ARCAM

ʃMʃ **AVR500 / AVR600 / AV888**

HANDBOOK AVR surround amplifier / AV processor

ARCAM

POWER/STANDBY

MENU — INPUT + OK INFO MODE DIRECT DISPLAY ZONE MUTE — VOLUME +

AVR600

DOLBY TRUE HD DIGITAL PLUS PRO LOGIC IIx

DOLBY VOLUME

HDMI

AUX

PHONES

HD 1080p VIDEO SCALING

dts-HD Master Audio

dts Digital Surround ES | Neo:6 | 96/24

POWER

safety guidelines

Class II product

This equipment is a Class II or double insulated electrical appliance. It has been designed in such a way that it does not require a safety connection to electrical earth ('ground' in the U.S.).

Many of these items are common sense precautions but, for your own safety and to ensure that you do not damage the unit, we recommend that you read them.

Important safety instructions

This product is designed and manufactured to meet strict quality and safety standards. However, you should be aware of the following installation and operation precautions.

1. Take heed of warnings and instructions

You should read all the safety and operating instructions before operating this equipment. Retain this handbook for future reference and adhere to all warnings in the handbook or on the equipment.

2. Water and moisture

The presence of electricity near water can be dangerous. Do not use the equipment near water – for example next to a bathtub, washbowl, kitchen sink, in a wet basement or near a swimming pool, etc.

3. Object or liquid entry

Take care that objects do not fall and liquids are not spilled into the enclosure through any openings. Liquid-filled objects such as vases should not be placed on the equipment.

4. Placing the equipment

Only use a rack or shelf that is stable and strong enough to support the weight of this equipment.

5. Ventilation

Do not place the equipment on a bed, sofa, rug or similar soft surface, or in an enclosed bookcase or cabinet, since ventilation may be impeded.

6. Heat

Locate the equipment away from naked flames or heat-producing appliances such as radiators, stoves or other appliances that produce heat.

7. Climate

The equipment has been designed for use in moderate climates and in domestic situations. Unplug this equipment during lightning storms to prevent possible damage from a strike or mains surge.

8. Cleaning

Unplug the unit from the mains supply before cleaning.

The case should normally only require a wipe with a soft, lint-free cloth. Do not use chemical solvents for cleaning.

We do not advise the use of furniture cleaning sprays or polishes as they can cause permanent white marks.

9. Power sources

Only connect the equipment to a power supply of the type described in the operating instructions or as marked on the equipment.

The primary method of isolating the equipment from the mains supply is to remove the mains plug. The equipment must be installed in a manner that makes disconnection possible.

10. Power-cord protection

Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to the point where they exit from the equipment.

11. Power lines

Locate any outdoor antenna/aerial away from power lines.

12. Speaker connections

Any speakers must be connected to the unit using high quality class II wire (i.e. no connection to Earth should be made). Failure to observe this precaution may cause the unit to become damaged.

13. Non-use periods

If the equipment is not being used for an extended period, we recommend that you unplug the power cord of the equipment from the outlet, to save power.

14. Abnormal smell

If an abnormal smell or smoke is detected from the equipment, turn the power off immediately and unplug the equipment from the wall outlet. Contact your dealer and do not reconnect the equipment.

15. Servicing

You should not attempt to service the equipment. Contact your dealer to arrange servicing.

16. Damage requiring service

The equipment should be serviced by qualified service personnel when:

A. the power-supply cord or the plug has been damaged, or

B. objects have fallen into, or liquid has spilled into the equipment, or

C. the equipment has been exposed to rain, or

D. the equipment does not appear to operate normally or exhibits a marked change in performance, or

E. the equipment has been dropped or the enclosure damaged.

Safety compliance

This equipment has been designed to meet the IEC/EN 60065 international electrical safety standard.

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.

consignes de sécurité

CAUTION — RISK OF ELECTRIC SHOCK DO NOT OPEN

ATTENTION — RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR

ATTENTION : afin de réduire les risques de choc électrique, n'ouvrez pas le boîtier de l'appareil. Les pièces internes ne sont pas réparables par l'utilisateur. Pour tout problème matériel, contactez des techniciens qualifiés.

ATTENTION : afin de réduire les risques de choc électrique et d'incendie, veillez à ne pas exposer cet appareil à la pluie ou à l'humidité.

Le triangle dans lequel figure le symbole d'un éclair alerte l'utilisateur de la présence, dans le boîtier de l'appareil, d'une tension dangereuse, non isolée et suffisamment importante pour représenter un risque de choc électrique.

Le triangle dans lequel figure un point d'exclamation alerte l'utilisateur de la présence d'instructions de fonctionnement et de maintenance (réparation) importantes dans la documentation accompagnant le produit.

ATTENTION : au Canada et aux États-Unis, afin de prévenir tout choc électrique, aligner la plus grosse broche de la prise à la fente la plus large de la fiche et insérez entièrement la prise dans la fiche.

Class II produit

Ce produit est un appareil électrique à isolation double (appareil de classe II). Il a été conçu pour ne pas nécessiter de connexion de sécurité à la terre (ou à la masse).

Bon nombre des consignes ci-dessous sont de simples précautions de bon sens. Nous vous recommandons toutefois de les lire pour votre propre sécurité et pour celle de l'appareil.

Instructions de sécurité importantes

Cet appareil a été conçu et fabriqué conformément aux normes de qualité et de sécurité les plus strictes. Vous devez cependant observer les précautions qui suivent lors de son installation et de son utilisation.

1. Avertissements et consignes

Il est impératif de lire les consignes de sécurité et d'utilisation avant de mettre cet appareil en marche. Conservez ce manuel pour vous y référer par la suite et respectez scrupuleusement les avertissements figurant dans ce manuel ou sur l'appareil lui-même.

2. Eau et humidité

L'installation d'un appareil électrique à proximité d'une source d'eau présente de sérieux risques. Il ne faut donc pas installer l'appareil près d'une baignoire, d'un lavabo, d'un évier, dans un sous-sol humide, près d'une piscine, etc.

3. Chute d'objets ou infiltration de liquides

Veillez à ne pas laisser tomber d'objets ni couler de liquides à travers les ouvertures de l'appareil et ne placez pas sur l'appareil d'objet contenant du liquide, tel qu'un vase par exemple.

4. Placement de l'équipement

Utilisez uniquement une étagère assez stable et solide pour supporter le poids de cet équipement.

5. Ventilation

Évitez de placer l'appareil sur un lit, un canapé, un tapis ou une surface similaire instable ou dans une bibliothèque ou un meuble fermé. Ceci risquerait de nuire à la ventilation du système.

6. Exposition à la chaleur

Ne placez pas l'appareil à proximité d'une flamme nue ou de tout dispositif produisant de la chaleur : radiateur, poêle ou autre.

7. Conditions climatiques

L'appareil est conçu pour fonctionner dans des climats modérés. Déconnectez cet équipement pendant un orage pour éviter tous dommages possibles d'un impacte de la foudre ou de surtension.

8. Nettoyage

Mettez l'appareil hors-tension avant de le nettoyer.

Pour l'entretien du boîtier, utilisez uniquement un chiffon doux, humide et non pelucheux. N'utilisez pas de solvant chimique.

L'emploi d'aérosols ou de produits de nettoyage pour meubles est déconseillé, car le passage d'un chiffon humide risquerait de laisser des traces blanches et indélébiles.

9. Alimentation secteur

Branchez l'appareil uniquement sur une alimentation secteur du type mentionné dans le manuel d'utilisation ou indiqué sur l'appareil lui-même.

Le principal moyen d'isoler l'appareil du secteur est d'utiliser l'interrupteur situé à l'arrière de l'appareil. Cet appareil doit être installé de façon à pouvoir être débranché si nécessaire.

10. Protection des câbles d'alimentation secteur

Veillez à ce que les câbles d'alimentation ne se trouvent pas dans un lieu de passage ou bloqués par d'autres objets. Cette règle s'applique plus particulièrement aux prises et câbles d'alimentation et à leurs points de sortie de l'appareil.

11. Câbles haute tension

Évitez de monter l'antenne extérieure de l'appareil à proximité de câbles haute tension.

12. Branchement des haut-parleurs

Tous les haut-parleurs doivent être connectés à l'AVR600 avec du câble de classe II (aucune mise à la terre nécessaire). Le non-respect de cette précaution est susceptible d'endommager l'appareil.

13. Périodes de non-utilisation

Si l'appareil possède une fonction de mise en veille, un courant faible continuera de circuler lorsqu'il sera réglé sur ce mode. Débrancher le cordon secteur de la prise murale si l'appareil doit rester inutilisé pendant une période prolongée.

14. Odeur suspecte

Arrêtez et débranchez immédiatement l'appareil en cas d'émission de fumée ou d'odeur anormale. Contactez immédiatement votre revendeur.

15. Service

N'essayez jamais d'effectuer d'autres opérations que celles mentionnées dans ce manuel. Toute autre intervention doit être effectuée par un personnel qualifié.

16. Entretien par des techniciens qualifiés

L'appareil doit être entretenu par du personnel qualifié lorsque :

A. la prise ou le câble d'alimentation a été endommagé,
B. des objets sont tombés ou du liquide a coulé dans l'appareil,
C. l'appareil a été exposé à la pluie,
D. l'appareil présente des dysfonctionnements,
E. l'appareil est tombé ou le boîtier a été endommagé.

Respect des consignes de sécurité

Cet appareil a été conçu pour répondre à la norme internationale de sécurité électrique EN60065.

Cet appareil est conforme à la Section 15 des règles de la FCC. Son fonctionnement est soumis aux deux conditions suivantes :

(1) ce produit ne risque pas de causer d'interférences nuisibles et (2) ce produit doit accepter toutes les interférences reçues, y compris celles qui risquent d'entraîner un fonctionnement indésirable.

