



Abbingdon Music Research

CD-777

Compact Disk Processor

Owner's Manual

FCC Declaration of Conformity - United States only

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference; and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC WARNING:

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Canadian Notice (Avis Canadien)

Class B Equipment

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.
Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.



This product complies with the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms (in parentheses are the equivalent international standards and regulations):

- o EN55022 (CISPR 22) - Electromagnetic Interference
- o EN55024 (IEC61000-4-2, 3, 4, 5, 6, 8, 11) - Electromagnetic Immunity
- o EN61000-3-2 (IEC61000-3-2) - Power Line Harmonics
- o EN61000-3-3 (IEC61000-3-3) - Power Line Flicker
- o EN60950 (IEC60950) - Product Safety

Laser Safety

This CD player has been designed and manufactured according to FDA regulations "title 21, CFR, chapter 1, subchapter J, based on the Radiation Control for Health and Safety Act of 1968", and is classified as a Class 1 laser product.

No User Serviceable Components Inside.
Unauthorized attempts at repair or modification to this equipment will void all warranties.

DANGER - invisible laser radiation when opened and interlock failed or defeated. Avoid direct exposure to beam.

CAUTION - use of all controls, adjustment or performance of procedures other than specified herein may result in hazardous radiation exposure.

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 this component.



This component weighs over 10 kilograms. Do not place this component on an unstable cart, stand, tripod, bracket or table as the component may fall causing serious injury to a child or adult and serious damage to the unit. An appliance and cart combination should be moved with care. Quick stops, excessive force and uneven surfaces may cause the component and cart combination to overturn.



Any mounting of the device on a wall or ceiling should follow the manufacturer's instructions and should use a mounting accessory recommended by the manufacturer.

Read and follow all the safety and operating instructions before connecting or using this component.

All warnings on the component and in its operating instructions should be adhered to.

Retain this Owner's Manual for future reference.

Do not use this unit near water; for example, near a bath tub, washbowl, kitchen sink, laundry tub, in a wet basement or near a swimming pool.

Unplug the component from the wall outlet before cleaning. Never use benzine, thinner or other solvents for cleaning; use only a soft dampcloth. Care should be taken so that objects do not fall, and liquids are not spilled into the enclosure through any openings.

This component should be serviced only by qualified AMR service personnel when:

- A. The power cable or the power input socket has been damaged;
- B. Objects have fallen, or liquid has been spilled into the component;
- C. The component has been exposed to rain or liquids of any kind;
- D. The component does not appear to operate normally or exhibits a marked change in performance;
- E. The component has been dropped or the enclosure has been damaged.

**DO NOT ATTEMPT SERVICING OF THIS UNIT YOURSELF.
REFER SERVICING TO QUALIFIED AMR SERVICE
PERSONNEL**

Upon completion of any servicing or repairs, request the service point's assurance that only AMR Authorised Replacement Parts with the same characteristics as the original parts have been used, and that the routine safety checks have been performed to guarantee that the component is in a safe operating condition.

**REPLACEMENT WITH UNAUTHORIZED PARTS MAY
RESULT IN FIRE, ELECTRIC SHOCK OR OTHER
HAZARDS**

Precautions

This equipment has been tested and found to comply with the limits set out in the EMC Directive using a connection cable shorter than 3 metres.

On power sources

The mains power cable should be routed so that it is not likely to be walked on or pinched, especially near the plug or back panel receptacle. The component should not be disconnected from the AC power source as long as it is connected to the wall outlet, even if the component itself has been turned off.

If this component is not going to be used for a long time, be sure to disconnect the component from the wall outlet. To disconnect the AC power cable, grasp the plug itself, never pull the cable.

CAUTION ATTENTION
RISK OF ELECTRIC SHOCK RISQUE DE CHOC ELECTRIQUE
DO NOT OPEN NE PAS OUVRIR

On placement

The CD-777 will become warm during normal operation. Given this, it is imperative that the installation of the CD-777 DOES NOT interfere with its proper ventilation.

For example, it should not be situated on a bed, sofa, rug or similar surface that may block the top or bottom ventilation openings; or placed in a built-in installation, such as a bookcase or cabinet, that may impede the flow of air through its top and bottom ventilation openings.

Do not place the component in a location near heat sources, or in a place subject to direct sunlight, excessive dust, or mechanical shock. Do not place the component in an inclined position. It is designed to be operated in a horizontal position only. Do not place heavy objects on the component.

Keep the component and compact discs away from equipment with strong magnets, such as microwave ovens or large loudspeakers. To prevent fire or shock hazard, do not place vessels filled with liquids, such as vases, on the component.

Running-In

AMR estimates that the CD-777 may take between 300-500 operating hours for all of the internal components to be fully-broken in. Please anticipate the sonic performance of the CD-777 to settle only after it has been used for this approximate length of time.

