



# DSP320.2 DSP LOUDSPEAKER USER GUIDE



MERIDIAN

## Important safety instructions

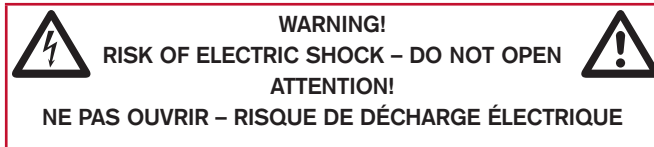
- Read the instructions.
- Keep these instructions.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with a dry cloth.
- Install only in accordance with the manufacturer's instructions.
- Refer all servicing to approved service personnel.

**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



**Caution:** to reduce the risk of electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

## Climate

The equipment has been designed for use in moderate climates and in domestic situations.



Only use at an altitude not exceeding 2000m.

## Safety warnings

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

## To avoid overheating

- Do not position the product in direct sunlight.
- Do not position the product near heat sources, such as a radiator.
- Do not position the product on a soft surface such as a carpet.
- Leave at least 10cm around the product to ensure sufficient ventilation.

## To avoid interference

- Do not position the unit near strong electrical or magnetic radiation, such as near a power amplifier.

## 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 EN55032:2015 and EN55024:2010 + A1:2015.

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### Product registration

Register your DSP320.2 DSP Loudspeaker at:

[www.meridian-audio.com/register](http://www.meridian-audio.com/register)



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# Introduction

The DSP320.2 is perfect for delivering high-quality music discreetly in any living or cinema room, whether used in stereo systems, full surround sound set-ups, single-loudspeaker installations, or multi-speaker listening zones.

It features one “racetrack” oval bass driver and one 85mm wide-range driver for full-frequency response, each driven by an 80W power amplifier, making it capable of delivering full-range sound at in excess of 106dB at one metre, with bass extension down to 50Hz.

## Acoustics

The DSP320.2 has been designed for maximum dispersion and wide listening area plus minimum unwanted diffraction.

Each drive unit is powered individually by a dedicated low-distortion 80W Class-D amplifier.

L+R mode allows a single loudspeaker to be used on its own while still reproducing all the audio present in a stereo recording. In addition, L+R mode makes multiple DSP320.2s a great choice for larger areas with no specific listening position.

## On-board DSP

On-board DSP provides thermal and dynamic bass protection while retaining very accurate transients, ensuring that when

the loudspeaker is played at high levels – even over prolonged periods of time – it always delivers a clean, detailed and accurate sound.

## Enhanced Bass Alignment (EBA)

Meridian’s innovative Enhanced Bass Alignment (EBA) uses two different technologies to time-align high, mid, and upper bass frequencies with the low bass, resulting in audibly improved bass transients and added life and clarity.

## Enhancement technologies

Meridian’s unique suite of proprietary technologies includes FIFO buffering, DSP upsampling, apodising filters, and MHR (Meridian High Resolution) to get the very best performance from all digital sources.

## Construction

The DSP320.2 is designed to have an elegant profile, with only 100mm installation depth.

It is constructed from a self-contained, all-metal enclosure. A purpose-built rough-in wall-box is available separately. The rough-in box is first fitted to the wall, and the loudspeaker enclosure is then bolted to the rough-in box. The loudspeaker is supplied with a trim frame which can optionally be fitted

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according to the preferred finished appearance. The rough-in box can be adjusted for various wall materials and depths.

The rough-in box is wired to mains power and the loudspeaker carries a captive IEC mains lead which plugs into the mains outlet socket on the rough-in box.

The paintable, perforated steel grille supplied with the loudspeaker can be fitted where required. The grille is held in place by powerful rubber-coated magnets which are attached to the aluminium extrusion that forms the front panel of the loudspeaker enclosure.

### **Controlling the loudspeaker**

The loudspeaker can be controlled in three ways:

- In most installations, the loudspeaker will be controlled by another Meridian product within the system.
- Alternatively, the loudspeaker features an infra-red receiver which allows it to be controlled using a Meridian System Remote.
- Thirdly, the loudspeaker can be controlled using RS232 commands.

# Specifications

## Audio input

- 1 x Meridian SpeakerLink connector (RJ45).

## Audio output

- 1 x Meridian SpeakerLink connector (RJ45).

## Drivers

- Wide-range: 85mm with neodymium magnet.
- Bass: 100mm x 150mm racetrack oval with polypropylene cone.

## Amplifiers

- Wide-range driver: 1 x 80W Class D amplifier.
- Bass driver: 1 x 80W Class D amplifier.

## Performance

- Peak SPL: 106dB @ 1m.
- Bass extension: 50Hz.

## Front panel

- Switch selects **Right, L+R, or Left or Centre.**
- IR window.
- LED indicators show power status and configuration settings.