Contents

Thank you and congratulations for purchasing your Arcam FMJ AVR500/AVR600 surround amplifier or AV888 AV processor.

Arcam has been producing specialist audio products of remarkable quality for over three decades and the new FMJ products are the latest in a long line of award winning Hi-Fi. The design of the FMJ range draws upon all of Arcam's experience as one of the UK's most respected audio companies, to produce Arcam's best performing range of products yet – designed and built to give you years of watching and listening enjoyment.

This handbook is intended to give you a detailed guide to using the AVR500/AVR600 surround amplifier and the closely related AV888 AV processor. It starts by giving advice on installation, moves on to describe how to use the product and finishes with additional information on the more advanced features. Use the contents list shown on this page to guide you to the section of interest.

We hope that your FMJ product will give you years of trouble-free operation. In the unlikely event of any fault, or if you simply require further information about Arcam products, our network of dealers will be happy to help you. Further information can also be found on the Arcam website at www.arcam.co.uk.

<div align="center">

The FMJ development team

</div>

welcome

English

Professional Installation?

It may be that the unit has been installed and set up as part of your Hi-Fi installation by a qualified Arcam dealer. In this case, you may wish to skip the sections of this handbook dealing with installation and setting up, and move directly to the sections dealing with using the unit. Use the Contents list to guide you to these sections.

DIY setup?

The AVR500, AVR600 and AV888 are powerful and sophisticated items of AV equipment. If you are setting a unit up yourself, it is recommended that you read this handbook thoroughly before beginning. For instance, correct speaker configuration and placement is a key to getting the most out of your FMJ product and making sure that all the elements of your system work in harmony.

The AVR500/AVR600 is a high-quality and high-performance home-cinema processor and amplifier built to Arcam's quality design and manufacturing standards. The closely related AV888 is a home-cinema processor which provides multichannel input to an external amplifier (such as Arcam's P777). They both combine digital processing with high-performance audio and video components to form the locus of an unrivalled home-entertainment centre.

The AVR500/AVR600/AV888 allow switching and control of eight analogue and seven digital sources. The AVR500 and AVR600 have internal AM, FM and DAB* radio and the AVR600 can accept a SiriusConnect™ Home Tuner input. The AVR600, AV888 and optionally the AVR500* can accept networked and USB audio sources – making it an ideal hub for both home-cinema and two-channel stereo systems.

DAB and network/USB connectivity are optional for the AVR500, please contact your dealer for information.

Since many of these source components are also capable of generating video signals, the AVR500/AVR600 receiver and the AV888 processor units include broadcast-quality switching for HDMI, Composite, S-Video, RGB and Component video signals. There are audio and video outputs for PVR and VCR recording, as well as two digital outputs for digital recording of digitised audio sources (AVR600/AV888 only). DVD-Audio and SACD can be connected via the multichannel input. Control of the AVR500, AVR600 or the AV888 is either by front panel control buttons, IR remote control or RS232 port.

The CR102 remote control supplied with either unit is an eight-device 'universal' learning remote control which is simple to use, and once set up is able to control a complete system. It can be programmed using its vast internal code library to control CD and DVD players, PVRs, TVs and other devices.

The installation of the AVR500, AVR600 or AV888 in a listening room is an important process which requires care at every stage. For this reason, the installation information is very comprehensive and should be followed carefully to achieve an unrivalled level of performance.

The AVR500/AVR600 surround amplifier and AV888 AV processor are designed to produce a level of performance that will truly bring music and movies to life.
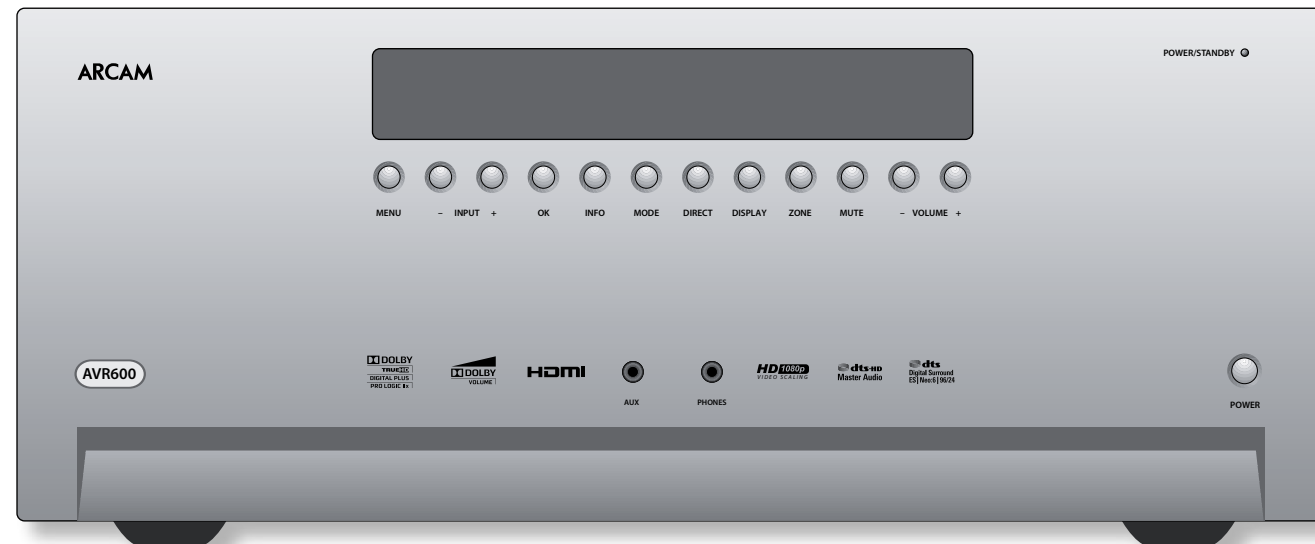
Placing the unit

- Place the unit on a level, firm surface, avoiding direct sunlight and sources of heat or damp.
- Do not place the unit on top of a power amplifier or other source of heat.
- Do not place the unit in an enclosed space such as a bookcase or closed cabinet unless there is good provision for ventilation. The unit will run warm during normal operation.
- Do not place any other component or item on top of the amplifier as this may obstruct airflow around the heat-sink, causing the amplifier to run hot. (The unit placed on top of the amplifier would become hot, too.)
- Make sure the remote-control receiver on the front panel display is unobstructed, otherwise this will impair the use of the remote-control. If line-of-sight is impractical, a remote-control repeater can be used with the rear panel connector (see page 17).
- Do not place your record deck on top of this unit. Record decks are very sensitive to the noise generated by mains power supplies which will be heard as a background 'hum' if the record deck is too close.

Power

The amplifier is supplied with a moulded mains plug already fitted to the lead. Check that the plug supplied fits your supply – should you require a new mains lead, please contact your Arcam dealer.

If your mains supply voltage or mains plug is different, please contact your Arcam dealer immediately.

The amplifier can be switched for operation between 195–265V (switch position 230V) and 85–132V (switch position 115V).

> **NOTE**
>
> Ensure that the unit is switched off and the power lead removed before changing the position of the voltage range switch.

Push the IEC plug end of the power cable into the socket on the back of the amplifier, making sure that it is pushed in firmly. Plug the other end of the cable into your mains socket and, if necessary, switch the socket on.

The amplifier can be turned on using the **POWER** switch on the front panel. While switched on, the front panel LED will glow green.

Standby power

The unit can be switched into standby mode using the ⏻ button on the CR102 remote control. While in standby mode the front panel LED will glow red and power consumption is around 3 watts.

While in Standby mode, it may be possible to hear a slight residual hum coming from the mains transformer inside the amplifier. This is perfectly normal. However, if the unit is to be left unused for an extended period, we recommend that you disconnect it from the mains supply to save power.

Interconnect cables

We recommend the use of high-quality screened cables that are designed for the particular application. Other cables will have different impedance characteristics that will degrade the performance of your system (for example, do not use cabling intended for video use to carry audio signals). All cables should be kept as short as is practically possible.

It is good practice when connecting your equipment to make sure that the mains power-supply cabling is kept as far away as possible from your audio cables. Failure to do so may result in unwanted noise in the audio signals.

For information on speaker cabling, please refer to the 'Speakers' section, beginning on page 23.

Radio interference

The AVR500, AVR600 and AV888 are audio devices containing microprocessors and other digital electronics. They have been designed to very high standards of electromagnetic compatibility.

This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

If the unit causes interference to radio or television reception (which can be determined by switching the unit off and on), the following measures should be taken:

- Re-orient the receiving antenna or route the antenna cable of the affected receiver as far as possible from the unit and its cabling.
- Relocate the receiver with respect to the unit.
- Connect the affected device and the unit to different mains outlets.

If the problem persists, please contact your Arcam dealer.

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audio/video connections

Before connecting your AVR500/AVR600 or AV888 and power amplifier (e.g. the Arcam P777) to your source components and speakers, please read through the next few pages which will explain all the input and output connectivity that is available. The 'Speakers' section explains how to connect up your speakers to avoid damage to the amplifier and how to arrange your speakers for best performance.

General

The inputs are named to make it easier to reference connected devices (e.g. '**DVD**' or '**VCR**'). They all have the same input circuit (with the exception of the '**PHONO**' input), so there is no reason why you should not connect a different device to any of the inputs. For example, if you had two DVD players and the AV input was not being used, then the second DVD player could be connected to the AV input.

When connecting a video source, its audio must be connected to the corresponding sockets. For example, if you a had a satellite decoder plugged into a **SAT** video input, the audio must be connected to the **SAT** audio inputs!

