by ear and then reduce the subwoofer gain by 15dB to correct for human hearing.

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

Distance

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

Before setting up the speaker outputs you need to measure the distance, in feet and inches, to each speaker from the listening position:



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

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

The display shows the speaker being tested, and the distance in feet.

For example:

Left Distance 18'0

If you have an on-screen display it shows:

```

Left Distance 18'0

Measure from the tweeter to
the listening position.
(1'=12 inches=300mm)
MENU ↑↓ adjusts the distance
MENU ←→ changes test
STORE moves to next stage
    
```

- Use ▲ and ▼ to change the distance, in feet.

Repeat this for each of the speakers in your layout.

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

Fine tuning

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

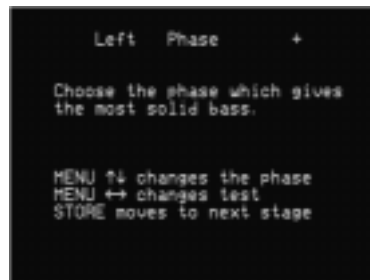
- Use the ► and ◀ keys to move between each of the speakers in the layout.

The first display allows you to adjust the phase.

For example:

Left Phase +

If you have an on-screen display it shows:

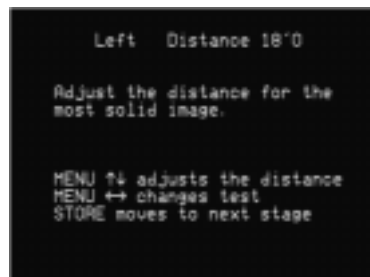


The next display shows the distance (or delay) for the same speaker.

For example:

Left Distance 18'0

If you have an on-screen display it shows:



Choose the correct setting as follows:

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

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

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

You have now completed the calibration of your system.

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

Resetting the configuration of the Digital Surround Controller

The Digital Surround Controller provides several sets of standard settings, called Types, which configure all aspects of the 861 into one of a number of alternative standard configurations.

Types 0 to 5 are factory settings, designed to cater for the most commonly needed configurations of associated equipment.

These standard Types are shown in the following table:

Type	Music Sub	Cinema Sub	5.1 Sub	Speakers
0	None	Centre	LFE	All analogue.
1	Mono	Mono	Mono	All analogue.
2	None	Centre	LFE	All digital.
3	None	None	None	All digital, large centre.
4	None	Centre	LFE	Digital left, right, and centre.
5	None	Centre	LFE	Digital left and right.

In this table Music Sub refers to a subwoofer used for all Music DSP presets, Cinema Sub to a subwoofer used for all Cinema DSP presets, and 5.1 Sub to a subwoofer used for all Discrete digital DSP presets.

In addition, your installer may have provided one or more named User Types, with settings appropriate to the configuration of equipment when your 861 was installed.

You can reset the configuration of the Digital Surround Controller to any of these Types to restore it to the state it was in when it was installed. Note that selecting a Type will clear any configuration and calibration changes you have made, or any DSP presets you have defined.

If your Digital Surround Controller is fitted with a video card, and you have a video source connected, the on-screen display also provides additional text explaining about each Type. For information about setting up the on-screen display refer to the *861 Reference Digital Surround Controller System Guide*.

To select a standard setting

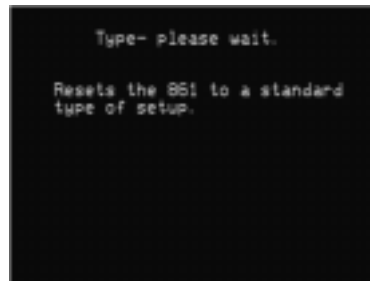
Warning: this procedure will reset any configuration and calibration changes you have made.

- Switch off the 861, using the power switch on the back panel.
- Switch off any power amplifiers that are connected to the 861 and put any digital speakers into standby.
- Switch on the power again while holding down the **Off** key on the front panel.

The display will show:

Type- please wait.

If you have an on-screen display it shows:

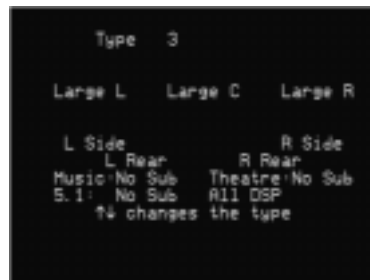


Then after a short delay the display shows the current Type.