## Physical

- Dimensions\*: 290mm x 290mm x 103mm (11.4" x 11.4" x 4.0") (H x W x D).
- Weight: 5kg (11lb).
- Grille dimensions: 292mm x 292mm x 4mm (11.4" x 11.4" x 0.16") (H x W x D).
- Frame dimensions: 316mm x 316mm x 15mm (12.4" x 12.4" x 0.6") (H x W x D).

\* Excluding frame and cable feed channel.

## Power

- Flying IEC mains lead connects to mains socket on rough-in wall box.
- 500W max.
- 100-240V AC, 50/60 Hz.

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# Installing the DSP320.2 DSP Loudspeaker

The loudspeaker is designed to be fitted in a Meridian wall box type RF300. If necessary, refer to the *RF300 Wall Box Installation Instructions*:

<https://www.meridian-audio.com/rf300-installation.pdf>

## Contents

Each DSP320.2 loudspeaker is supplied with the following components:

- Trim-frame.
- Grille.
- 3mm Allen key.
- 4 x M5 guide screws for installing into rough-in box.
- 2 x grille extractor keys.

## 1. Prepare the loudspeaker for installation

- Remove the grille and scrim from the loudspeaker and put them to one side for use later if required.
- Remove the two plastic nuts and bolts used to retain the trim-frame during shipping.

- Remove the trim-frame.

The loudspeaker can be installed either with or without the trim-frame according to the preferred final appearance.

Because of the weight of the loudspeaker and the method of installation we recommend getting assistance from a second person when installing the loudspeaker.

## 2. Identify the cables

If the speaker is part of a daisy-chain there will be two SpeakerLink cables in the rough-in box. They must be connected correctly or the system will not function.

- Identify which cable is the **SpeakerLink input** cable and which is the **SpeakerLink output** cable.

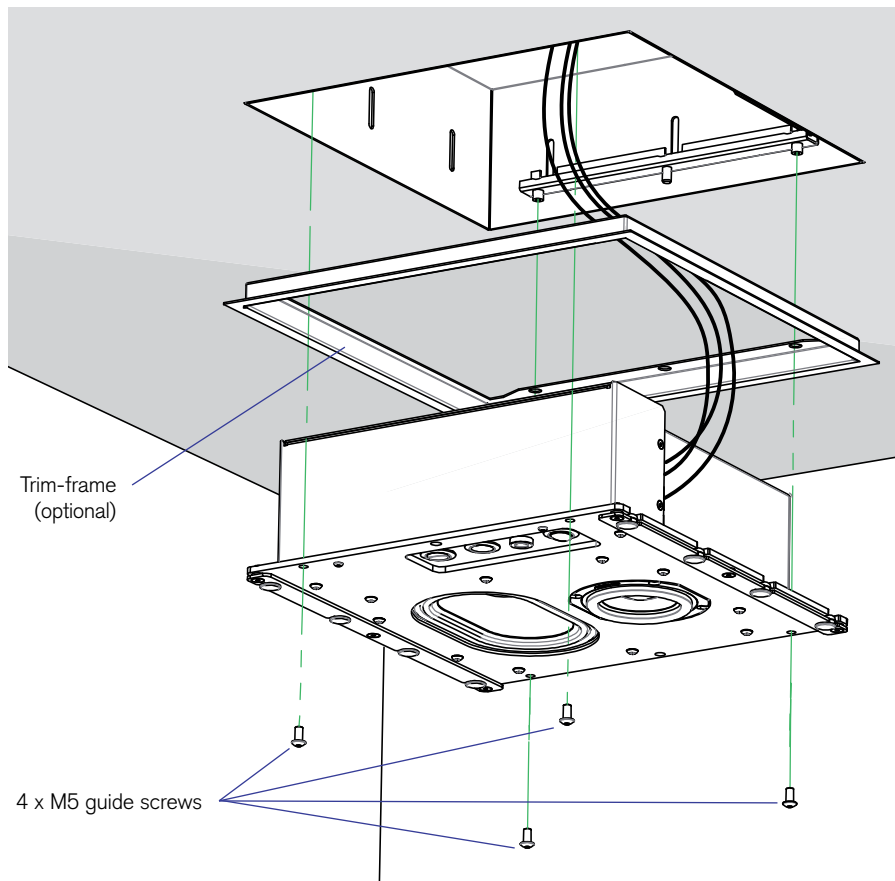
If there is only one SpeakerLink cable in the rough-in box it will be a **SpeakerLink input** cable.

- Identify the mains cable from the loudspeaker to the rough-in box.