The hierarchy for video connections for best quality is as follows;
- HDMI
- Component/RGB
- S-Video
- Composite.

You should connect as many of these as possible. The unit will automatically select the best quality connection for the source available. For any video source to be available in Zone 2 you must have an S-Video or Composite connection between the unit and the source.

Making connections

- Wherever possible, connect both the analogue and digital outputs of digital sources. This enables use of a digital input for the main zone and the corresponding analogue input for recording onto an analogue tape deck, VCR or PVR, or for the Zone 2 or 3 output.
- Take care to place cables as far from any power supply cabling as is practicable, to reduce hum and other noise problems.

Product differences and options

Product operation is broadly similar for the AVR500, AVR600 and AV888, however, the AVR600 & AV888 have a greater variety of input connectors and a different rear panel layout. For this reason, two sections of connection diagrams are presented. Please see Page 8 for the AVR600 & AV888. For the AVR500 please skip ahead to Page 14.

English

Important notes about Component/RGB video inputs and outputs
- When you connect your devices to these connectors, take care to follow the letter/colour coding for each input. No damage will occur due to incorrect connection but incorrectly coloured or unstable pictures will result.
- The Component video inputs have sufficient bandwidth for NTSC (525/60) or PAL (625/50) video and HDTV video signals.

Video connectors

Component, S-Video and Composite connectors, see page 9.

Zone 2 and 3 connectors, see page 9.

Digital connectors

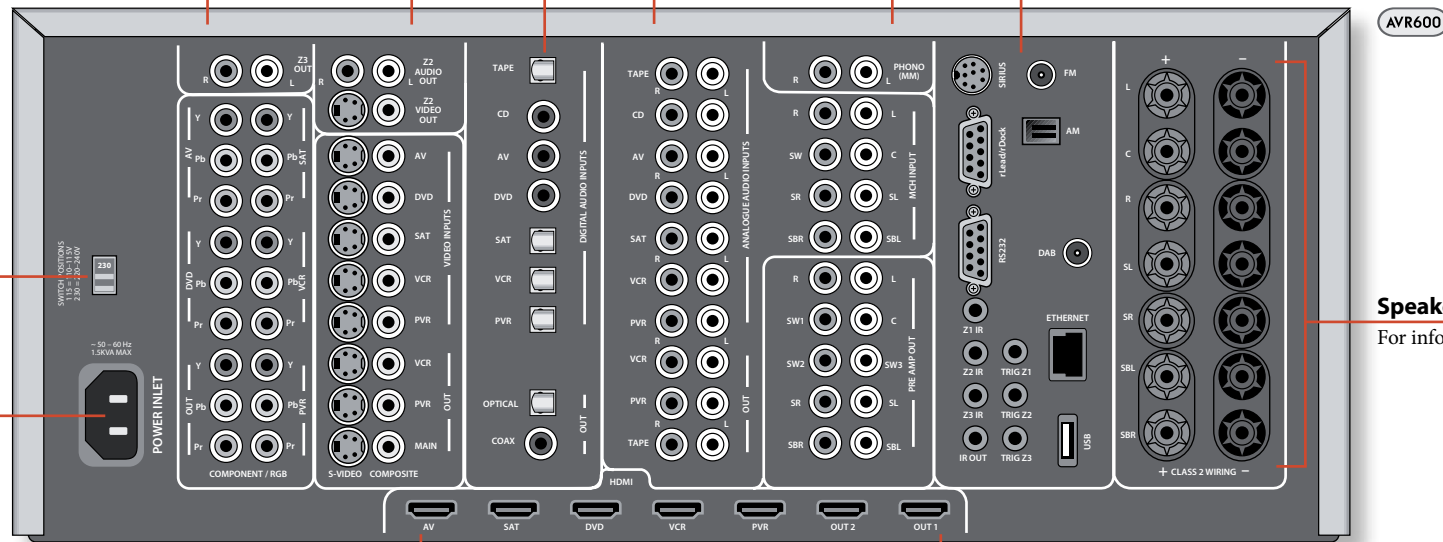Optical and electrical digital audio connectors, see page 10.

Aerials, control and communication

Sirius satellite radio, FM/AM/DAB radio, rLead/rDock, RS232, Network/USB, IR and trigger connectors, see page 20.

Audio connectors

Two-channel and multichannel, see page 10.

Voltage select

Ensure the voltage selected matches your local power supply

Power inlet

Connect the correct mains cable here

Speaker connectors

For information, see page 23.

HDMI

For information, see page 9.

XLR audio output

Balanced XLR connectors for each of seven channels, to an XLR-equipped amplifier.

For information, see page 53.
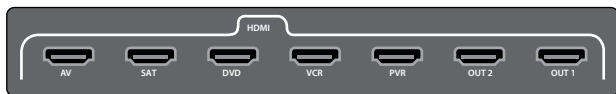
NOTE

Please read the 'Placing the unit', 'Power' and 'Interconnect cables' sections on page 5 before connecting up your AVR600 or AV888!

AVR600

AV888

HDMI connectors

AV, SAT, DVD, VCR, PVR

Connect the HDMI video outputs of your source equipment to these corresponding HDMI inputs.

OUT 1

Connect this output to the HDMI video input of your main zone display device.

OUT 2

Connect this output to the HDMI video input of your second display device or to another HDMI display device in a second living space. As the unit has only one processed video path, this signal will be a copy of the signal on **OUT 1**.

> **NOTE**
>
> All Zone 1 analogue video outputs will be disabled if an HDMI digital video source is selected.

Zone 3 connectors
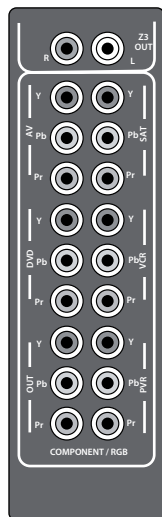
Z3 OUT

Connect these analogue audio outputs to your Zone 3 equipment. See 'Multi-room Setup' on page 54 for information.

Component/RGB video connectors

These inputs are suitable for connection to source devices which output Component (YUV or YPbPr) or RGB high quality analogue video signals. These signals are usually available from DVD players, set-top boxes or games consoles.

If you are connecting up to an RGB source you will also need to connect the source's Composite output to the unit's Composite input to act as a video sync. The Composite signal should be on the same named input as the RGB signals.

RGB video outputs on source equipment are often on SCART connectors. You will need to use a SCART to 'RGB+Sync on phono' breakout cable, available from your Arcam dealer.

> **NOTE**
>
> When setting up the menus (later in this manual), you will need to select whether the three-wire high quality video input is Component or RGB for each input. This is done on the 'HQ Video In' line in the Input Config menu. Failure to do this can result in a green looking picture or a picture that is unstable.

AV, DVD, SAT, VCR, PVR

Connect the Component video outputs of your source equipment to these inputs.

OUT

Connect this output to the Component video input of your display device.

> **NOTE**
>
> Analogue RGB video output is not available from the AVR500, AVR600 or AV888. The analogue three-wire high quality video output is always configured as Component video.

Zone 2 connectors
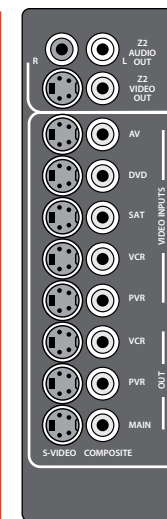
Z2 AUDIO OUT, Z2 VIDEO OUT

Connect these analogue audio and video outputs to your Zone 2 equipment. See 'Multi-room Setup' on page 54 for information.

# S-Video and Composite connectors

AV, DVD, SAT, VCR, PVR

Connect these inputs to the S-Video and Composite outputs of your available source equipment.

VCR OUT, PVR OUT,

These are recording outputs. Connect these to the 'S-Video in' or 'Composite in' sockets (usually labelled '**RECORD**') on your recording device.

MAIN OUT

Connect this output to the S-Video or Composite sockets on your primary Zone 1 display.
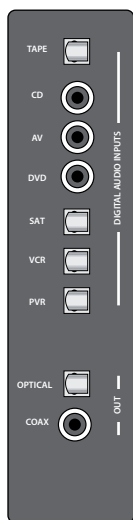
Digital audio connectors

TAPE, CD, AV, DVD, SAT, VCR, PVR

Connect these inputs to the digital outputs of your available source equipment.

OPTICAL, COAX

Connect the optical or coaxial output to your digital recording device such as CD-R, digital VCR or Minidisc player.

When a digital source is selected, the digital output will send an exact copy of the incoming digital signal. For example, for a 5.1 digital source, the digital output will also be in 5.1 format.

When an analogue-only source is selected, this is digitized by the unit and routed to the digital outputs.

These outputs are muted if a source is selected where the HDMI connection is used and is transmitting HD audio. The digital audio from the HDMI link will not be routed to these outputs.
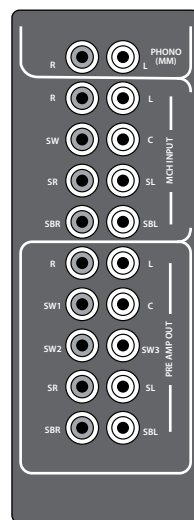
Phono

This input can be connected directly to a record deck which has a direct output from a moving magnet (MM) cartridge.

MCH input

This multichannel analogue audio input can be connected to a source device which outputs surround sound on its analogue outputs. Such devices typically include DVD-Audio and SACD players. This input does not pass through any of the audio processing in the unit, therefore functions such as speaker size and distance from the listening position should be copied from the Setup menus into the Setup menus of your multichannel source. Note however that speaker level trims *are* applied to the MCH input on the unit. Therefore speaker level trim settings on multichannel source equipment should be left unset at zero.