Transporting/Moving the CD-777

Prior to any transportation/movement, ALWAYS remove the CD Clamp and transport it seperately.

Thank you for purchasing this AMR component.

We hope you derive as much pleasure from using this component as we have enjoyed making it for you.

1.1 Unpacking

This section refers to the unpacking of the CD-777 and its subsequent setup.

Upon unpacking, please find:

- i. CD-777 Reference Class Compact Disk Processor.
- ii. Aluminium CD puck.
- iii. RCD-777 Remote Commander.
- iv. AMR mains power cable.
- v. AMR USB cable.
- vi. CD-777 Owner's Manual.
- vii. AMR Test Disk.

Please check that
all contents are
present

Please ensure that all items are present. Should an item be missing, please contact your AMR distributor/dealer.

1.2 Setup CD-777 System Setup (CD-777 + AM-777 + Speaker)

System connection using RCA connectors

- i. Unpack the CD-777.
- ii. Remove the protective sheet from the acrylic front panel.
- iii. Ensure the CD-777 is located on a level and solid surface capable of supporting at least 15 kgs.
- iv. Connect the interconnects via the left (black) and right (red) leads to the respective channels at the rear of the CD-777.
- v. Connect the other end of the interconnect's left and right channels to the respective inputs of the amplifier. Ensure that the correct colour-coding is adhered to.
- vi. Connect the IEC end of the mains power cable to the mains receptacle of the CD-777 and connect the mains plug into a mains socket power source.

Optional IEC-777 (RCA or XLR-type) interconnect may be purchased separately

Section 2 - Component Overview

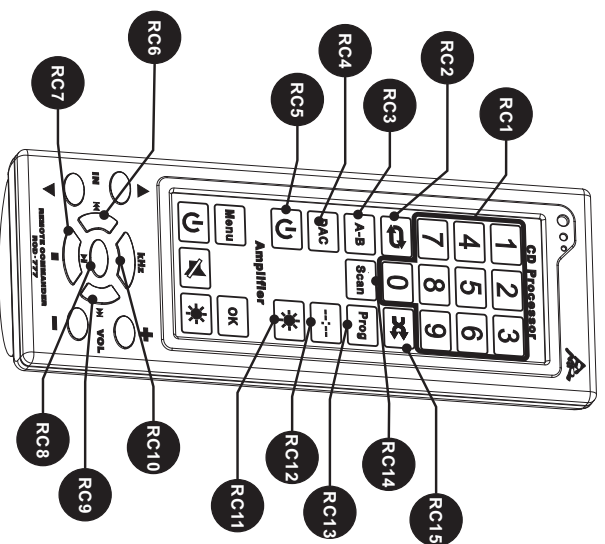
2.1 CD-777 Front Fascia

- F1. STANDBY** : to place the CD-777 in active or standby mode.
- F2. REV/REVERSE** : to select the previous track/fast reverse.
- F3. PLAY/PAUSE** : to initiate playback/pause once a compact disk has been correctly loaded.
- F4. FWD/NEXT** : to select the following track/fast forward.
- F5. STOP** : to halt/stop play.

2.2 CD-777 Rear Panel

- R1. XLR outputs:** for the connection of XLR interconnects.
 - R2. RCA outputs:** for the connection RCA interconnects.
 - R3. USB input:** for the connection of a USB input signal.
 - R4/5. S/P-DIF input & output:** for the connection of an S/P-DIF source & of an external DAC.
 - R6. INFRA-RED link:** for the connection of a wireline remote control.
 - R7. 115V/230V:** to switch to the correct local mains voltage.
 - R8. IEC power connector:** for the connection of mains power cable to the CD-777.
 - R9. POWER:** to switch on mains electricity to the CD-777.
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2.3 RCD-777 Remote Control



- RC1. Numeric Pad:** to enter track selections.
- RC2. REPEAT:** to select a repeat mode.
- RC3. A-B:** to select an excerpt from a track for repeat.
- RC4. DAC:** with a USB or S/P-DIF input connection made, to bypass the transport and enter DAC mode.
- RC5. STANDBY:** to place the CD-777 in active or standby mode.
- RC6. REV/REVERSE:** to fast reverse or select the previous track.
- RC7. STOP:** to halt/stop play.
- RC8. PLAY/Pause:** to commence playback or to pause playback.
- RC9. FWD/NEXT:** to fast forward or select the following track.
- RC10. SAMPLING:** to cycle through the 6 different *Optisample*® modes.
- RC11. BRIGHTNESS :** to switch between 4 different brightness levels including display off.
- RC12. TIME:** to alternate between the display of current track or time remaining.
- RC13. PROGRAM:** to program an order of playback.
- RC14. SCAN:** to commence a 10 second or 30 second scan of each track.
- RC15. SHUFFLE:** to select random shuffle of music tracks.