### 3. Install the loudspeaker

- If the trim-frame is to be fitted, position it on the back of the loudspeaker.
- Set the power switch on the front of the loudspeaker to the **Off** position.
- Hold the loudspeaker close to the rough-in box.
- Plug the SpeakerLink input cable into the **SpeakerLink input** socket on the loudspeaker. If there is also a SpeakerLink output cable plug it into the **SpeakerLink output** socket on the loudspeaker.
- Plug the loudspeaker's mains cable into the mains inlet socket in the rough-in box.
- Insert the loudspeaker into the rough-in box, taking care not to trap the connecting cables in any way.
- Fix the loudspeaker in place with the four M5 x guide screws.

No additional fixings are required to retain the trim-frame (if fitted).



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### 4. Set the front-panel switches

- Set the channel selection switch according to how the loudspeaker is being used within the system.

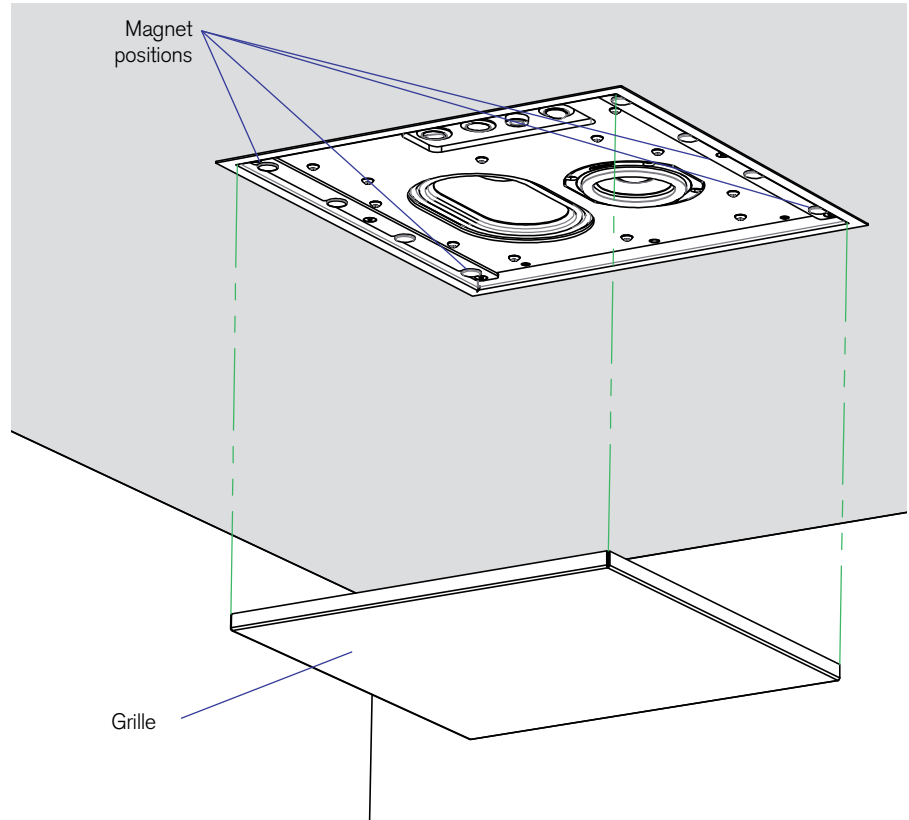
Once the associated equipment connected to the loudspeaker is powered up:

- Set the power switch on the front of the loudspeaker to the **On** position.

### 5. Fit the grille – if required

- Carefully locate one edge of the grille.
- Lift the grille into position.

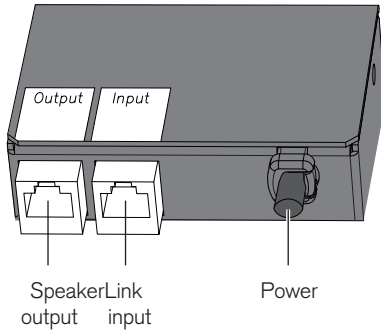
The magnets will grab the grille and hold it in position.



# Front and back panel

## Connections

The following diagram gives details of the connections on the back of the loudspeaker:

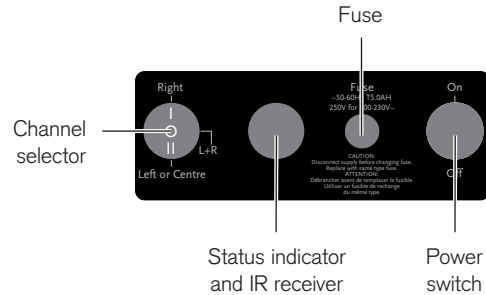


Use this connection	To connect to this
SpeakerLink input	The SpeakerLink output of a Meridian controller or another loudspeaker when connecting in a daisy-chain.
SpeakerLink output	The SpeakerLink input of another loudspeaker when connecting in a daisy-chain.

Use this connection	To connect to this
Power	A captive power cord to connect to the RF300 rough-in box power outlet.