Analogue pre-amplifier outputs

All pre-amplifier analogue outputs are buffered, have a low output impedance, are at line level and follow the Zone 1 volume control setting. They are able to drive long cables or several inputs in parallel if required.

For more information on connecting speakers or additional power amplifiers, see page 23 and 53.
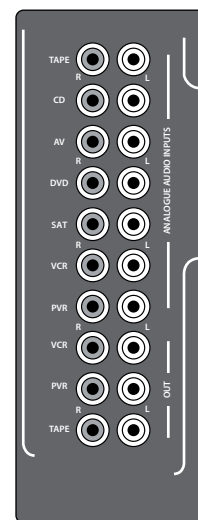
Analogue audio inputs

TAPE, CD, AV, DVD, SAT, VCR, PVR

Connect the left and right inputs to the left and right outputs of your source equipment.

Analogue record outputs

VCR OUT, PVR OUT, TAPE OUT

Connect the left and right outputs to the left and right input sockets of your cassette deck, PVR or VCR (usually labelled 'RECORD'). The PVR and VCR connectors may be used for a second and third cassette deck. These outputs are fixed at full line level.

Front panel AUX input
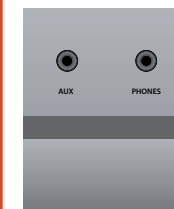
The front panel AUX input can be used as an analogue or optical digital input.

For analogue sources, use a stereo 3.5mm lead; for digital sources use a 3.5mm optical lead. The front input is also used for the auto-setup microphone input.

Front panel PHONES socket

This socket accepts headphones with an impedance rating between 32Ω and 600Ω, fitted with a 3.5mm stereo jack plug. The headphone socket is always active, except when AVR600/AV888 is muted.

When the headphone jack is inserted, the speaker outputs and analogue pre-amplifier outputs are automatically muted.

Trigger connectors

The trigger connectors (**TRIG Z1**, **TRIG Z2** and **TRIG Z3**) provide an electrical signal whenever the amplifier is switched on and the relevant zone enabled.
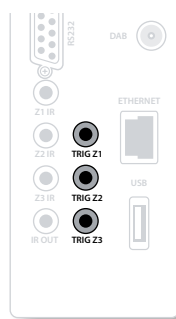
The trigger signal can be used to switch on and off compatible pieces of home entertainment equipment, for example, you could set up a trigger to turn on your television and DVD player whenever the unit was switched on.

There are three trigger output sockets on the unit, each capable of outputting a 12V, 70mA switching signal. The socket is designed for mono 3.5mm jacks: tip is the trigger output, sleeve is ground.

tip: Trigger output

sleeve: Ground
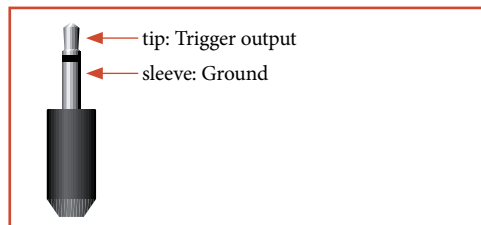
TRIG Z1

Use for remotely turning on and off power amps or source equipment for Zone 1. On = 12V, Off = 0V.

TRIG Z2

Use for remotely turning on and off power amps or source equipment for Zone 2. On = 12V, Off = 0V.

TRIG Z3

Use for remotely turning on and off power amps or source equipment for Zone 3. On = 12V, Off = 0V.

NOTE

Sockets with the prefix 'Z2' or 'Z3' refer to connections used in multi-room installation. For more information on these connectors, see page 54.

Infra-red (IR) connectors
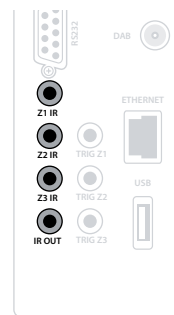
The infra-red inputs (**Z1 IR**, **Z2 IR** and **Z3 IR**) allow the connection of external IR receivers, either when the unit's front panel IR receiver is fully or partially obstructed or to allow the use of a remote control in Zone 2 or Zone 3.

There are three IR inputs on the unit, each designed for stereo or mono 3.5mm jacks. Tip is the modulated signal, sleeve is ground.

tip: Modulated signal

sleeve: Ground

Z1 IR

This input is intended for use with a local IR receiver when the front panel of the unit is blocked.

Connecting an IR receiver to **Z1 IR** will disable to front panel IR receiver to prevent problems with multiple commands if the front panel IR receiver is only partially obstructed.

Z2 IR

This input is intended for use with an IR receiver in Zone 2 to allow remote control of the unit from a second room.

Z3 IR

This input is intended for use with an IR receiver in Zone 3 to allow remote control of the unit from a third room.

IR OUT

This output is an electrical combination of the Z1 (or front panel) + Z2 + Z3 infra-red signals above. It can be used to drive external IR emitters or can be connected directly to other Arcam equipment which have an IR input. This function can be useful as an IR 'repeater' so that someone in any of the zones can control the functions of a CD player in the main zone, for example. Tip is the modulated electrical IR signal, sleeve is ground.

A supplier of infra-red receivers and emitter accessories and systems is Xantech. See *www.xantech.com* for more information, or ask your Arcam dealer.

NOTE

The IR inputs on the unit are designed for modulated signals. If the external IR receiver demodulates the IR signal, it will not work. Also the unit does not provide power for external receivers on the IR jack, therefore an external power source will be required.

Connection guide - AVR600/AV888

AVR600

DVD player

The diagram shows how to make audio and video connections from a typical DVD player.

The preferred video hook-up, in order of preference is:

- use the HDMI connector (if HDMI output is provided by the player), otherwise connect the three Component or four RGB+Sync video connectors.
- use the S-Video connection if HDMI or Component /RGB+Sync outputs are not provided by your player.
- use the Composite connection if HDMI, Component/RGB+Sync or S-Video are not provided by your player.

In each case, connect the video inputs labelled DVD on the unit.

The preferred audio hook-up is using the coaxial digital connector (usually marked DIGITAL AUDIO OUT), in addition to the coaxial analogue outputs for left and right channels.

In each case, use the audio inputs labelled DVD on the unit.

Satellite receiver

A satellite receiver is connected in the same way as a DVD player, with the same order of preference according to the outputs provided by the satellite receiver.

In each case, use the inputs labelled SAT on the unit. Note that digital audio input from a satellite receiver sometimes requires a coaxial/TOSLINK (digital connector) interconnect cable, as some satellite receivers do not implement audio over HDMI properly or at all.

CD player

Connect the digital audio output (if provided by the CD player) to the digital CD input of the unit, using a high quality coaxial interconnect cable.

Connect the right and left analogue audio outputs of the CD player to the analogue CD inputs of the unit, using a pair of high quality coaxial interconnect cables.

Connecting an iPod using the Arcam rDock

The combination of the AVR600/AV888 and Arcam's optional **rDock** or **rLead** accessory provides a great platform for your iPod.

Connect the **rDock** as shown, power on the **rDock**, slot in your iPod and select **IPOD** as the source. Set the *Audio In iPod* item in the 'General Setup' menu to the audio input that you have used to connect the **rDock**. For video connections, select the video source you have used for the iPod input in the 'Video Inputs' menu.

Navigating through music and podcasts on your iPod is simple using the CR102 remote, with text appearing on the front panel display.

More information is given in the **rDock quick start guide** (or **rLead quick start guide**) supplied with these accessory units.
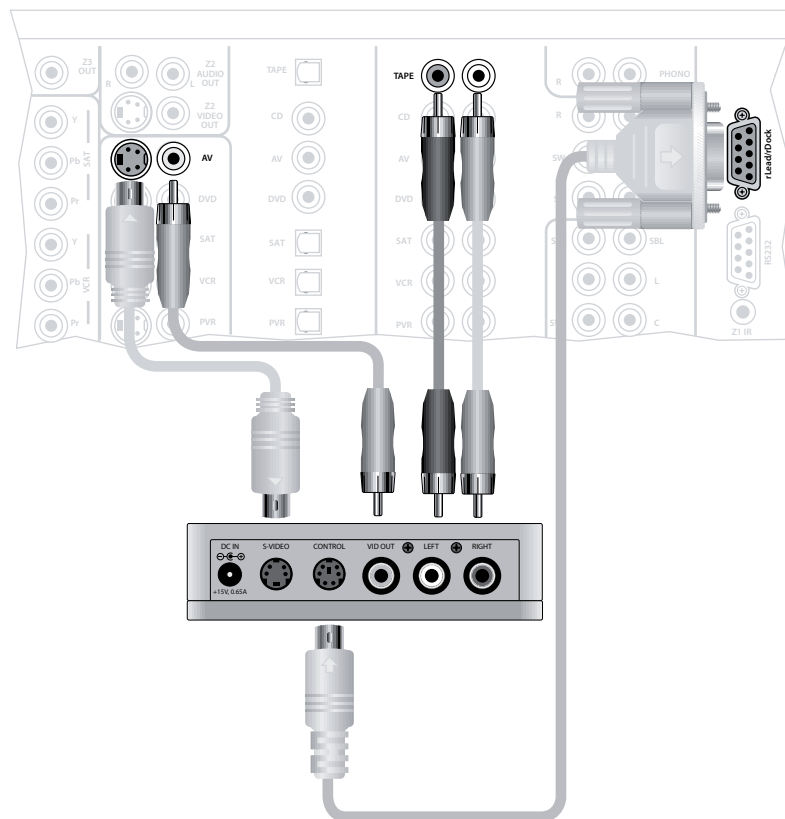
AVR500 rear panel connectors

Video connectors

Component, S-Video and Composite connectors, see page 15.

Zone 2 connectors, see page 15.

Digital connectors

Optical and electrical digital audio connectors, see page 16.

