

MERIDIAN D1500 USER GUIDE

Sales and service in the UK

Meridian Audio Ltd

~~Stonehill~~

~~Stukeley Meadows~~

Huntingdon

Cambridgeshire ~~PE18 6ED~~

England

~~Tel (0) 1480 52144~~

~~Fax (0) 1480 459934~~

Sales and service in the USA

Meridian America Inc

~~3800 Camp Creek Parkway~~

~~Building 2400 Suite 122~~

~~Atlanta GA 30331~~

USA

~~Tel (404) 344 7111~~

~~Fax (404) 346 7111~~

Author: Philip Mendham

"Boothroyd\Stuart Meridian", **MERIDIAN**
and *"Meridian Digital Theatre"* are
registered trademarks of Meridian Audio
Ltd

© Meridian Audio Ltd 1999

Introduction

In choosing a Meridian D1500 Active Subwoofer, you have acquired refined equipment which will bring you listening pleasure for many years to come. Whether as part of an enhanced stereo system or a full home theatre, the subwoofer is designed to bring you the highest quality sound possible. This manual should help you get the best from it.

If you have any queries regarding the D1500, remember that Meridian Dealers have been selected for their expertise. You should refer to your dealer in the first instance.

General Description

The D1500 is part of the current range of Meridian Active Loudspeakers. They use built-in power amplifiers specifically tailored for the cabinet and drive units to give a perfectly matched system. This superior approach to the design of high-fidelity loudspeaker systems has been a speciality of Meridian for twenty years.

Your D1500 has a digital input and output, Meridian Comms, a digital input selection switch, a switchable electronic crossover a gain control and a power amplifier. The drive unit is a custom 10" long throw woofer with 2kg shielded magnet in a magnesium basket.

Unpacking

The subwoofer comes in a export strength carton containing the following components.

- 1 D1500 Active Subwoofer complete with grill
- 4 screw in castors
- 4 screw in spikes
- 4 lock nuts and a nut spanner
- 4 plastic spike covers
- 1 Slave lead ("S lead")
- 1 Slave Y lead ("SY lead")
- This manual
- 1 power cord suitable for your territory

You are advised to retain the packing in case you need to transport the unit.

The D1500 subwoofer weighs 35kg. Do not attempt to lift it without assistance.

WARNING Take great care when unpacking or re-packing the D1500 that you do not put undue pressure on the front, as the drive unit may be damaged if pressed.

Getting Going

IMPORTANT: Before connecting to the AC supply, check that the unit has been manufactured to the correct supply voltage for your territory.

IMPORTANT: Do not make any alterations to the connections of your system with the D1500 AC power switched on.

We suggest you follow the full instructions in the **Installing your D1500** section. If, however, you want to get going fast:

- Assemble the four castors by screwing on the four locking nuts supplied.
- Fit the four castors to base of the unit into the four M8 brass inserts.
- Connect the digital input of the speaker to an appropriate digital output on a Meridian surround sound decoder or digital active loudspeaker, using the phono on the Meridian 'S-lead' supplied.
- Connect the Din socket on the 'S-lead' between either of the Meridian Comms sockets on the subwoofer and to the slave patch on the surround sound decoder, Meridian 511 or comms out on a meridian digital speaker. If a socket is not available the "SY lead" can be used to patch the subwoofer into the chain.
- Set the digital channel selector switch. If the subwoofer is to be used as a **left** sub with a meridian surround sound decoder, or it is used as bass re-enforcement for left main, side or rear DSP speakers select channel 1. Similarly if the sub is to be used as a **right** subwoofer select channel 2. If the subwoofer is to be used as a **mono** subwoofer for either main, sides or rear DSP speakers then choose channel 1+2. If the subwoofer is to

be used as bass reinforcement for a centre channel or it is to be installed in a Meridian digital theatre as a 5.1 sub then set channel 2.

- Set the filter selection switch. If the subwoofer is to be used as bass re-enforcement for DSP5000 loudspeakers then choose Filter 1. If the subwoofer is to be used as bass re-enforcement for DSP33 loudspeakers then choose Filter2. If the subwoofer is being used with a Meridian surround sound processor as a 5.1 sub then choose flat and use the surround sound processors internal filter to set the subwoofer crossover frequency.
- Switch on the power at the source at a low volume level.
- Connect the D1500 to AC power with the cord provided.
- Switch on the D1500 with the switch located next to the AC power inlet. A green light should appear on the rear panel of the unit.
- Set the gain control on the rear of the subwoofer approximately half way.
- Play a source, the subwoofer should now play at its default volume of 65. If you cannot hear any sound, refer to **Help!**
- Adjust the system volume using either the MSR handset or front panel control on the surround processor. The subwoofer will now track the system settings.
- Calibrate the subwoofer using the gain control on the rear or the surround sound processors calibration mode.