## Front panel

The following diagram gives details of the front panel:



Item	Description
Channel selector	Specifies the loudspeaker's role in the system. See <i>Setting up the DSP320.2 DSP Loudspeaker</i> , page 9.
Power switch	Controls the mains supply to the loudspeaker.

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### Standby indicator

Status	Description
Blue	Loudspeaker in standby.
White	Loudspeaker operating. At power-up flashes once if IR is off and twice if IR is on.

The loudspeakers are switched on or into standby as appropriate via the SpeakerLink connections by the Meridian system they are connected to.

### To configure the IR receiver

Hold down one of the following keys on an MSR remote (not supplied) while powering up the speaker:

**Next:** Turns on IR; white LED flashes twice.

**Previous:** Turns off IR; white LED flashes once.

**Stop:** Resets all to factory settings; white LED flashes 3 times.

## Setting up the DSP320.2 DSP loudspeaker

This section explains how to set up the loudspeaker in each of the typical applications.

### Using the loudspeaker on the left of the system

- Set the channel selector switch to **Left or Centre**.

In a multichannel system this applies to all loudspeakers on the left-hand side of the room

### Using the loudspeaker on the right of the system

- Set the channel selector switch to **Right**.

In a multichannel system this applies to all loudspeakers on the right-hand side of the room

### Using the loudspeaker to play a mix of left and right audio

- Set the channel selector switch to **L+R**.

This will play a balanced mix of left and right audio, allowing a single loudspeaker to reproduce all the audio present in a stereo recording. It also provides a useful option for systems

using multiple speakers where the listening area does not have clearly-defined left and right loudspeaker positions.

### Using the loudspeaker as a centre channel

- Set the channel selector switch to **Left or Centre**.

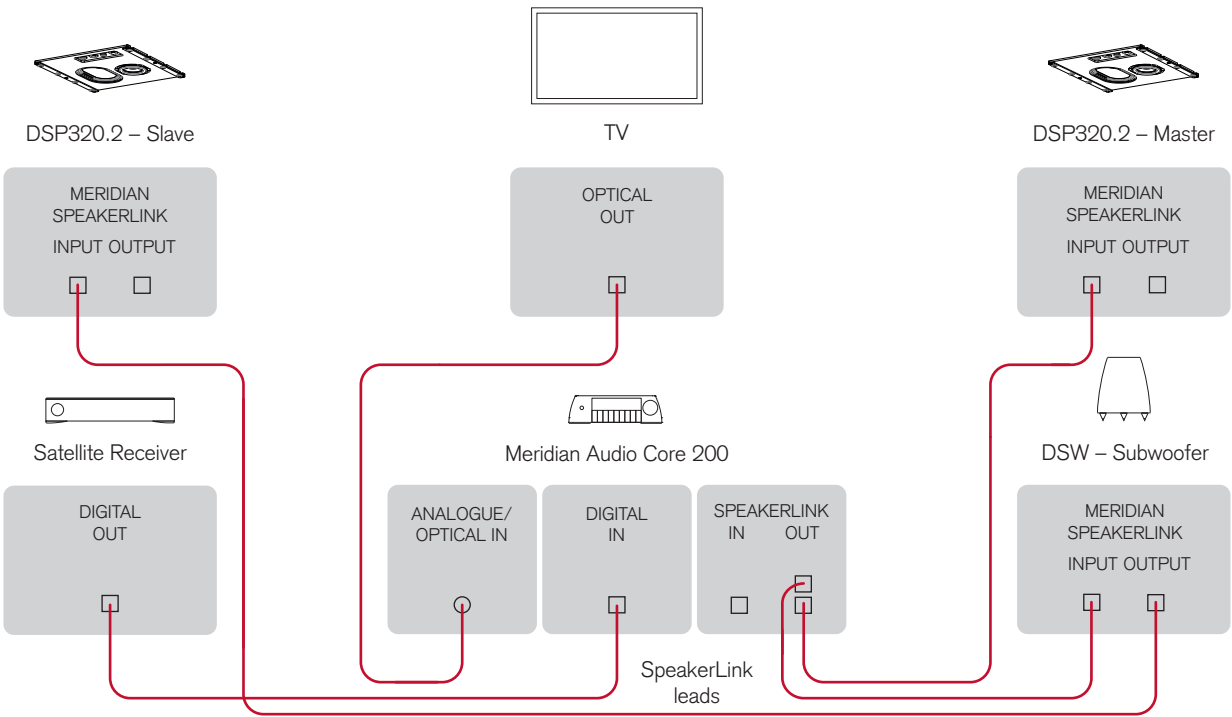
# Applications

### To connect an Audio Core 200 and DSW in a 2.1 system

The DSP320.2 loudspeakers are ideal for a compact home entertainment system based on a Meridian Audio Core 200.