Aerials, control and communication

FM/AM radio, DAB radio (optional), rLead/rDock, RS232, Network/USB (optional), IR and trigger connectors, see page 20.

Audio connectors

Two-channel and multichannel, see page 16.

Voltage select

Ensure the voltage selected matches your local power supply

Power inlet

Connect the correct mains cable here

Speaker connectors

For information, see page 23.

HDMI

For information, see page 15.

Diagram labels:

AVR500

Z2 AUDIO OUT — R L — Z2 VIDEO OUT — VCR — PVR

TAPE — CD — AV — DVD — SAT — VCR — PVR (DIGITAL AUDIO INPUTS)

TAPE R L — CD — AV — DVD — SAT — VCR — PVR (ANALOGUE AUDIO INPUTS)

R L — C SW — SR SL — SBR SBL (MCH INPUT)

FM — AM — rLead/Dock — RS232 — DAB — ETHERNET — Z1 IR — Z2 IR — TRIG Z1 — IR OUT — TRIG Z2 — USB

SUBWOOFER OUTPUT — SW1 SW2

VIDEO INPUTS — AV — SAT — Y Pb Pr — OUT — DVD OUT — Y Pb Pr — COMPONENT / RGB

SWITCH POSITIONS 115 = 1 = 115V 230 = 2 = 230V — 230

~ 50 ~ 60 Hz 1.5KVA MAX — POWER INLET

HDMI — AV SAT DVD VCR PVR OUT 2 OUT 1

Speaker connectors: + − L C R SL SR SBL SBR — + CLASS 2 WIRING −
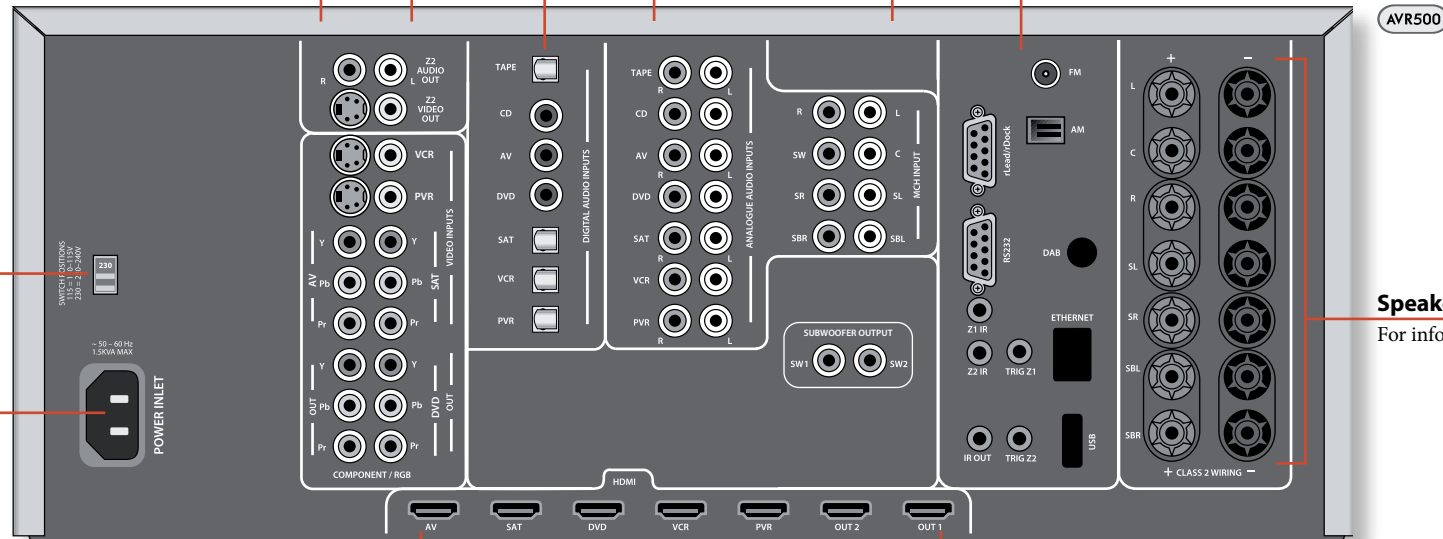
NOTE

Please read the 'Placing the unit', 'Power' and 'Interconnect cables' sections on page 5 before connecting up your AVR500!

HDMI connectors

AV, SAT, DVD, VCR, PVR

Connect the HDMI video outputs of your source equipment to these corresponding HDMI inputs.

OUT 1

Connect this output to the HDMI video input of your main zone display device.

OUT 2

Connect this output to the HDMI video input of your second display device or to another HDMI display device in a second living space. As the unit has only one processed video path, this signal will be a copy of the signal on **OUT 1**.

> **NOTE**
>
> All Zone 1 analogue video outputs will be disabled if an HDMI digital video source is selected.

Zone 2 connectors

Z2 AUDIO OUT, Z2 VIDEO OUT

Connect these analogue audio and video outputs to your Zone 2 equipment. See 'Multi-room Setup' on page 50 for information.

S-Video and Composite connectors

VCR, PVR

Connect these inputs to the S-Video and Composite outputs of your available source equipment.

Component/RGB video connectors

These inputs are suitable for connection to source devices which output Component (YUV or YPbPr) or RGB high quality analogue video signals. These signals are usually available from DVD players, set-top boxes or games consoles.

If you are connecting up to an RGB source you will also need to connect the source's Composite output to the unit's Composite input to act as a video sync. The Composite signal should be on the same named input as the RGB signals.

RGB video outputs on source equipment are often on SCART connectors. You will need to use a SCART to 'RGB+Sync on phono' breakout cable, available from your Arcam dealer.

> **NOTE**
>
> When setting up the menus (later in this manual), you will need to select whether the three-wire high quality video input is Component or RGB for each input. This is done on the 'HQ Video In' line in the Input Config menu. Failure to do this can result in a green looking picture or a picture that is unstable.

AV, SAT, DVD

Connect the Component video outputs of your source equipment to these inputs.

OUT

Connect this output to the Component video input of your display device.

> **NOTE**
>
> Analogue RGB video output is not available from the AVR500. The analogue three-wire high quality video output is always configured as Component video.

Digital audio connectors

TAPE, CD, AV, DVD, SAT, VCR, PVR

Connect these inputs to the digital outputs of your available source equipment.
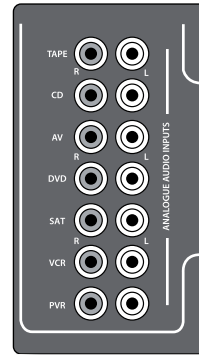
Analogue audio inputs

TAPE, CD, AV, DVD, SAT, VCR, PVR

Connect the left and right inputs to the left and right outputs of your source equipment.

MCH input

This multichannel analogue audio input can be connected to a source device which outputs surround sound on its analogue outputs. Such devices typically include DVD-Audio and SACD players. This input does not pass through any of the audio processing in the unit, therefore functions such as speaker size and distance from the listening position should be copied from the Setup menus into the Setup menus of your multichannel source. Note however that speaker level trims *are* applied to the MCH input on the unit. Therefore speaker level trim settings on multichannel source equipment should be left unset at zero.

Subwoofer outputs

Connect each of these outputs to the LFE input(s) on your subwoofer(s).The Subwoofer outputs are buffered, have a low output impedance, are at line level and follow the Zone 1 volume control setting. They are able to drive long cables or several inputs in parallel if required.

For more information on connecting speakers, see page 23.

Front panel AUX input
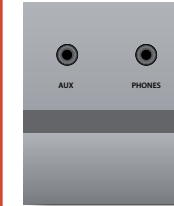
The front panel **AUX** input can be used as an analogue or optical digital input.

For analogue sources, use a stereo 3.5mm lead; for digital sources use a 3.5mm optical lead. The front input is also used for the auto-setup microphone input.

Front panel PHONES socket

This socket accepts headphones with an impedance rating between 32Ω and 600Ω, fitted with a 3.5mm stereo jack plug. The headphone socket is always active, except when AVR500 is muted.

When the headphone jack is inserted, the speaker outputs and analogue pre-amplifier outputs are automatically muted.

Trigger connectors

The trigger connectors (**TRIG Z1** & **TRIG Z2**) provide an electrical signal whenever the amplifier is switched on and the relevant zone enabled.
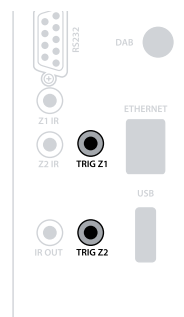
The trigger signal can be used to switch on and off compatible pieces of home entertainment equipment, for example, you could set up a trigger to turn on your television and DVD player whenever the unit was switched on.

There are two trigger output sockets on the unit, each capable of outputting a 12V, 70mA switching signal. The socket is designed for mono 3.5mm jacks: tip is the trigger output, sleeve is ground.

tip: Trigger output

sleeve: Ground
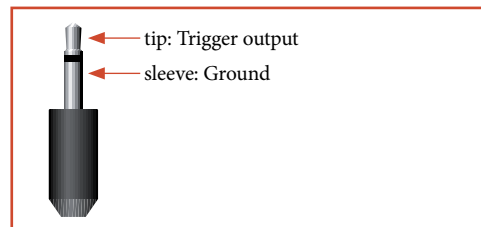
TRIG Z1

Use for remotely turning on and off power amps or source equipment for Zone 1. On = 12V, Off = 0V.

TRIG Z2

Use for remotely turning on and off power amps or source equipment for Zone 2. On = 12V, Off = 0V.

NOTE

Sockets with the prefix 'Z2' refer to connections used in multi-room installation. For more information on these connectors, see page 54.

Infra-red (IR) connectors

The infra-red inputs (**Z1 IR** and **Z2 IR**) allow the connection of external IR receivers, either when the unit's front panel IR receiver is fully or partially obstructed or to allow the use of a remote control in Zone 2.