For example:

Type 3

If you have an on-screen display it shows information about the Type; for example:

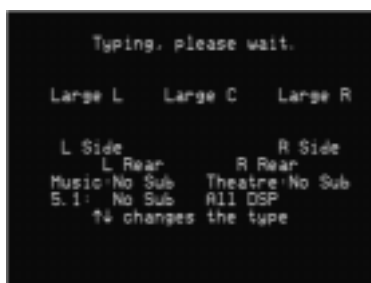


- Press ▲ or ▼ on the front panel to change the Type number.

The display shows:

Typing, please wait.

If you have an on-screen display it shows:



- Wait for one second, and then switch off the 861 using the power switch on the back panel.
- Switch on again to use the standard settings you have selected.

Setting up the Digital Surround Controller with other Meridian equipment

If you are using the 861 with other Meridian equipment, such as the 800 Reference CD Machine, you should set up the comms with the following automatic setup procedure:

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

Each unit will display:

Auto Setup

The 861 will then be designated as the controller, and display:

Controller

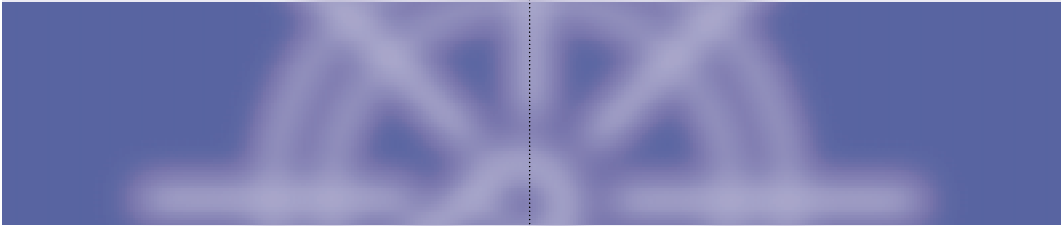
This is the unit that will respond to the remote.

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

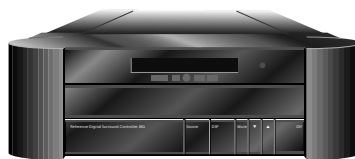
Not Controller

Your system is now set up and ready for use.

- If for any reason the automatic setup does not give the configuration you want, restore the default operation by selecting one of the standard Types; see *Resetting the configuration of the Digital Surround Controller*, page 54.



Glossary



Absolute phase

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

AC-3

An alternative name for the Dolby Digital format.

Ambisonic

A music encoding and decoding system designed to recreate the original soundfield using an array of loudspeakers.

Aspect ratio

The overall shape of the speaker layout.

Compress

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

Controller

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

Dolby Digital

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

Dolby Surround

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

DTS

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

DVD

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

Layout

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

LFE

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

LFE sub

A subwoofer which, in addition to any bass which it handles from the main channels, plays the full 120Hz bandwidth LFE signal in Dolby Digital, DTS, and MPEG presets.

Limit

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

Max SPL

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

Menus

The flexible system for choosing options and configuring settings in Meridian products. On the 861 the menus are controlled by the ◀, ▶, ▲, and ▼ keys on the front panel or the MSR.

Mono sub

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

Mono surrounds

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

MPEG

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

MSR

The Meridian System Remote, or handset.

OSD

On-Screen Display, which the 861 can superimpose on a composite video signal to give information about the state of the system, and to help during configuration.

Preset

A DSP decoding option in the 861. You can create user-defined presets based on the built-in presets, and with specific parameter values; see *Defining your own presets*, page 31.

Source

An input to the system, such as CD or TV. The Meridian 500 and 800 Series provide 12 named sources, corresponding to the names of the 12 source keys on the MSR. In the 861 you can choose the logo displayed for each source, and the input used for it.

SPL

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

Steered surrounds

Surrounds which have individual signals steered to them by the Digital Surround Controller's steering matrix.

Surround

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

THX

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

Trifield

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

Type

A standard configuration of the Digital Surround Controller. Selecting a Type resets any configuration and calibration changes.

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