- Connect analogue and digital sources, such as a TV and satellite receiver, to the appropriate inputs on the AC200.
- Connect the lower SpeakerLink output on the Audio Core 200 to the SpeakerLink input of the Master DSP320.2 loudspeaker, using a Meridian SpeakerLink lead.
- Connect the upper SpeakerLink output on the Audio Core 200 to the SpeakerLink input of the DSW subwoofer, using a Meridian SpeakerLink lead.
- Connect the SpeakerLink output from the DSW subwoofer to the Slave DSP320.2 loudspeaker, using a Meridian SpeakerLink lead.
- Set the Channel selector to the **Left or Centre** position on the left DSP320.2 loudspeaker, to the **Right** position on the right DSP320.2 loudspeaker, and to the **1+2** position on the DSW subwoofer.

The subwoofer level and crossover are adjustable from the AC200 menus.



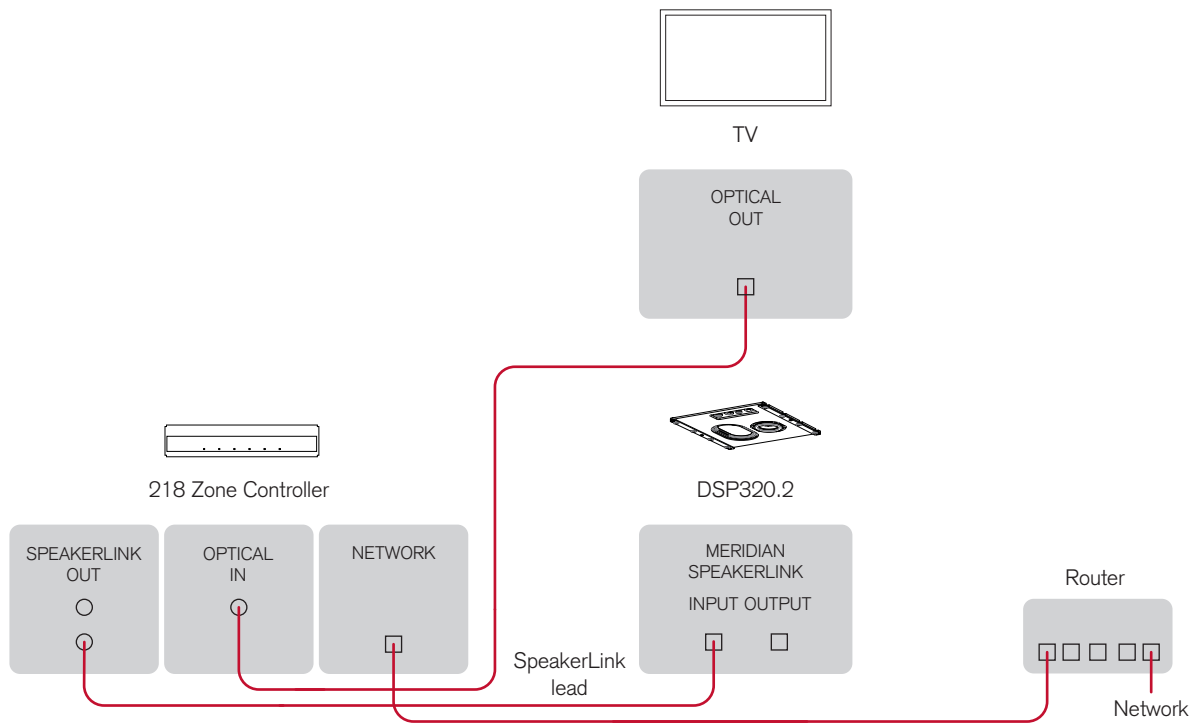
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### To connect a 218 to a single loudspeaker

The DSP320.2 loudspeaker can be used individually with a TV, or in another single loudspeaker system, controlled by a 218 Zone Controller.

- Connect the lower SpeakerLink output (labelled Master) on the 218 Zone Controller to the DSP320.2, using a Meridian SpeakerLink lead.
- Set the Channel selector to the **L+R** position on the DSP320.2.
- Connect the Network socket from the 218 Zone Controller to a LAN network connection on your Router, using CAT5 cable.
- Connect the optical output of the TV to the optical input of the 218.

Audio can be streamed to the system and controlled via the Network socket on the 218.