3.1 Operation

3.1.1 Power On/Off

Press the 'POWER' (R9) at the rear of the CD-777 to switch mains power ON to the CD-777.

To switch the mains power OFF, press again and release. **Always wait at least 20 seconds** before switching on again. This is to enable the circuits in the CD-777 to shutdown properly.

The display will light up to indicate the unit is switched on and ready for use. This should take just under 1 minute as the CD processor is warming up.

3.1.2 Standby

Put the CD-777 into STANDBY mode.

3.1.3 Play/Pause

During playback, at anytime, pressing PLAY/PAUSE again, on either the front fascia or the RC-777, playback will be paused. To resume playback, press PLAY/PAUSE once more.

3.1.4 FWD/Next

At any time, pressing FWD (F4) once on either the front fascia or the RC-77, the next track will be selected. By holding down FWD (F4) or (RC9), playback will fast forward until the button is released.

3.1.5 REV/Reverse

At any time, pressing REV (F2) once on either the front fascia or the RC-77 (RC6), the previous track will be selected. By holding down REV (F2) or (RC6), playback will reverse until the button is released.

3.1.6 Numeric Pad (RCD-777 only)

This encapsulates the numbers 0-9 on the numeric pad. By pressing any combination of the numeric keys, a desired track may be selected directly.

For example, to select Track 2, press **2**; to select Track 21, press **2** and then **1**.

3.1.7 DAC Input (RCD-777 only)

The DAC button (RC4) is for the replay of music on the CD-777 from music stored on a computer hard-drive via a USB-to-USB cable connection or any external digital source equipped with an electrical S/P-DIF output.

To establish the connection between the CD-777 and an S/P-DIF source:

To use the S/P-DIF connection the USB connection must be disconnected

- i. Power ON the CD-777.
- ii. On the RCD-777 press the DAC button (RC4) to place the CD-777 in DAC mode.
- iii. Power ON the S/P-DIF source.
- iv. Connect the S/P-DIF cable between the CD-777 and the source.

To establish the connection between the CD-777 and a computer USB source:

- i. Power on the CD-77.
- ii. On the RCD-777, press the DAC button (RC4) to place the CD-777 in DAC mode.
- iii. Power ON the personal computer.
- iv. Connect the USB cable between the CD-777 and the personal computer.
- v. Go to **Control Panel > System > Hardware > Device Manager**. In **Device Manager** wait until the personal computer has recognised the CD-777 as a **USB Audio Device**.

This is found under the **Sound, video and game controllers** category.

- vi. Go to **Control Panel > Sounds and Audio Devices > Audio**. Make sure **USB Audio Device** is selected as the default device under the **Sound playback** box.
- vii. Select and playback music on the personal computer using suitable software (*Apple iTunes*®, *foobar*®, *Winamp*®, *Windows Media Player*®, *Windows Media Center*® et al).

3.1.8 *OptiSample*® (RCD-777 only)

The CD-77 Compact Disk Processor offers 6 user-selectable methods of Sampling that can be **cycled through** during playback by pressing the *OptiSample*® button (RC10) on the RCD-777. The sampling options are:

- a. **Digital Master I** – this mode directly takes the data extracted from the CD and re-clocked to generate the music signal. Due to the complete lack of digital or analogue filtering, the treble frequencies are slightly rolled off, making the sound somewhat soft and laid-back. For the same reason, the mid-range and below is very natural and realistic. The reproduction of impulses is undistorted. This mode often helps to **tame** overly-bright recordings.
- b. **Digital Master II** (default) – this mode is identical to Digital Master I but complements this with a special analogue filter which corrects the roll-off in the treble frequencies. As a result, the tonality is more accurate in the treble. We therefore recommend this mode as the benchmark with which to enjoy music.
- c. **Oversampling 2x** – this mode engages the Digital Filter with an oversampling factor of 2, thus performing the least digital processing possible (except for no digital processing). The original data from the CD is in effect discarded and re-placed with a re-computed version. This new version of the music is mainly linearly scaled up using a whole number as scaling factor and resolution/edge enhanced.

Digital Master II is the benchmark for playback

OptiSample modes c to f offer more typical versions of digital playback

The sonic result of oversampling mirrors those of resolution enhancement in digital photographs: more apparent detail is noticeable. However, impulse reproduction is slightly distorted, leading often to a slight perception of an edginess or graininess.

d. Oversampling 4x – this mode engages the Digital Filter with an oversampling factor of 4, performing quite a large degree of digital manipulation. The original data from the CD is in effect discarded and re-placed with a re-calculated version. This new version of the music is mainly linearly scaled up using a whole number as scaling factor and resolution/edge enhanced. The sonic result of Oversampling 4x is similar to that of Oversampling 2x; except more accentuated.