Installing your D1500

This section explains how to get the best from your D1500 installation. If your system includes a Meridian 565 Digital Surround Processor, you will find more information on correct installation in its *User Guide*.

Siting

The position of the subwoofer in your room is just as important as that of any other loudspeaker to the final sound. Whilst the ear finds it hard to localise very low frequency sound, you may not get the best from your system if you site your subwoofers badly.

You will probably want to place your subwoofer where it is not too obtrusive, but if possible follow these guidelines.

- The closer the subwoofer is to the speakers it handles the bass for, the more impressive the bass will be.

- Thus if you have stereo subwoofers, which are best for music reproduction, place them near the Left and Right speakers. Then the bass will blend optimally between the main speakers and the subwoofers and the system will image well.
- If you are using the subwoofer as a mono or centre subwoofer, place it close to the centre of the room at the front, ideally under the centre channel if you have one.
- The front of the subwoofer should be directed at the listening seats if possible. In home theatre applications, this makes effects more convincing.
- Do not place anything in front of the subwoofer which could obstruct the air movement from the drive units.

Note. Systems containing subwoofers can produce very high levels of bass which may cause fixtures in a room to rattle and excite 'boomy' standing wave resonance's due to the shape of the room. Correct speaker positioning can help minimise these problems, which can be tested for when calibrating the subwoofer. Meridian Digital Surround Sound Processors have built in tests which can help with this without the need for special equipment or source material.

General Guidelines

Please note the following:

- If possible, you should locate the D1500 so that the electronics (rear) of the speaker are not subjected to long-term strong sunshine. The rear panel should be cool (less than hand-hot) when the unit is not in use.
- The D1500 is magnetically shielded and may be placed close to a television.
- In a custom cabinet it is entirely the responsibility of you and your dealer to ensure adequate ventilation. If in doubt this can be determined by operating the unit and monitoring the temperature of the rear panel.
- Permanent wiring to a building is prohibited by most building codes.

Final adjustments

Having sited your loudspeaker, we suggest you leave it on its castors until the system has been calibrated, after this stage fit the optional spikes.

Connections

All connections to the subwoofer are made on the panel at the rear of the unit. The unit should be switched off before any connections to the system are changed.

Power

AC mains is connected to the IEC power inlet. Where possible connect the D1500 to a grounded socket using the mains lead provided. Try to use a separate AC power outlet for each active speaker. The use of adapter units is discouraged as they degrade the sound quality.

Digital Audio

Digital audio may be connected to the digital input phono socket on the D1500 with the Meridian digital audio lead provided. The digital output may be used to slave other digital full range speakers or subwoofers requiring the same digital channels.

Meridian Comms

Meridian Comms may be connected using either of the comms sockets on the rear panel of the subwoofer. This in turn may be connected to the slave bus on a Meridian digital surround sound processor, 511 slave patch or the comms out socket on a Meridian digital loudspeaker.

Figures 1 to 4 show typical wiring configurations.