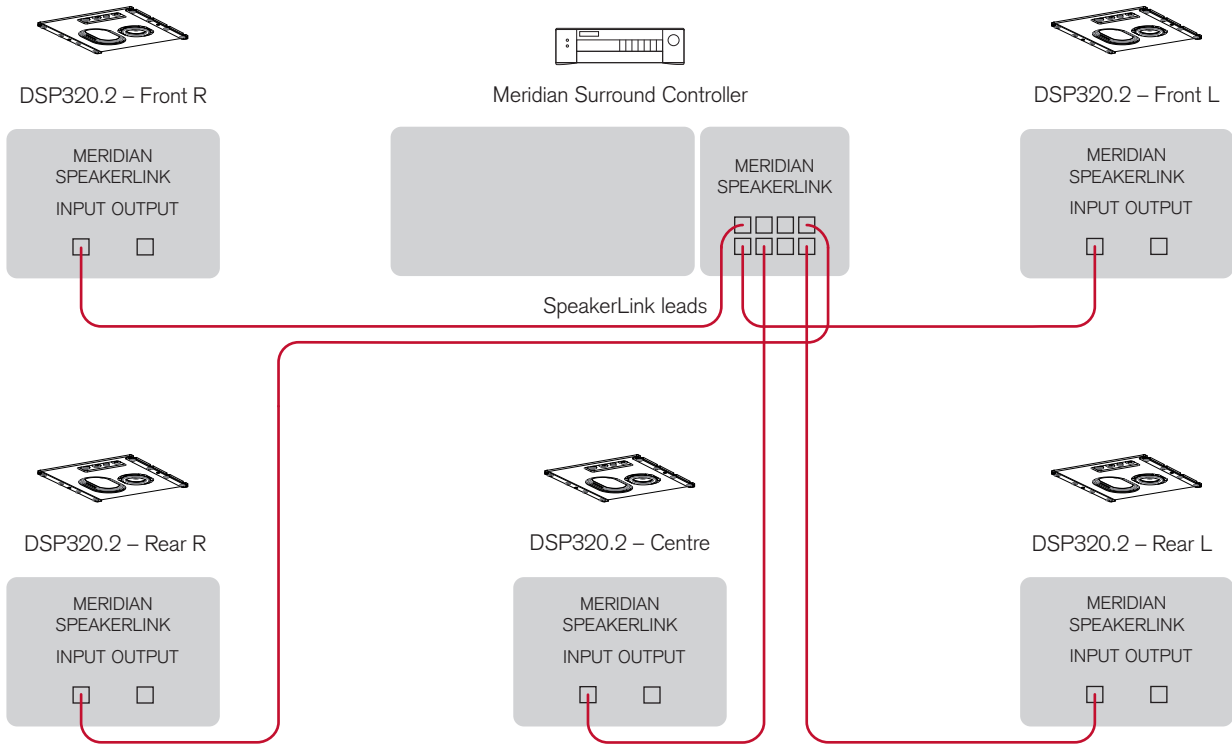
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### To use DSP320.2 loudspeakers in a Meridian Digital Theatre

DSP320.2 loudspeakers are ideal as the front, rear, and centre loudspeakers in a Meridian Digital Theatre, in conjunction with a Meridian Digital Surround Controller such as the G65. The following diagram shows how to connect the loudspeakers using “home run” wiring.

- Connect the L+R SpeakerLink output on the lower row (labelled Master) of the G65 to the front left DSP320.2 loudspeaker, using a Meridian SpeakerLink lead.
- Connect the appropriate SpeakerLink outputs on the G65 to each of the remaining loudspeakers, using Meridian SpeakerLink leads.
- Make sure the Channel selector on each DSP320.2 is set to the **Left or Centre** position on the left and centre loudspeakers and to the **Right** position on the right loudspeaker.

Alternatively you can connect the loudspeakers using “daisy chain” wiring: connect the front and rear L loudspeakers to the G65, and then link each pair of loudspeakers together by connecting the output from the L loudspeaker to the input of the R loudspeaker.

