

# USER GUIDE

## Leema Acoustics Antila CD Player

ANTILA





**WARNING:** To reduce the risk of fire or electric shock, do not expose this unit to rain or moisture. Do not use in damp conditions. Do not place objects containing liquids, drinks or vases for example, on the unit. Do not open the cabinet. Refer to qualified service personnel only.



This appliance is classified as a CLASS 1 LASER product. Do not open the cabinet as the laser beam used in this appliance is harmful to eyes.



**Disposal of Electronic Equipment in the European Union and other countries with collection procedures:**

The wheeled bin symbol on this product indicates that it shall not be treated as household waste. It should be disposed of via a collection point for the recycling of electrical and electronic equipment.

**Mains Supply Voltage:** This unit may be set to operate on 220-240 VAC or 110-120 VAC 50/60 Hz by inserting the rear panel fuse holder in the appropriate orientation. This setting should only be changed by an authorised service agent as an inappropriate setting will damage the unit. Before use, check that the unit's voltage setting displayed above the IEC mains inlet matches the mains power supply in your area.

Disconnect the mains supply if the unit will not be used for a long period of time.

**Cleaning:** Disconnect the unit from the mains supply. Clean the cabinet, front panel and lid with a soft cloth slightly moistened with a weak detergent solution or clear fluid glass cleaning product. Ensure the unit is fully dry before re-connecting the mains supply. Do not re-connect the supply with damp hands.

Do not use any abrasive or solvent based cleaning products as these will damage the finish.

**Placement:** Operate the unit on a flat and level hard surface. To prevent the build-up of heat inside the player, place the unit in a location with adequate ventilation and do not cover the unit. Do not locate the unit near heat sources such as radiators or in direct sunlight. Do not move the player with a disc inside. This disc may be damaged or may fall inside the unit.

**Condensation:** If the unit is moved from a cold location to a warm room, condensation may occur on the laser optics causing a temporary malfunction. The unit will return to normal operation after a short period of time.

## About Discs

Only handle discs by the edge. Do not touch the silver disc surface. If a disc requires cleaning, wipe it with a soft cleaning cloth moving from the centre outwards. Do not wipe the disc in a circular motion. When not using discs, store them in a case. Never place the disc on a surface out of it's case as the disc will be permanently damaged. A disc damaged by marks and scratches may no longer play. Even if it does play, the audio quality may be degraded.

## Red Book Standard

Antila is a 'Red Book' standard CD player and as such will play any genuine red-book disc. These discs will normally carry the Compact Disc logo. Some discs have been manufactured using various forms of copy protection such as Cactus and the Sony BMG system. These discs, which do not normally carry the registered logo, may produce erratic behaviour when played in an Antila and have been the subject of disagreement between Philips and Sony. More information on this subject is available on various websites.



Even if a copy protected disc does play, the audio quality may be compromised. Try to avoid purchasing this type of disc wherever possible.

**Discs That Cannot Be Played:** Antila is designed to play audio CDs only. CD-R discs optimised for audio use and some 'silver' CD-R discs may also play correctly. Non-silver CD-R discs will not play. The player will play all discs fully conforming to the Philips red book standard but may not play discs with some types of copy protection.

## Table of Contents

<b>WARNING - Safety Advice</b> .....	3
<b>Mains Supply Voltage</b> .....	3
<b>Cleaning</b> .....	3
<b>Placement</b> .....	3
<b>Condensation</b> .....	3
<b>About Discs</b> .....	4
<b>Red Book Standard</b> .....	4
<b>Discs That Cannot Be Played</b> .....	4
<b>Conformity Statement</b> .....	6
<b>General Information - Environmental, Made in the UK</b> .....	7
<b>Contact Us</b> .....	7
<b>Introduction</b> .....	8
<b>Overview - Connections</b> .....	9
<b>Front &amp; Rear Panels</b> .....	10
<b>Front Panel Operation</b> .....	11
<b>Option Menus</b> .....	12
<b>Remote Control</b> .....	13-14
<b>LIPS</b> .....	15
<b>Making a LIPS connection</b> .....	15
<b>LIPS Specifics</b> .....	16
<b>LIPS Packets</b> .....	16
<b>LIPS Protocol Headers</b> .....	16
<b>Antila Specific LIPS Commands</b> .....	17
<b>Infra-red Codes</b> .....	18
<b>Audio Specifications</b> .....	19