e. Upsampling at 96KHz – this mode engages the Upsampler with a sampling frequency of 96KHz, performing quite a large degree of digital manipulation. The original data from the CD is in effect discarded and re-placed with a re-calculated version. This new version of the music is non-linearly scaled up using a complex number as scaling factor and resolution/edge enhanced. The sonic result of upsampling is similar to oversampling; however there are subtle degrees of change in the tonality due to a shift in the harmonic spectrum as a result of the complex number which underlies the scaling.

f. Upsampling at 192KHz – this mode engages the Upsampler with a sampling frequency of 192KHz, performing a very large degree of digital manipulation. The original data from the CD is in effect discarded and re-placed with a re-calculated version. This new version of the music is non-linearly scaled-up using a complex number as scaling factor and resolution/edge enhanced. The sonic result of 192KHz upsampling is similar to 96KHz upsampling. However, as the complex numbers that underlie the upsamplings are different to oversampling, the shift in the harmonic spectrum is not the same: hence tonality is somewhat different.

3.1.9 Program (RCD-777 only)

Press the PROGRAM button (RC13) and:

Program No : 01

will be displayed.

Thereafter select the track via the numeric keypad (RC1).

Program No : 02

will then be displayed and the same routine is repeated. To commence playback, press PLAY/PAUSE (RC8).

Appendix A - Troubleshooting



Symptom	Possible cause	Solution
"Disc Error" or "No Disc" is shown	<ul style="list-style-type: none">• dirty or heavily scratched CD disc• wrong disc type	<ul style="list-style-type: none">• clean the CD disc• replace with a proper CD disc
Disc spinning erratically	<ul style="list-style-type: none">• dirty or heavily scratched CD disc• CD puck improperly attached	<ul style="list-style-type: none">• clean the CD disc• replace CD puck properly
No power when the power button is set to ON	<ul style="list-style-type: none">• poor or no power plug connection at power point• blown fuse at mains plug	<ul style="list-style-type: none">• Insert the power plug firmly into the AC• change mains plug fuse
No sound	<ul style="list-style-type: none">• incorrect audio cable connections• incorrect operation of Amplifier	<ul style="list-style-type: none">• ensure the CD-777 is correctly connected• ensure input selector on the amplifier is set to CD-777
Remote control does not work	<ul style="list-style-type: none">• batteries in remote control handset have expired• object obscuring remote sensor on the CD-777, no "line of sight"• Interference from fluorescent lights	<ul style="list-style-type: none">• replace batteries• remove any objects directly in front of the CD-777• turn off fluorescent lights or redirect the light away from the CD-777
A "humming" sound can be heard	<ul style="list-style-type: none">• loose cable connections	<ul style="list-style-type: none">• re-attach the loose cables correctly
Other problems		<ul style="list-style-type: none">• go to the Contents section and re-trace the procedure or contact your nearest AMR distributor/dealer

Transport:

Toploading proprietary AMR transport mechanism

Operation modes:

- Direct Master I; no digital or analogue filter
- Direct Master II; no digital filter, anti-sin(x)/(x) analogue filter
- Oversampling 2x
- Oversampling 4x
- Upsampling 96KHz
- Upsampling 192KHz

Digital Audio Inputs:

1 x USB interface, 1 X S/P-DIF Interface (shared)

Analogue Outputs:

1 x RCA; 1 x XLR per channel

Digital Outputs:

1 X S/P-DIF Interface

Thermionic Electron Valves

amplification stage: 6N1P-EV fitted

ECC88, E88CC, 7308, Cca, 6DJ8, 6922, 6N23P-EV optional

Output voltage (Digital Full Scale):

$\geq 2V$

Output Impedance:

$\leq 150 \text{ Ohm}$

Frequency Response:

20Hz to 20 KHz +0.0, -0.5dB

Signal-to-noise ratio "A" Weighted:

$\geq 100 \text{ dB}$

Total Harmonic Dist. + Noise (THD+N):

$\leq 0.3\%$

Dynamic range:

$\geq 90 \text{ dB}$

Channel separation:

$\geq 90 \text{ dB}$

Power Transformer:	32 VA Custom EI Transformer (Digital Section) 32 VA Custom EI Transformer (Valve Stage)
Power consumption:	Standby: < 1 W Power on: < 45W
Rated voltage:	100V/120V/230V~AC 50Hz - 60Hz
Mains Fuse:	100V/120V: 1A slow blow; 230V: 0.5A slow blow
Colour:	Silver or Black
Dimensions:	17.7 in W by 4.7 in H by 14.6 in D 45 cm W by 12 cm H by 37 cm D 57 cm W by 49 cm H by 25 cm D (shipped)
Weight:	CD-777: 25.4 lbs / 11.5 kg Shipped: 34.2 lbs / 15.5 kg

Unless specified otherwise, the specifications apply to the 4 x oversampling mode and a digital full scale signal using IHF loading. Information and specifications are subject to change without notice.



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