There are two IR inputs on the unit, each designed for stereo or mono 3.5mm jacks. Tip is the modulated signal, sleeve is ground.

tip: Modulated signal

sleeve: Ground

Z1 IR

This input is intended for use with a local IR receiver when the front panel of the unit is blocked.

Connecting an IR receiver to **Z1 IR** will disable to front panel IR receiver to prevent problems with multiple commands if the front panel IR receiver is only partially obstructed.

Z2 IR

This input is intended for use with an IR receiver in Zone 2 to allow remote control of the unit from a second room.

IR OUT
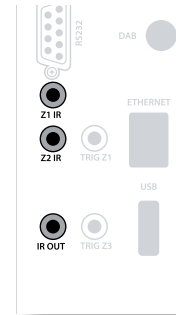
This output is an electrical combination of the Z1 (or front panel) + Z2 infra-red signals above. It can be used to drive external IR emitters or can be connected directly to other Arcam equipment which have an IR input. This function can be useful as an IR 'repeater' so that someone in any of the zones can control the functions of a CD player in the main zone, for example. Tip is the modulated electrical IR signal, sleeve is ground.

A supplier of infra-red receivers and emitter accessories and systems is Xantech. See *www.xantech.com* for more information, or ask your Arcam dealer.

NOTE

The IR inputs on the unit are designed for modulated signals. If the external IR receiver demodulates the IR signal, it will not work. Also the unit does not provide power for external receivers on the IR jack, therefore an external power source will be required.

Connection guide – AVR500

DVD player

The diagram shows how to make audio and video connections from a typical DVD player.

The preferred video hook-up, in order of preference is:

■ use the HDMI connector (if HDMI output is provided by the player), otherwise connect the three Component or four RGB+Sync video connectors.

In each case, connect the video inputs labelled **DVD** on the unit.

The preferred audio hook-up is using the coaxial digital connector (usually marked **DIGITAL AUDIO OUT**), in addition to the coaxial analogue outputs for left and right channels.

In each case, use the audio inputs labelled **DVD** on the unit.

Satellite receiver

A satellite receiver is connected in the same way as a DVD player, with the same order of preference according to the outputs provided by the satellite receiver.

In each case, use the inputs labelled **SAT** on the unit. Note that digital audio input from a satellite receiver sometimes requires a coaxial/TOSLINK (digital connector) interconnect cable, as some satellite receivers do not implement audio over HDMI properly or at all.

CD player

Connect the digital audio output (if provided by the CD player) to the digital **CD** input of the unit, using a high quality coaxial interconnect cable.

Connect the right and left analogue audio outputs of the CD player to the analogue **CD** inputs of the unit, using a pair of high quality coaxial interconnect cables.

VCR, Camcorder, Games Console etc.

Connect other video equipment with S-Video or Composite Video outputs to the S-Video or CompositeVideo inputs **VCR** or **PVR.** S-Video provides the best picture quality. Connect the right and left analogue audio outputs of the device to the equivalent analogue audio inputs.
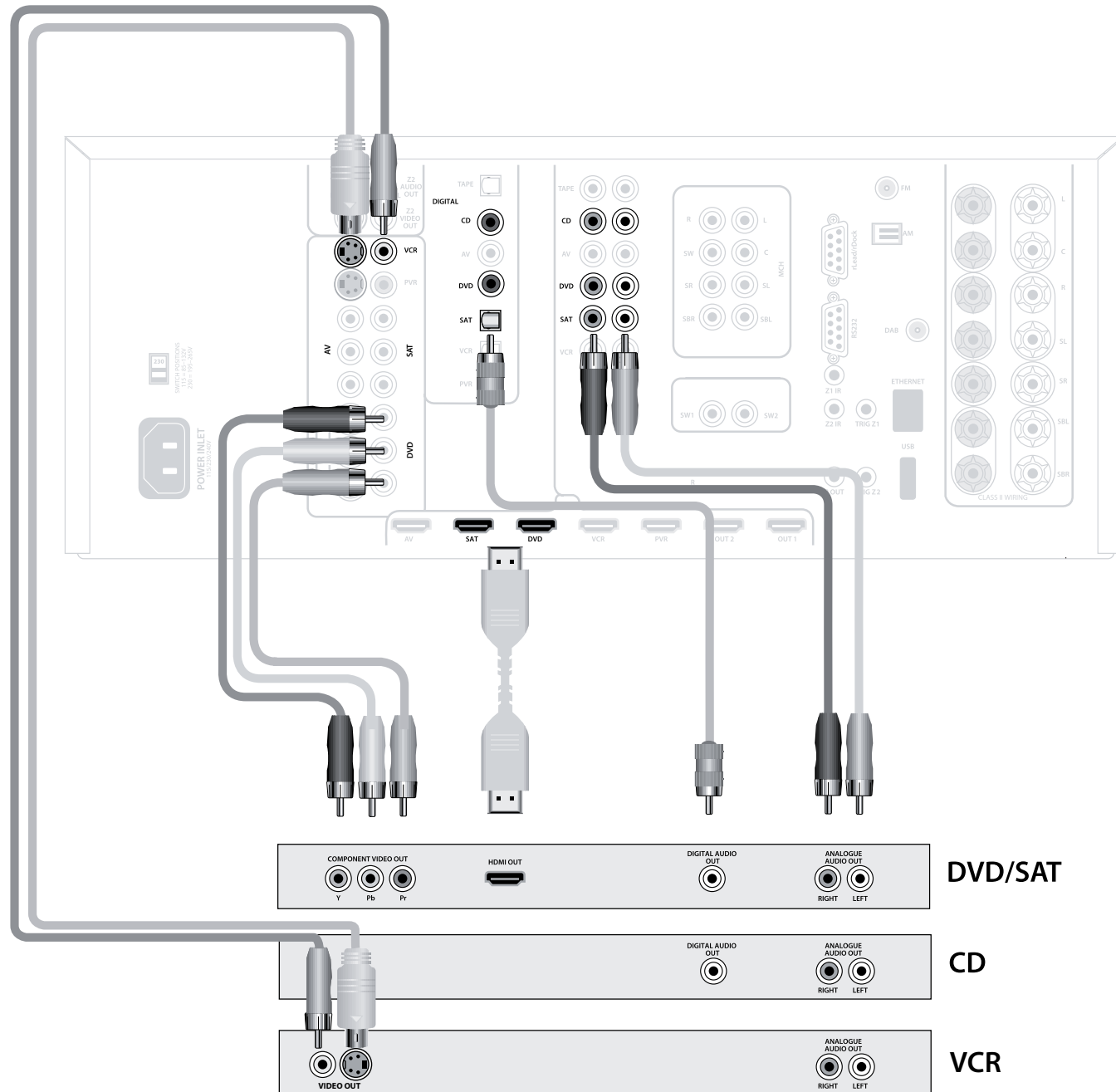
Connecting an iPod using the Arcam rDock

The combination of the AVR500 and Arcam's optional **rDock** or **rLead** accessory provides a great platform for your iPod.

Connect the **rDock** as shown, power on the **rDock**, slot in your iPod and select **IPOD** as the source. Set the *Audio In iPod* item in the 'General Setup' menu to the audio input that you have used to connect the **rDock**. For video connections, select the video source you have used for the iPod input in the 'Video Inputs' menu.

Navigating through music and podcasts on your iPod is simple using the CR102 remote, with text appearing on the front panel display.

More information is given in the **rDock quick start guide** (or **rLead quick start guide**) supplied with these accessory units.
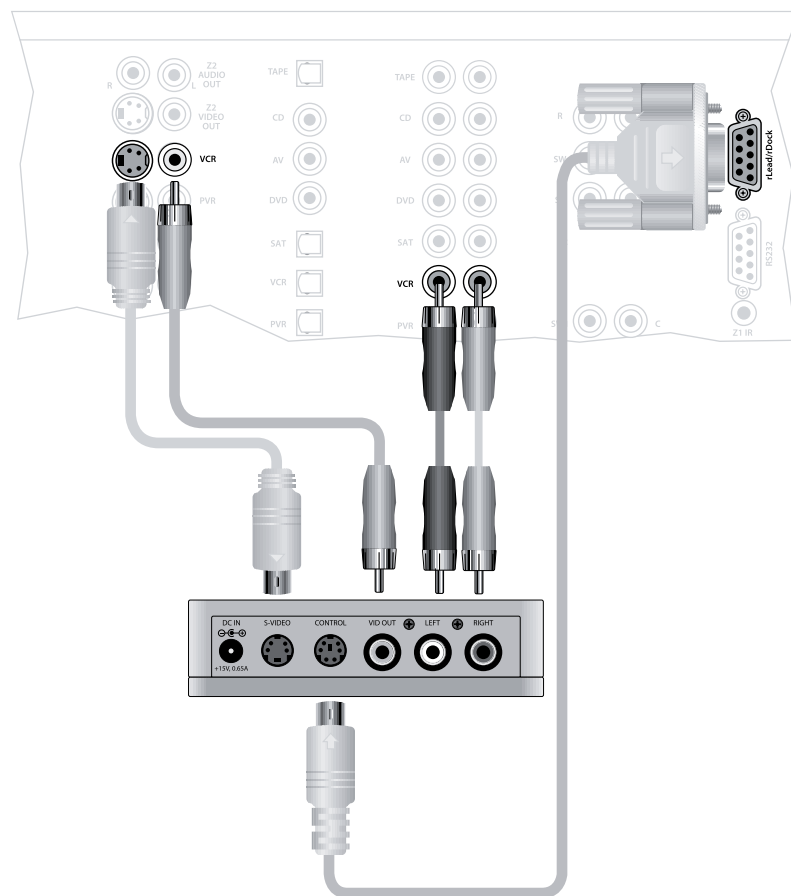
radio connectors

Aerial connectors – AVR500/AVR600 only

The AVR500/AVR600 is fitted with an AM/FM receiver module and Sirius connector or a DAB/FM receiver, depending on the region where it was sold. The type of aerial you need depends on your listening preferences and the local conditions.