# EC Declaration of Conformity

In accordance with EN ISO 17070-1:2004

*We* **Leema Electro Acoustics Limited**

*of* **Llanfair Caereinion  
Welshpool  
Powys  
UK**

*in accordance with the following Directive(s):* **2006/95/EC The Low Voltage Directive**                      **2004/108/EC The Electromagnetic Compatibility Directive**

*hereby declare that:*                      **Equipment HI-FI CD Player Model Name Antila**

*is in conformity with the applicable requirements of the following documents:*

Ref. No.	Title	Date
EN60065	Low Voltage Directive	14/6/2002
EN55020	EMC Directive	21/5/2002
EN55013	EMC Directive	2/12/2001
EN61000-3-2	Limits for Harmonic Current Emissions	15/3/2001
EN61000-3-3	Limitations of Voltage Fluctuations and Flicker in Low Voltage Supply Systems	15/8/1995
73/23/EEC	Low Voltage Directive	
89/336/EEC	EMC Directive	
93/68/EEC	CE Marking	

I hereby declare that the equipment named above has been designed to comply with the relevant sections of the above referenced specifications. The unit complies with all applicable Essential Requirements of the Directives.



Signed by: .....

Name: **Mallory Nicholls**  
Position: **Technical Director**  
Done at: **Leema Electro Acoustics Ltd.**  
On: **6/11/2008**



## **Environmental Issues**

Leema operates a 100% recycling program. All waste materials generated as part of the manufacturing process at Leema's headquarters are recycled via a licensed specialist company.

Although Leema electronics operate in standby mode as opposed to being fully switched off, the power drain has been optimised to a negligible level. Contrary to popular audiophile practice, we do not recommend leaving our power amplifiers permanently powered. All Leema amplifiers have been designed to attain full operational specifications and sound quality within a few minutes of switch-on.

## **Made in the UK**

Leema electronics are designed and manufactured in the UK. This includes all metalwork and packaging.

## **Contact Us**

Leema may be contacted via our website: [www.leema-acoustics.com](http://www.leema-acoustics.com) or by telephone: +44 (0)1938-811900

## **Introduction**

Congratulations on your purchase of a Leema Antila CD player.

The Leema range of products has been painstakingly engineered in the United Kingdom to offer genuine state-of-the-art performance.

Partnered with suitable equipment, Leema products will provide audio performance far beyond that of their competitors and will equal or better the performance of products costing many times their purchase price.

A notable feature of this product is the MD<sup>2</sup> multi-DAC converter topology. In the Leema Antila, this topology uses twenty (ten stereo) 24bit/192KHz digital-to-analogue converters in a parallel-multiple balanced configuration. The net result is a CD player with analogue-like midband and high frequencies having great space and depth without the usual harshness associated with digital recording formats.

Purchasers should read and follow this instruction manual, paying particular attention to the user installation and safety advice section.

This manual has been written to enable you to achieve the very best performance and maximum listening pleasure from your investment.

We wish you many years of pleasurable listening... Move Your World!

With best regards

The Leema Team.

## Overview

Antila is much more than a CD player. In a fully Leema system, it may be used as a system controller allowing the rest of the equipment to be sited out of infra-red control range. Antila may also be fully controlled by LIPS enabling wired integration with control systems such as Procontrol or Crestron.

## Connections

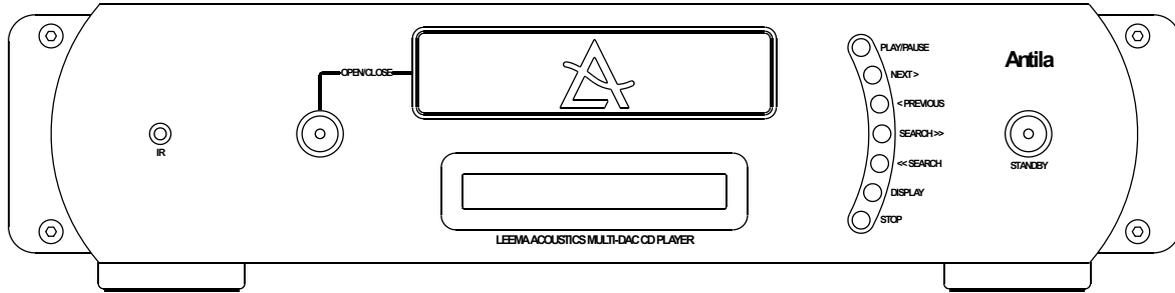
**Unbalanced outputs:** The majority of users will use the unbalanced phono outputs. Use good quality phono to phono interconnects to provide maximum audio performance.