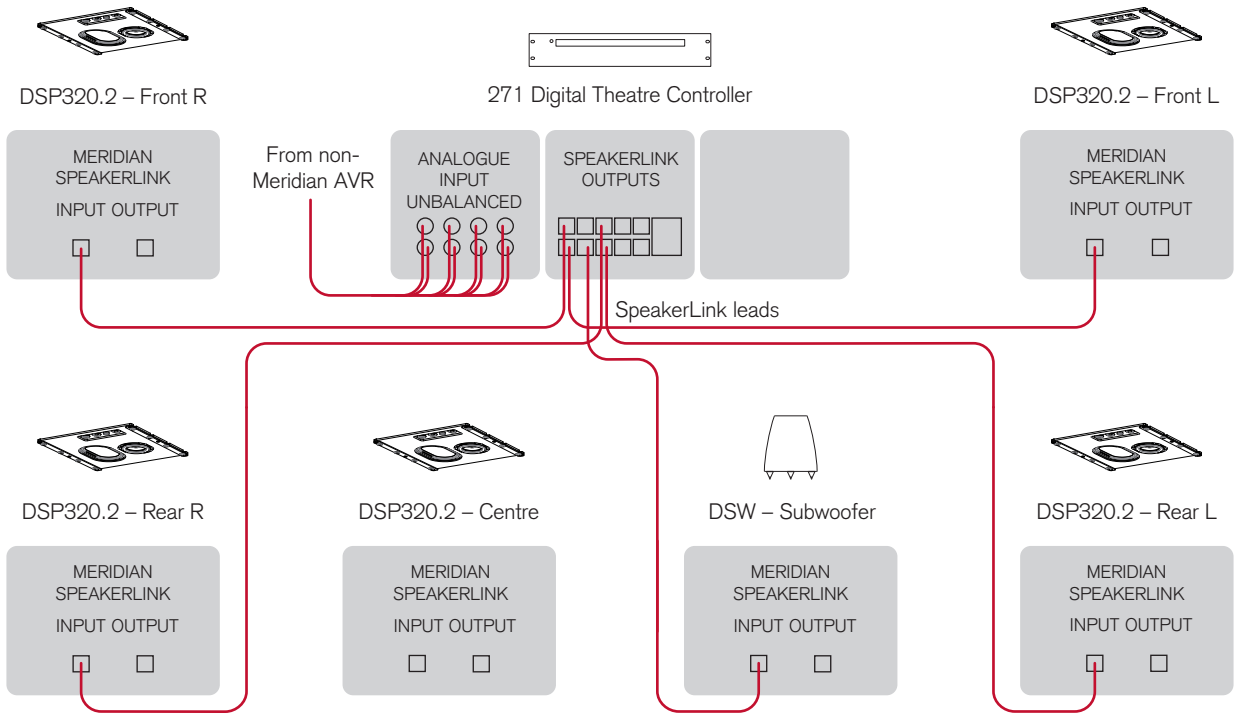


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### **To use DSP320.2 loudspeakers with a Meridian 271 and a non-Meridian AVR**

The Meridian 271 Digital Theatre Controller acts as an interface between a non-Meridian surround-sound processor (AVR) and Meridian DSP loudspeakers. This is a 5.1 system based on an AVR with unbalanced analogue outputs. The same connection method can be used for systems with more channels, such as those which support immersive audio formats.

- Set the channel selector switch on each of the DSP320.2 loudspeakers according to its role within the system.
- Connect the DSP320.2 loudspeakers to the SpeakerLink outputs on the 271 as appropriate for their position in the system. By convention, loudspeakers on the left-hand side of a Meridian system and the centre-channel loudspeaker use odd channel numbers (1, 3, 5, etc.) and loudspeakers on the right-hand side of the system use even numbers (2, 4, 6, etc.)
- Connect the unbalanced analogue outputs from the AVR to the unbalanced analogue inputs on the 271, using RCA phono cables.



# RS232 commands

RS232 is one of several interfaces carried by the Meridian Speakerlink RJ45/Cat5 connection. The Meridian Distributor and the Meridian AC12 make this interface available on a standard RS232 connector.

### Port settings

9600 Baud, 8 data bits, 1 stop bit, no parity, no flow control

### Command format

RS232 commands consist of ASCII characters which are case sensitive. Some commands require parameters, so these are followed by additional characters. All commands are terminated with a carriage return.

For example, to change the volume level to 45, the command is:

```
VN45
```

This will cause the loudspeaker to change its volume and respond with:

```
Volume 45
```

### Non-volatile configuration and reset

Some of the RS232 commands described in this document produce non-volatile (lasting) configuration changes in the DSP loudspeaker. These commands should be used carefully because they may affect the sound and operation of the loudspeaker without giving any obvious external indications.

An RS232 command is provided to reset the loudspeaker to its default configuration. The loudspeaker may also be reset by powering-up with the stop key pressed on the MSR+ remote control. This is confirmed by three flashes from the white LED on the loudspeaker.

## Loudspeaker control commands

These commands are used for everyday control of a pair loudspeakers such as by a control system connected to the master loudspeaker through a Meridian Distributor.

Command Type	Code	Parameters	Meaning	Function	Example Response
<b>Source Selection</b>	CD	None, sb <sup>1</sup>	Select source	Select source 0	CD 65
	RD	None, sb <sup>1</sup>	Select source	Select source 1	Radio 65
	LP, AX or MS	None, sb <sup>1</sup>	Select source	Select source 2	SLS 65
	TV	None, sb <sup>1</sup>	Select source	Select source 3	TV 65
	TA, T1 or IP	None, sb <sup>1</sup>	Select source	Select source 4	iPod 65
	T2 or SA	None, sb <sup>1</sup>	Select source	Select source 5	SAT 65
	CR or DC	None, sb <sup>1</sup>	Select source	Select source 6	Disc 65
	CB	None, sb <sup>1</sup>	Select source	Select source 7	Cable 65
	TX or DV	None, sb <sup>1</sup>	Select source	Select source 8	DVD 65
	V1 or US	None, sb <sup>1</sup>	Select source	Select source 9	USB 65
	V2 or MX	None, sb <sup>1</sup>	Select source	Select source 10	Mixer 65
	LD or GA	None, sb <sup>1</sup>	Select source	Select source 11	Game 65
	SB	None	Standby	Standby	.
	MU	None	Mute	Mute	Mute 65