Your AVR500/AVR600 is capable of superb radio reception, but only if it is receiving a good quality transmission signal.

Try the aerials supplied with your unit. If you are in a medium to strong signal area, these should be adequate for good reception. In areas with poor signal strength, you may require a roof or loft mounted aerial.

AVR500
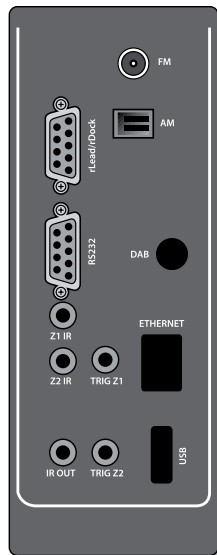
AVR600
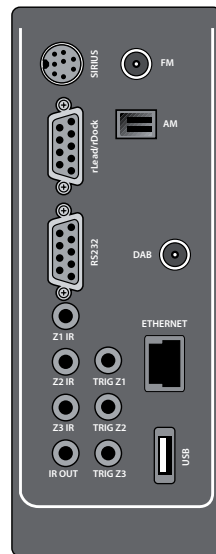
Contact your local Arcam dealer or aerial installation experts for advice about local reception conditions.

DAB option
(where fitted)

In strong signal areas, the DAB 'T' ribbon aerial supplied can be used with reasonable results. Mount the aerial as high up as possible on a wall.

In the UK the 'T'-elements need to be positioned vertically for DAB reception since broadcasts are vertically polarised. In other localities, check with your Arcam dealer or try both horizontal and vertical positions for best reception.

Try each usable wall of the room to see which gives best reception and use tacks or adhesive tape to secure the aerial in a 'T' shape, but note that no tacks should come into contact with the internal wire of the aerial.

When installed and receiving DAB, check the signal strength by pressing the front panel or remote control's **INFO** button until the signal quality indicator is displayed.

In weak signal areas, a high-gain, externally-mounted or roof-mounted aerial is desirable in order to receive the highest number of services.

In Band III transmission areas (such as the UK), use a multi-element Yagi aerial with the elements mounted vertically, as the transmissions are vertically polarised. If you are close to more than one transmitter, use an omnidirectional or folded dipole aerial.

If the DAB services in your area are transmitted on
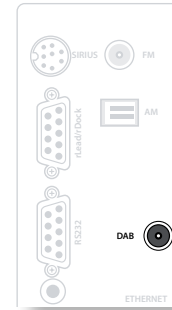
L-band, then ask your dealer for advice for the best aerial to use.

Sirius
(where fitted)

The AVR600 is designed for use with the 'SiriusConnect™ Home Tuner' package which should be connected via the cable supplied in that package to the Sirius socket.
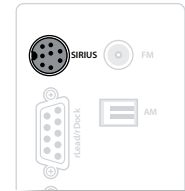
Listening to Satellite Radio

To listen to Satellite Radio, you'll need to connect either a SIRIUS or XM Satellite Radio tuner (sold separately) to your satellite-ready receiver. Satellite Radio is available to residents of the US (except Alaska and Hawaii) and Canada.

Satellite Radio delivers a variety of commercial-free music from categories ranging from Pop, Rock, Country, R&B, Dance, Jazz, Classical and many more plus coverage of all the top professional and college sports including play by play games from select leagues and teams. Additional programming includes expert sports talk, uncensored entertainment, comedy, family programming, local traffic and weather and news from your most trusted sources.

Whether you purchase a SIRIUS or XM tuner, you'll need to activate and subscribe to begin enjoying the service. Easy to follow installation and setup instructions are provided with the satellite tuners. Whichever service you choose, there are a variety of programming packages available, including the option of adding "The Best of SIRIUS" programming to your XM tuner or "The Best of XM" programming to your SIRIUS tuner, enabling you to enjoy the most popular programming among both services. The "Best of" packages are not available to SIRIUS or XM Canada subscribers at this time.

Family friendly packages are also available to restrict channels featuring content that may be inappropriate for children.

To subscribe to XM, U.S. customers should visit *www.xmradio.com* or call 1-800-XMRADIO (1-800-967-2346); Canadian customers should visit *www.xmradio.ca* or call XM Listener Care at 1-877-GETXMSR (1-877-438-9677).

To subscribe to SIRIUS, U.S. and Canadian customers can call 1-888-539-SIRI (1-888-539-7474) or visit *www.sirius.com* (US) or *www.siriuscanada.ca* (Canada).

FM

Connecting an aerial
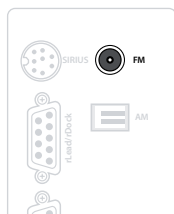
A suitable FM aerial must be connected to the AVR500/ AVR600 before FM radio can be received.

In strong signal areas, the FM ribbon aerial supplied can be used with reasonable results. Mount this as high up as possible on a wall with the top of the 'T'-elements positioned vertically or horizontally, depending on the reception in your area. Try each usable wall of the room to see which gives best reception and use tacks or adhesive tape to secure the aerial, but note that no tacks should come into contact with the internal wire of the aerial.

When installed and receiving FM radio, check the signal strength by pressing the front panel or remote control's **INFO** button until the signal indicator is displayed.

In weak signal areas, or for optimal FM radio reception, a roof- or loft-mounted aerial is advised as this will give superior reception.

In some areas, cable radio may be available or, in an apartment building, a distributed aerial system may be installed. In either of these cases you should have sockets in your home marked **FM** or **VHF** (do not use those marked **TV**); these should be connected to the **FM** coaxial connector on the rear of the AVR500/AVR600.

AM

Connecting an aerial
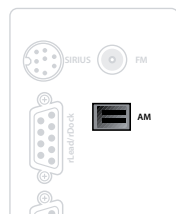
An AM aerial is required to receive AM/medium wave radio signals, so a simple loop aerial is supplied with the AVR500/ AVR600. Follow the assembly instructions in the diagram below.

Make sure that the aerial is positioned well away from the AVR500/AVR600 itself, TVs, computers and other sources of RF 'interference'. Rotate the aerial to discover which position gives the best reception.
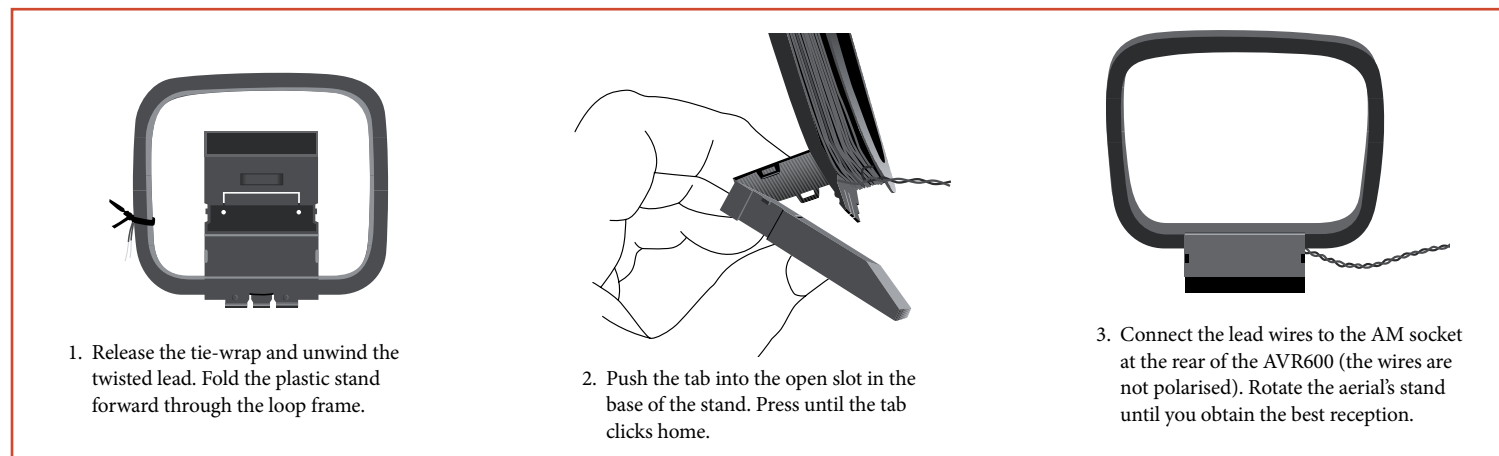
1. Release the tie-wrap and unwind the twisted lead. Fold the plastic stand forward through the loop frame.

2. Push the tab into the open slot in the base of the stand. Press until the tab clicks home.

3. Connect the lead wires to the AM socket at the rear of the AVR600 (the wires are not polarised). Rotate the aerial's stand until you obtain the best reception.

other connectors

Data connectors
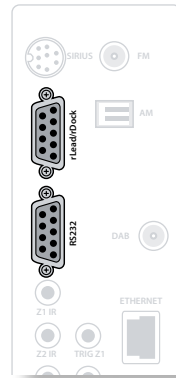
rLead/rDock

For use with an Arcam **rLead** or **rDock** accessory. See page 13 and the accessory documentation for details.

RS232 serial connector

Use with control devices having an RS232 serial port (for example, Crestron and AMX touch screen controllers). This connection is also used for upgrading the AVR500, AVR600 or AV888's internal software.

Network connectors

This section deals with installation of the unit into an existing home network. For information on how to use the units network features, the USB socket, and for a list of supported file types, refer to page 52.