**Balanced outputs:** If your partnering equipment has balanced inputs, use XLR to XLR interconnects to connect Antila. The pin connections follow the European balanced convention: Pin 2 = Hot, Pin 3 = Cold, Pin 1 = Ground. The balanced output voltage is the same as the unbalanced outputs at 2.3VRMS for 0dBFS. This level provides a useful interface in professional audio environments as well as high-end Hi-Fi applications.

**SPDIF coaxial digital output:** This output provides a transformer isolated standard Sony/Philips digital interface. Use a good quality cable designed for SPDIF applications. Audio cables must not be used as they will seriously degrade the data stream. The coaxial output is preferred over the optical option due to better jitter performance.

**Optical digital output:** This output provides a digital link using TOSLINK optical cables. If possible the coaxial connection option should be used in preference to the optical output due to the improved jitter performance.

**Front Panel**



**Rear Panel**

**DIGITAL Outputs**

Use a dedicated digital phono lead or TOSLINK optical cable to connect these outputs to a digital input.

**'LIPS' bus connectors**

These allow communication between various Leema system components.

**Balanced Audio Outputs**

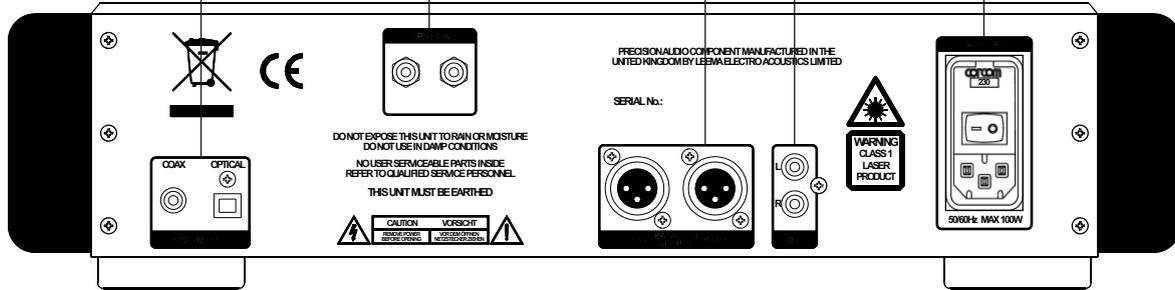
XLR type connectors are used to connect these outputs to the amplifier or pre-amplifier.

**Unbalanced Audio Outputs**

Use phono leads to connect these outputs to conventional unbalanced amplifier inputs.

**Power Inlet & Switch**

Ensure that the voltage indicated above the switch is correct for your area. This will either be 230VAC or 115VAC.



## Front Panel Operation

1. **Standby** - The Standby button toggles Antila between On and Standby. If a LIPS connection is used, the power status of any other Leema components connected via LIPS will also be controlled.
2. **OPEN/CLOSE** - Opens and closes the drawer. If the unit is in standby, it will power up and open the drawer.
3. **PLAY/PAUSE** - Pressing this button once will start playback. Pressing a second time places the unit in PAUSE. Tracks may be queued whilst in pause by pressing NEXT or PREV.
- 4 & 5. **NEXT & PREV** - These buttons increment or decrement the track selection. If the required track is some way from the current point, these buttons may be held down in order to scroll to the required track number.
6. **SEARCH >>** - This causes the playback to jump forward in units of thirty seconds. This button is also used to select the LIPS mode. To select a LIPS mode, first ensure playback is fully stopped. Press and hold the SEARCH >> button until the LIPS menu appears. Press the button until the required LIPS mode is reached. Finally, wait a few seconds for the normal operation display to return.
7. **SEARCH <<** - This causes the playback to jump back in units of thirty seconds. This button is also used to select the AUTOPLAY mode. If autoplay is on, playback will start as soon as the drawer is closed. To change autoplay mode, ensure that playback is fully stopped, then press and hold the SEARCH << button until the AUTOPLAY menu appears. Press the button again until the required mode is reached. Finally, wait a few seconds for the normal operation display to return.
8. **DISPLAY** - The LCD display and its backlight may be turned off. This enables maximum sound quality to be achieved by removing a potential source of noise.
9. **STOP** - Stops playback. The button is also used to select repeat modes. To select Track or Disc repeat, ensure that playback is fully stopped, then press and hold the button until the menu appears.

## **Option Menus**

### **LIPS MODE**

Antila can be used as the master system controller in a fully Leema system. The player can control power up and down, input selection and volume level of various units connected via LIPS. When used in this way, the player's display shows the various settings. Antila can even fully control Leema slave amplifiers such as Hydra without the need for an integrated amplifier e.g. Tucana in the system. At the time of writing, Antila is able to control Tucana and Hydra. To control Pyxis or Pulse, please ensure that Antila has the latest software version loaded. A Leema Acoustics dealer can arrange for software updates as required.