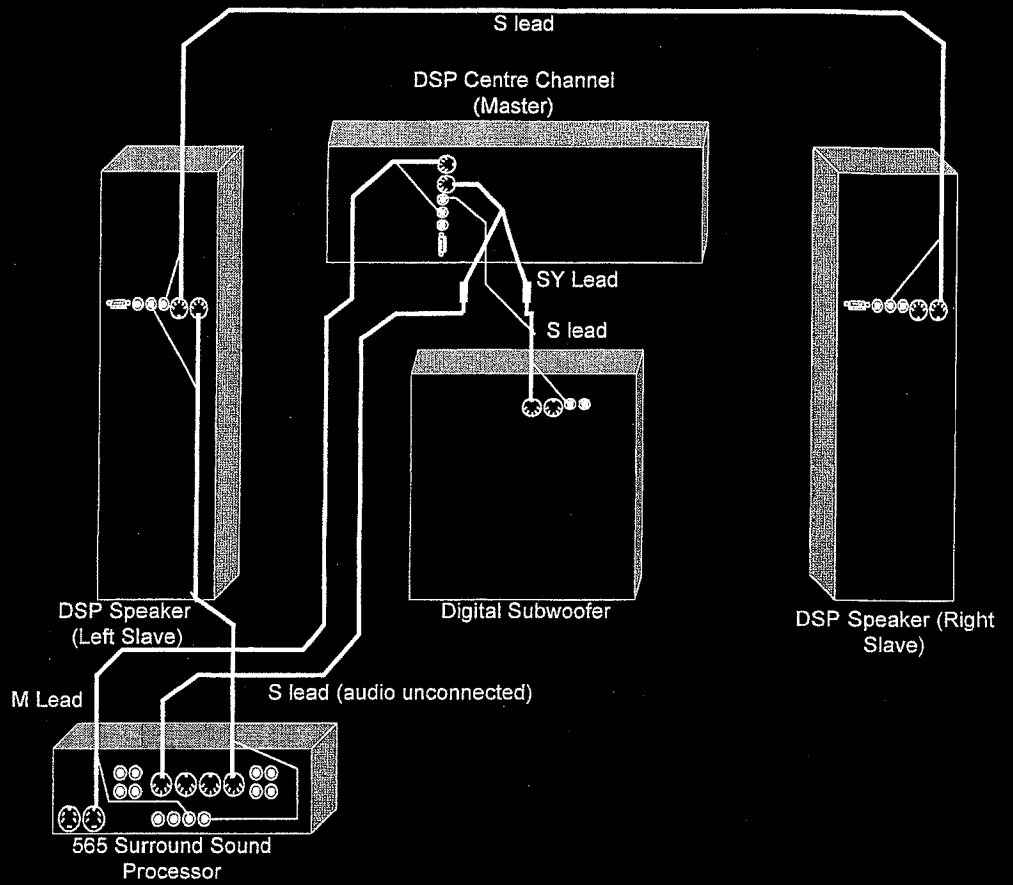


Figure 1: A typical centre/5.1 subwoofer installation

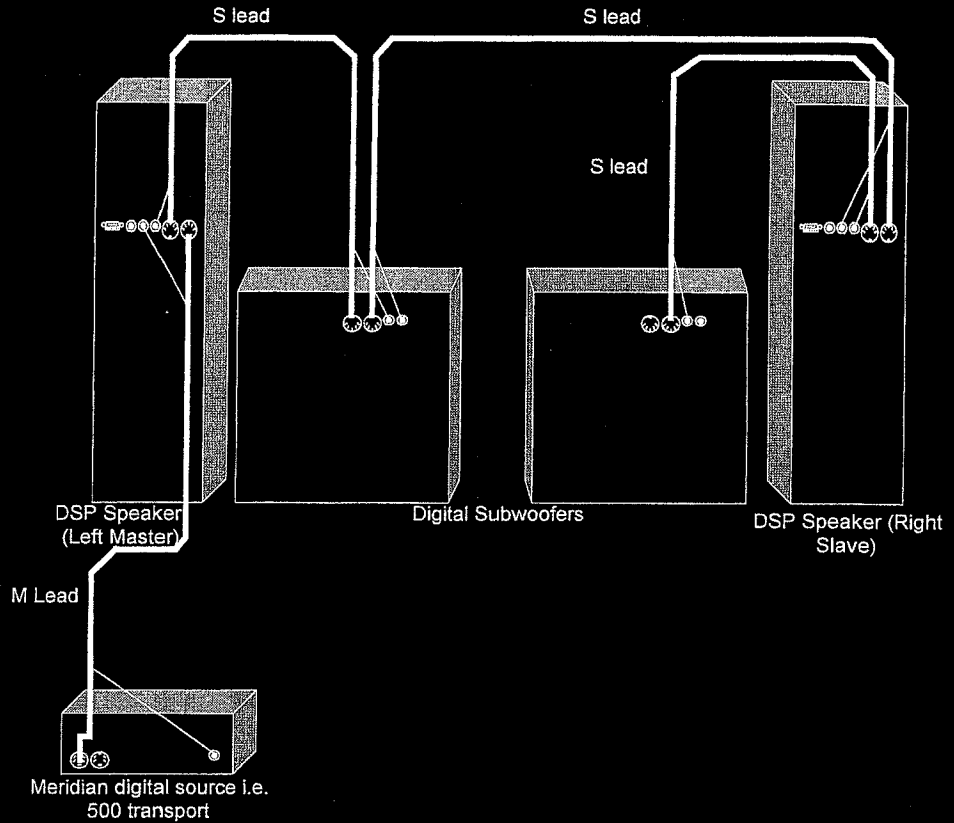


Figure 2: Left and Right subwoofers (daisy chained digital audio)