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<b>Command Type</b>	<b>Code</b>	<b>Parameters</b>	<b>Meaning</b>	<b>Function</b>	<b>Example Response</b>
<b>Volume</b>	VN	##	Volume number	Go to volume number	Volume 65
	VP	None	Volume Plus	Increase volume	Volume 66
	VM	None	Volume Minus	Decrease volume	Volume 64
<b>Audio Effects</b>	TN	±##.#	Treble Number	Go to Treble number	Treble + 6.0
	BN	±##.#	Bass number	Go to bass number	Bass + 5.0
	LN	±##	Left number	Go to balance setting	Left 3
	RN	±##	Right number	Go to balance setting	Right 6
	P+	None	Phase +	Phase +	Phase +
	P-	None	Phase -	Phase -	Phase -
<b>Display</b>	DI	ON, OFF	Display	Light on or off	Light On

## Source control commands

These commands allow control of a Meridian source connected to the master loudspeaker. No response is given on RS232.

<b>Code</b>	<b>Meaning/Function</b>
PL	Play
ST	Stop
PS	Pause
RP	Repeat
NE	Next
PR	Previous
FF	Fast Forward
FB	Fast Back
MP	Menu up
MM	Menu down
ML	Menu left
MR	Menu right
N0 - N9	Number keys
SR	Store
CL	Clear

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### Configuration

These commands affect only the connected loudspeaker. They configure features of the loudspeaker that would otherwise be inaccessible without a SpeakerLink capable controller.

The settings made are non-volatile (ie they remain when the loudspeaker is powered down). These settings can override commands from a SpeakerLink controller, so they should be used with caution. To restore SpeakerLink control, choose the SL parameter.

Command Type	Code	Parameters	Meaning	Example Response
<b>IR receiver</b> <sup>2</sup>	IR	ON	Turns on IR receiver eye	IR on
		OFF	Turns off IR receiver eye	IR off
<b>Speaker position</b>	B0	SL	Boundary EQ controlled by Speakerlink	NV Boundary Speakerlink
		FR	Free-space equalization <sup>3</sup>	NV Boundary Free
		WA	Wall equalization	NV Boundary Wall
		SH	Shelf equalization	NV Boundary Shelf
		C0	Corner equalization	NV Boundary Corner
<b>Subwoofer</b>	SW	SL	Subwoofer Controlled By Speakerlink	NV Subwoofer Speakerlink
		OFF	Subwoofer Off	NV Subwoofer Off
		1	Subwoofer Crossover 1	NV Subwoofer Sub 1
		2	Subwoofer Crossover 1	NV Subwoofer Sub 2
		WI	Subwoofer Wideband	NV Subwoofer Speakerlink
		SG	+ / - ##	Subwoofer Gain <sup>4</sup>

<b>Command Type</b>	<b>Code</b>	<b>Parameters</b>	<b>Meaning</b>	<b>Example Response</b>
<b>Audio Effects</b>	EA	SL, ON, OFF	Enhanced Bass Alignment (EBA)	NV EBA On
	EC	SL, OFF, MIN, MED, MAX	Enhanced Boundary Control (EBC)	NV EBC Med
	RH	###	Room Height in cm for EBC <sup>5</sup>	NV EBA Room Height 210cm
	CE	SL, OFF, MIN, MED, MAX	Centre Elevation	NV Centre Elevation Min
	LO	SL, ON, OFF	Loudness	NV Loudness Speakerlink
	Cm <sup>6</sup>	ON, OFF	Centre mode	NV Left or Centre
	Mm	SL, MU, MO	Music/Movie Mode <sup>7</sup>	NV Music Mode
<b>Status/Reset</b>	NV	None	Non-volatile	A list of the non-volatile settings
		RS	Non-volatile Reset	Resets all non-volatile settings

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### Utility/diagnostic

Code	Meaning	Response
IR2	Infra-red receiver status	IR on/IR off
Cm	Centre mode status	A text description of the status
ID	Identity	A list of product name and versions
!R	Reset	Bye

### Notes

1. When in standby, a source selection command may be followed by sb (e.g. CDSb). This allows e.g. a connected Distributor to change source, but the speakers will remain in standby.
2. Available only on Meridian DSP320, DSP520 and DSP640.
3. Free-space equalization is not available on in-wall loudspeakers.
4. The non-volatile subwoofer gain is only used when the non-volatile subwoofer setting is not SL. The range is -15 to +15 in 1dB steps.

5. The non-volatile room height is only used when the non-volatile EBC setting is not SL. The range is 150 to 400cm in 1cm steps.

6. Centre mode applies only to DSP520.2 and DSP640.2

7. Music/Movie mode applies only to the Meridian DSW.

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