To select a LIPS mode, press and hold the SEARCH >> button until the LIPS menu appears. Press the button repeatedly until the required LIPS mode is indicated. Finally, wait a few seconds for the normal operational display to return. If LIPS is not required, set the menu to LIPS: Slave.

### **AUTOPLAY MODE**

Autoplay enables Antila to behave like a DVD player when a disc is inserted. With Autoplay ON, the disc will begin playing as soon as the tray closes. With Autoplay OFF, the user must press PLAY after the disc is loaded. To change Autoplay mode, ensure that playback is fully stopped, then press and hold the SEARCH << button until the AUTOPLAY menu appears. Press the button repeatedly until the required mode is indicated. Finally, wait a few seconds for the normal operation display to return.

### **REPEAT MODE**

The repeat menu offers the following modes: Repeat Off, Repeat Track and Repeat Disc. To access the menu, ensure that playback is fully stopped, then press and hold the STOP button until the REPEAT menu appears. Press the button repeatedly until the required mode is indicated. Finally, wait a few seconds for the normal operation display to return.

## Remote



**1. INPUT** - When Antila is connected to a Leema amplifier product via a LIPS cable, this button is used to cycle through the available amplifier inputs. If LIPS is not used, this button has no function.

**2. VOLUME +/-** - The volume level of a Leema amplifier product may be controlled from the Antila remote. If a LIPS connection is used, the amplifier may be out of sight of the remote, in an air conditioned cupboard for example. If LIPS is not used, the remote will command the amplifier using infra-red.

**3. LCD** - The LCD display and it's backlight may be turned off remotely. This enables maximum sound quality to be achieved by removing a potential source of noise.

**4. MUTE** - Leema amplifiers may be muted with this button. Again, it is available in LIPS or infra-red modes.

**5. PLAY** - The play button also provides a pause function if the disc is already running. Tracks may be 'queued' by selecting pause and then NEXT/PREV to queue the required track. Pressing PLAY with the drawer open will close the draw and initiate PLAY.

**6. STOP** - Stops playback

**7. SCAN** - This button toggles between normal play and scan mode. In scan mode, the NEXT and PREV buttons function as SCAN FORWARD (>>) and SCAN BACKWARDS (<<). During scan operations, playback jumps forward or backward in units of thirty seconds.

**8. NEXT** - If SCAN is not selected, the NEXT button increments the track selection. If SCAN is selected, NEXT becomes SCAN FORWARD (>>) and forces the playback to jump forwards in units of thirty seconds.

**9. PREV** - If SCAN is not selected, the PREV button decrements the track selection. If SCAN is selected, PREV becomes SCAN BACKWARDS (<<) and forces the playback to jump back in units of thirty seconds.

**10. POWER** - The power button toggles Antila between On and Standby. If a LIPS connection is used, the power status of any other Leema components connected via LIPS will also be controlled.

## **LIPS™ - Leema Intelligent Protocol System**

LIPS is a proprietary communication system which enables Leema audio components to talk to each other. A degree of intelligence is instilled in each unit allowing the units to make decisions based on user requirements and system configuration. Leema's 5.2 surround system is a good example where a Tucana controls a Hydra and Corvus. Key information including volume level, input selection and power control is passed through the bus enabling other units to operate in synchronisation. Intelligence is added within each receiving unit, for example, a Hydra installed as part of a surround system 'knows' that it won't be required when listening to a stereo source such as CD. Therefore, when the Hydra 'sees' the CD input, it powers itself down. When the user switches between input formats, the units respond by powering up or down as required. In this way, the system is made much easier to use and energy is not wasted powering units that are not required. Antila continues this theme and is able to control other units in the family, allowing the majority of the system to be hidden away if required.

Each Leema unit can be controlled via the LIPS bus. Controlling units externally enables them to be used within a home automation system.

A LIPS lead is not supplied as standard with Antila, as not all users will require it. However, if you intend to use LIPS in your installation, please contact Leema and a 1 metre LIPS lead will be supplied free of charge.

### **Making a LIPS connection**

LIPS cables are directional and have one black end and one red. If Antila is controlling other units, the black connector should be plugged in to either LIPS socket on Antila and the red connector plugged in to the first amplifier component, e.g. Tucana. If the Antila is to be controlled, the black connector is connected to the master device and the red connector is plugged in to either LIPS socket on Antila.