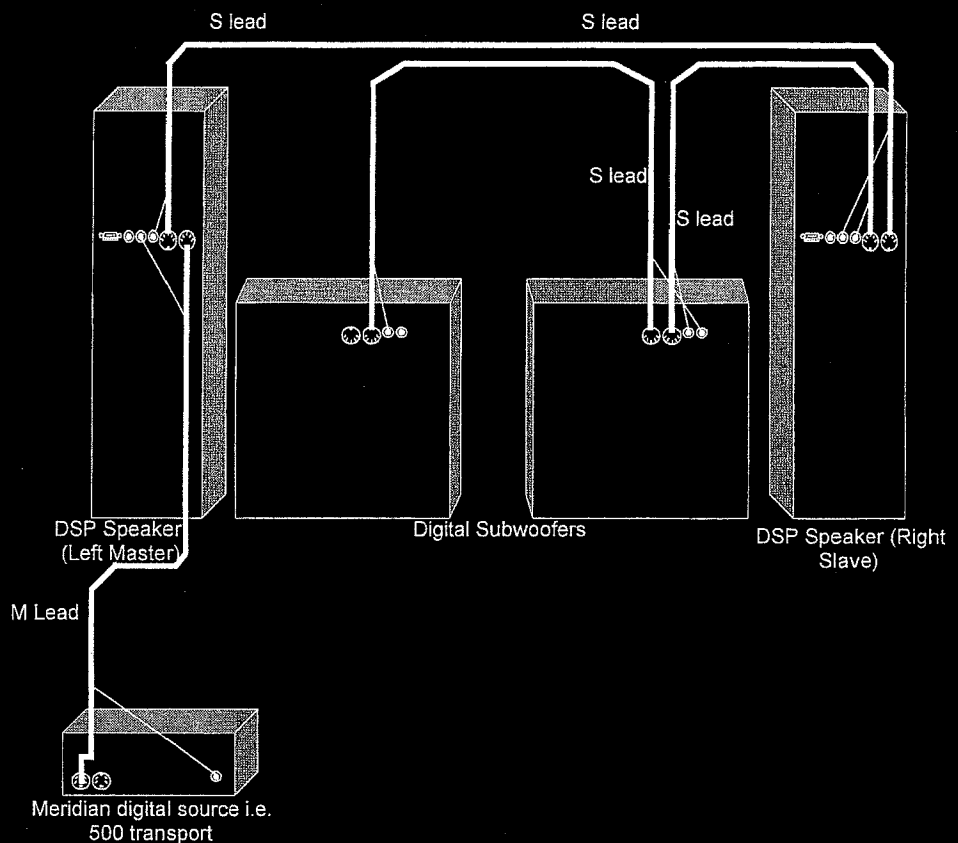


Figure 3 Standard wiring configuration

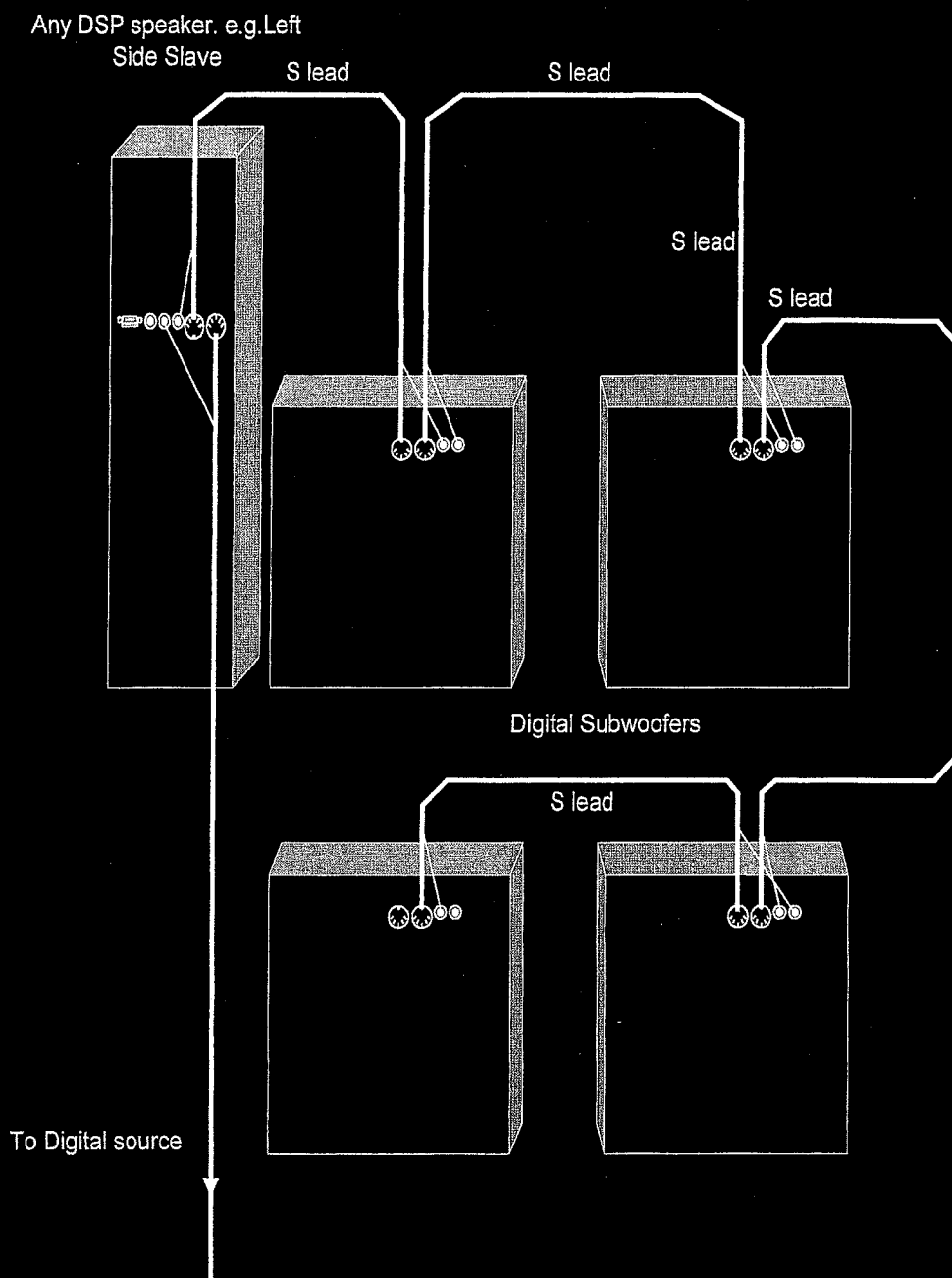


Figure 4 Daisy Chaining Subwoofers

Digital subwoofers can be daisy chained with no loss of quality!
 Digital subwoofers can be added to any digital output feed!

Digital Channel Selection

The D1500 has three digital channel selection settings. This setting can be chosen using the slider switch marked digital channel selector.

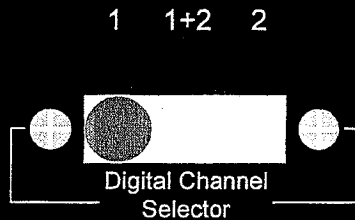


Figure 5 (D1500 Digital Channel Selector)

If the subwoofers are used as bass re-enforcement for DSP speakers then channel selection should be chosen as follows:-

Channel 1	Channel 1+2	Channel 2
Left Main	Mono main left/right sub	Right Main
Left Side	Mono side left/right sub	Right Side
Left Rear	Mono rear left/right sub	Right Rear
Centre		

If the subwoofers are using the Meridian surround sound processors dedicated outputs then channel selection should be as follows:-

Channel 1	Channel 1+2	Channel 2
Left		Centre
Surround		Centre (Cinema presets) Mono (Cinema presets) Mono Right

Crossover Selection

The D1500 has three crossover settings which can be selected with the slider switch on the rear panel. It is vital that this is set correctly.