The following section is intended for installers, system integrators and third party manufacturers.

## **LIPS Specifics**

The LIPS bus is driven by an open-drain output. Leema can supply interface modules as required. The communication standard follows the common RS232 format of No Parity, 8 data bits and 1 stop bit. The baud rate is 38400.

## **LIPS Packets**

Each communication on the LIPS bus contains a packet of four data bytes as follows:

First a header is sent with a value of 255. This alerts the receivers to incoming data.

Next, a command header is sent. For a volume command, this would be 40. (see later for details).

Next, a value relating to the command is sent. For volume this would be 0 to 248.

Finally a tail byte is sent with a value of 0.

**LIPS Protocol Headers** For further information, please contact Leema Technical Support.

Value = 20 ID header. This header is private and must not be issued by any controlling software.

Value = 30 This is a general command header. The command values are as follows:

10 = Infra Red control OFF. These commands control the local IR receiver

20 = Infra Red control ON

100 = Power ON

101 = Power OFF

103 = Select Input CD

104 = Select Input TUNER

105 = Select Input AUX

106 = Select Input MULTI 1  
107 = Select Input MULTI 2  
108 = Select Input AV DIRECT  
109 = Select Input TAPE  
110 = LED ring ON  
111 = LED ring OFF

Value = 37 Input Gain header. Valid command values are 0(-10dB) to 40(+10dB)

Value = 38 Balance header. Valid command values are 0(-6dB) to 24(+6dB)

Value = 40 Volume header. Valid command values are 0(mute) to 248(maximum volume)

Value = 50 Serial Pass Through. When a Tucana, Hydra or Corvus receives this header, the header and value are passed on up the bus. This enables future expansion options.

Value = 60 This is issued by Corvus. The command value contains the sub filter frequency.

Value = 70 This is issued by Corvus. The command value contains the sub filter slope.

Value = 80 This is issued by Corvus. The command value contains the extract status.

Value = 90 Antila direct track access. Valid command values are 1 - 99 for tracks 1 - 99.

Value = 100 Spare header for future use.

## ANTILA specific LIPS commands

Header = 30 (General command)

Command values: 31 = STOP, 32 = PLAY, 33 = PAUSE, 34 = NEXT, 35 = PREV, 36 = Display ON, 37 = Display OFF

Header = 90 (Antila direct track access)

Command value: 1 - 99 representing track numbers 1 - 99. If the track value sent is not available on the current disc, Antila will report an error on it's LCD and go in to STOP mode.

## Infra-red codes

The following codes may be used to program universal remotes:

IR DEVICE = 17 (Antila specific)

16 = LIPS INPUT INCREMENT, 21 = POWER TOGGLE, 22 = TRAY, 48 = PREV, 49 = NEXT, 50 = PLAY, 56 = STOP, 57 = PAUSE  
59 = SCAN TOGGLE, 84 = DISPLAY TOGGLE

For direct track access (as per Sony CD1 format)

32 = num 0, 0 = num 1 ..... 8 = num 9, 39 = +10

The above are used as follows: num, +10, num. e.g. 1,+10,2 = track 12 etc.

In addition to Antila specific codes, the player is able to process amplifier codes for communication via LIPS:

IR DEVICE = 16 (Amplifier, e.g. Tucana etc.)

0 - 6 = INPUTS 1 - 7, 16 = INPUT UP, 17 = INPUT DOWN, 18 = VOLUME UP, 19 = VOLUME DOWN, 20 = MUTE TOGGLE  
21 = POWER TOGGLE

## Audio Specifications

Typical figures:

Frequency response 20Hz-20KHz: +/-0.3dB

Distortion - 20Hz: 0.005% 1KHz: 0.0008% 20KHz: 0.0008%

IM distortion 19+20KHz: 0.0005%

Linearity @ -100dB: +/-0.5dB

Crosstalk @ 10KHz: -100dB

Crosstalk @ 1KHz: -118dB

Signal to Noise ratio (A weighted): 107dB

Output Level: 2.3VRMS for 0dBFS

Jitter 1KHz: 40pS

Jitter total correlated: 350pS

Specifications subject to change without notice.



**Leema Electro Acoustics Limited**

Maes-Y-Glydfa, Llanfair Caereinion, Welshpool, Powys, SY21 0HD, UK  
Tel/Fax: +44-(0)1938-811900 email: [info@leema-acoustics.com](mailto:info@leema-acoustics.com) Web: [www.leema-acoustics.com](http://www.leema-acoustics.com)