Figure 6 (D1500 Slider switch)

Sliding the switch to the left most position marked **FLAT**, bypasses the crossover in the D1500. This setting should be used if the D1500 is being used with a Meridian digital surround sound processor.

The centre position marked **FILTER 1** gives a response optimised for use with DSP5000 loudspeakers.

The right most position marked **FILTER 2** gives a response optimised for use with DSP33's.

Note: Filter 2 may sometimes be preferred in DSP5000 systems where the majority of use is for cinema.

Calibration

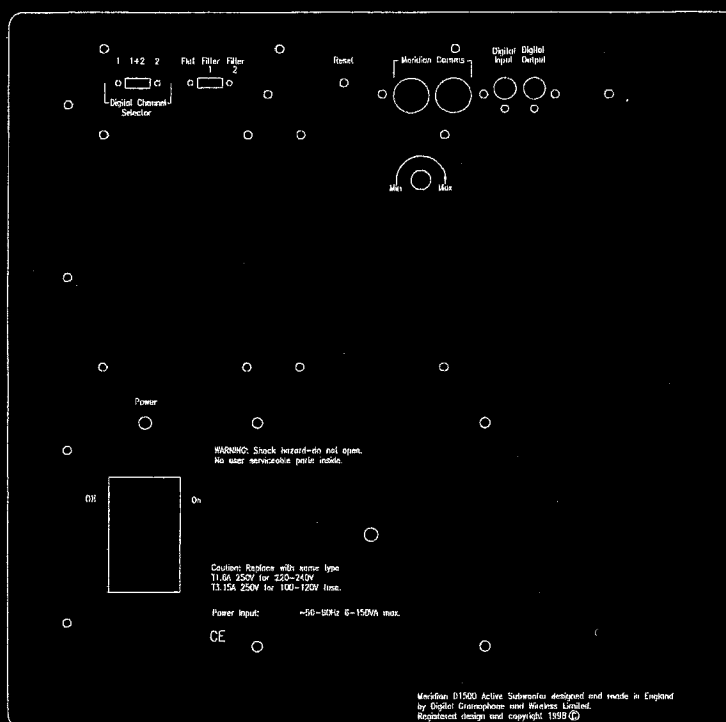


Figure 7 Rear Panel

The sensitivity of the subwoofer needs to be set to give the correct level of bass for the system. If you have a surround sound decoder

such as the Meridian 565 or 561, it will have a procedure which allows you to calibrate this level.

Sensitivity is set with the knob on the back panel. Turning it clockwise increases the sensitivity and turning anti-clockwise makes it less sensitive. To avoid loud surprises, always start with a low sensitivity setting and increase as necessary.

If you do not have a surround decoder, you can calibrate by listening to well known source material and adjusting the sensitivity until the bass sounds solid and deep but not 'boomy' or intrusive. Alternatively, it can be calibrated with the aid of a noise generator and a sound pressure level meter.

If you have a Meridian Surround Sound Decoder, start with the **minimum** sensitivity setting on the D1500. Adjustments should be made using the control on the D1500 rather than on the decoder. This makes full use of the high precision available in a Meridian Digital processor. Follow the *Calibration* procedure in the *User Guide*.

Phase Correction

If, when calibrating the system, the bass sounds hollow or phasey and does not image correctly, you will need to invert the phase of the subwoofer as it is out of phase with the rest of the system, this can be done using *Calibration* on a Meridian surround sound processor.

Fitting the Spikes

When the subwoofer is finally positioned and calibrated, the spikes and optional covers can be fitted if required.

1. Assemble each spike by screwing on a lock nut until it is about 2mm away from the spike end of the thread.
2. Unscrew and remove the castor at one corner of the unit.
3. Screw in a spike, but do not fully tighten it.
4. Place a plastic cover on the spike if required.
5. Repeat instructions 2-4 for all corners.
6. Carefully place the subwoofer in its final position and check that it is level and stable. Adjust the lock-nuts as necessary.
7. Tighten the lock-nuts with the spanner provided.

Operation

Normally the D1500 should be left switched on, even when the unit is not in use.

The electronics in the D1500 use the very latest techniques to ensure that the idle power consumption of the unit is very low. This ensures long periods of cool running and low energy consumption.

All audio equipment should be switched off if you expect to be away from the installation for an extended period.

Maintenance

There are no user serviceable parts inside the D1500.

One or two days after installation check the tightness of the fixing screws securing the loudspeaker driver. These screws may loosen slightly in shipping or with extremes of temperature or humidity. Do not over tighten them.

The electronics do not need routine maintenance.

The audio sockets are gold plated and, where gold plated phono sockets are used, there should be no need to clean the contacts. Otherwise, it is recommended that you unplug and reconnected the plugs once a year. A proprietary contact cleaner may be used to some advantage.

Cleaning

When cleaning the subwoofer bear in mind the sides of the unit are painted wood and the top is glass.

Disconnect the power cord before cleaning the unit.

The cabinet of the D1500 is finished with satin paint and can be wiped clean with a damp cloth.

Ensure that no water is allowed to get inside the cabinet or rear panel. Do not reconnect power until you are certain that the subwoofer is completely dry.

Note: Do not use abrasive cleaners on any part of the D1500.

Help!

No Sound.

- Check the AC power supply to the D1500. The green light on the rear panel should be lit.
- Check the AC supply to the other units in the system.
- Check that the correct source is selected and that the source itself is producing music.
- Check that the interconnections are made to the correct sockets.

Unit goes silent when played hard.

D1500 has a temperature sensing system on board which prevents overheating of the electronics. The sound will continue when the loudspeaker has cooled.

Too little or too much bass when listening.

Have you calibrated the system properly? See the section on *Sensitivity Setting*.

Bass sound phasey or hollow.

Your subwoofer may be out of phase with the main system. See the section on *Phase Correction*.

Bass sounds boomy when certain notes are played.

Systems containing subwoofers can produce very high levels of bass which may cause fixtures in a room to rattle and excite 'boomy' standing wave resonance's due to the shape of the room. Correct speaker positioning can help minimise these problems. Try adjusting the position of the subwoofer. If the subwoofer is close to a corner, move it further out from the corner if possible.

Bass sounds coloured.

You may have selected the wrong crossover frequency for your system. See the section on *Crossover Selection*.

Subwoofer squawks, producing high frequency sounds.

You may have inadvertently selected **bypass**. Are you using the surround sound decoders internal crossover? See the section on *Crossover Selection*.

Service

The Meridian D1500 has been carefully designed to give years of untroubled service. There are no user-serviceable parts inside the case, nor do the units require any form of maintenance.

In the unlikely event that your D1500 fails to function correctly, it should be returned, in its original packing, to your Meridian dealer.

In case of difficulty within the UK or USA please contact the appropriate sales and service address shown on page 1.

Outside the UK, contact the importing agent for the territory. A list of Meridian agents abroad is available from Meridian Audio Ltd.

No responsibility can be accepted for the D1500 while it is in transit to the factory or an agent, and customers are therefore advised to insure the unit.

When seeking service under guarantee, proof of the date of purchase will be required.

Guarantee

The Meridian D1500 is guaranteed against defects in material and workmanship for two years from the date of purchase.

The guarantee is void if the D1500 has been subjected to misuse, accident or negligence, or has been in any way tampered with or modified without the written authorisation of DGW Ltd.

Attempted servicing by unauthorised people may invalidate the guarantee.

Labour and carriage charges are not covered unless by local agreement.

If you request service under guarantee, proof of the date of purchase will be required.

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

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

Specifications

Audio Inputs	
Digital	SPDIF: Gold plated phono 96kHz compatible
Audio Outputs	
Digital	SPDIF: Gold plated phono
Communications	
Meridian	Meridian Comms (Slave Bus)
Power Amplifiers	Complementary high-efficiency bipolar design, with output-stage error correction and twin loop design
Output	100W mean power
Distortion	<0.1%, typically less than 0.02% up to full power at relevant frequencies
Noise and hum	< -72dBm
Acoustic	
Output	Typically > 107dB spl @ 1m
Noise	< 15dB spl @ 1m
Frequency response	In room response within 3dB, 30Hz–400Hz (Bypass)
Crossover	2nd Order Butterworth at 36Hz or 56Hz, switchable.
Drive unit	1 x 10" long throw woofer with 2kg shielded magnet in a magnesium basket.
Cabinet	Constructed from 22mm MDF cross braced and ported. Finished in black satin paint with a 6mm annealed, soda lined plate glass top.
Dimensions	416 x 416 x 416mm ex castors or spikes
Weight	35 kg
Power	100–125; 200-230; 210–250V AC 50–60Hz 6VA idle; 150VA max.