Networking is a large subject and only the briefest guidelines are presented in this handbook. Please contact your Arcam dealer or specialist installer for more information about introducing the AVR500, AVR600 or AV888 into your computer network.

Ethernet

If an Ethernet cable is connected, the unit will automatically attempt to connect to your network.

You should use CAT5 cable plugged into the RJ45 socket labelled **ETHERNET** on the rear panel.
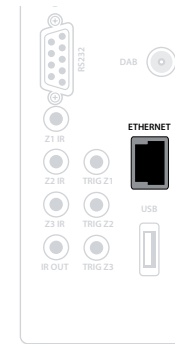
If your network uses static IP addressing rather than DHCP, you will need to provide any gateway, DNS and proxy information. See page 44 for information on setting up the network.

USB connector
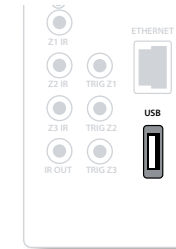
The AVR600 and AV888 (and the AVR500 with the network option fitted) can play files stored on a USB mass storage device, typically a pen drive, but any USB device that complies with the 'mass storage device' class is compatible.

The unit only supports the direct connection of USB devices and will not support devices connected through a hub. If regular access to the **USB** socket is required, you may find it convenient to use a USB extension lead.

See page 46 for details of supported file types.

AVR500
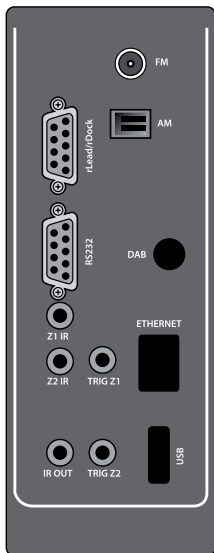
AVR600
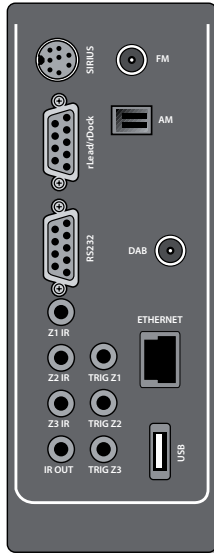
AV888
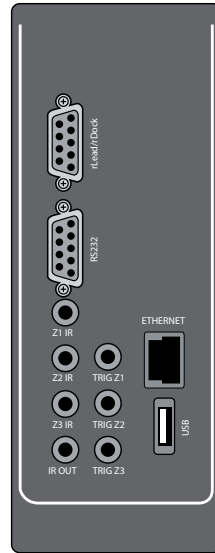
speakers

Connecting speakers
– AVR500 & AVR600

The AVR500/AVR600 allows you to connect up to seven speakers and three active subwoofers in the main system. The output channels correspond to speakers installed in the front left, centre, front right, surround left, surround right, surround back left, surround back right and an active subwoofer.

The configuration and placement of your speakers is very important. All speakers, with the exception of the subwoofer, should be arranged around your normal viewing/listening position. The subwoofer should be placed in a position which gives an even frequency response in all listening positions. Incorrect placement leads to bass boom in some areas. Often the only way to find a good position for your subwoofer is by experimentation. A good place to start experimenting is close to a wall but at least 1m away from any corners. You can also consult your subwoofer handbook for placement suggestions.
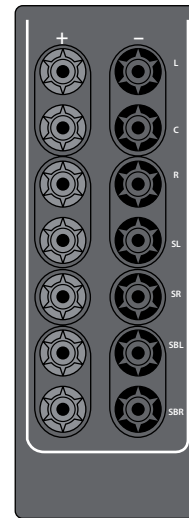
AVR600 **AVR500**

To connect each of the speakers, unscrew the corresponding terminals on the back of the AVR500/AVR600, insert the speaker wires through the hole in each post and screw the terminals back up. Make sure that the red (positive/+) terminal of the speaker is connected to the red (positive/+) terminal on the back panel, and the black (negative/–) terminal of the speaker is connected to the black (negative/–) terminal on the back panel.

It is important that no stray strands of wire from these connections are allowed to touch another cable or the product casing. Failure to ensure this can cause a short circuit and damage your AVR500/AVR600.

Do not over-tighten the loudspeaker terminals, or use a wrench, pliers, etc., as this could damage the terminals and this would not be covered under the product's warranty.

Speaker cables

The speakers should be connected to the amplifier using good-quality, high-purity, low impedance copper cables. Cheap speaker cables should be avoided – they are a false economy and can significantly degrade the sound quality.

The cable runs to the speakers should be as short as practicable. Connections to the speaker terminals should always be finger tight, whether using bare wires or spade connectors.

AVR500

SUBWOOFER OUTPUT
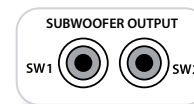
SW1   SW2
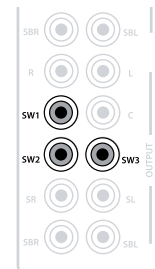
AVR600 **AV888**

Connecting subwoofers

The AVR600 and the AV888 allow up to three active subwoofers to be connected to the **SW1**, **SW2** or **SW3** outputs. The AVR500 has two subwoofer connections.

See your subwoofer handbook for the correct setting up and connection for your particular subwoofer.

Centre

The centre speaker allows for a more realistic reproduction of dialogue. The centre speaker should have a similar tonal balance to the front left and right speakers and be positioned at a similar height.

Subwoofer

A subwoofer will greatly improve the bass performance of your system. This is useful for reproducing special cinema effects, especially where a dedicated LFE (Low Frequency Effects) channel is available, as with many discs encoded with Dolby or DTS technologies.

More than one subwoofer unit may be required for larger installations, particularly in rooms of a timber frame construction. Multiple subwoofers need care in placement because there may be cancellation effects between the units and you may require expert advice.

Front left and right

Position your front left and right speakers to achieve a good stereo image for normal musical reproduction as well as for the multichannel modes. If they are placed too close together there will be a lack of spaciousness; if they are placed too far apart a stereo image will appear to have a large 'hole' in the middle and will be presented in two halves. If there is no practical alternative to placing the speakers widely apart, this effect can be overcome in music reproduction by using the centre sound extraction from the left and right speakers (see Dolby Pro Logic II Music mode).
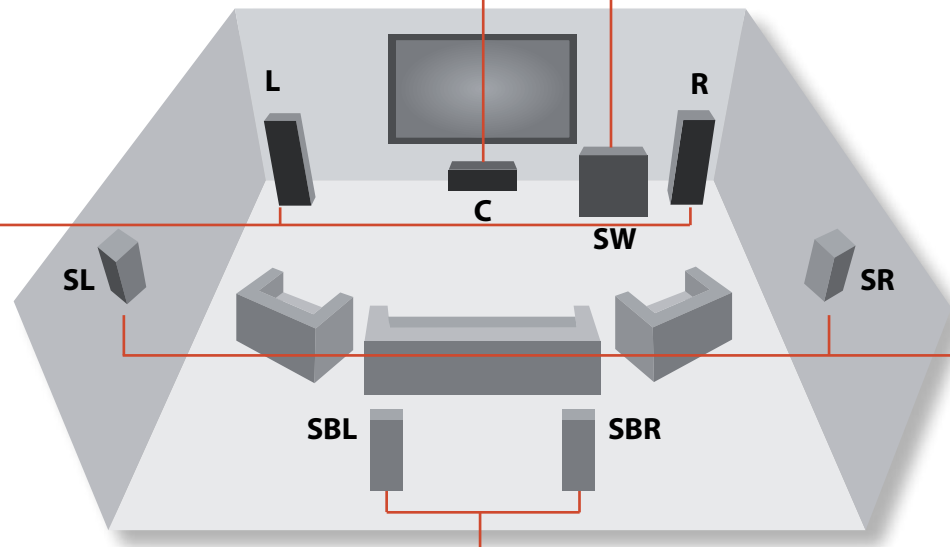
Surround left and right

The surround left and right speakers reproduce the ambient sound and effects present in a multichannel home cinema system and should be installed slightly higher than the listener's ears.

Surround back left and right

The surround back left and right speakers are used to add extra depth and better sound localisation and should be installed approximately one metre higher than the listener's ears. Place the two surround back speakers such that there is an arc of approximately 150 degrees between each surround back speaker and the centre speaker. The surround back speakers should face the front of the room as shown in the diagram to provide the largest 'sweet spot'.

Single surround back centre speaker

It is also possible to use a single surround back speaker positioned centrally behind the listening position instead of two. In this case connect it to the SBL speaker output. Follow the instructions in the 'Spkr Types' section of the Setup Menus for how to configure the AVR500/AVR600/AV888 for this setup.

operation

Operating your AVR500 /AVR600 / AV888

For information display we recommend you use the OSD (On-Screen Display) on your display device whenever possible.

Switching on

Press the front panel power button in. The power LED will glow orange, the front display shows the word 'ARCAM', followed by the volume setting and the name of the selected input. After initialization is complete, the power LED changes colour to green.

Please wait until the unit has finished initialising before operating the unit. It is recommended that if the unit is switched off, you should wait at least 10 seconds before switching the unit back on.

Standby

The unit has a standby mode which can be entered by pressing **STANDBY** on the remote control. When in standby mode, the display is blank and the **POWER** LED glows red.

While in Standby mode, it may be possible to hear a slight residual hum coming from the mains transformer inside the amplifier. This is perfectly normal. However, if the unit is to be left unused for an extended period, we recommend that you disconnect it from the mains supply to save power.

To switch on from standby

Press the **STANDBY** button on the remote control or any key on the front panel (other than the power button).

Front panel display

The unit is ready for use after about four seconds.

The display window shows the currently selected source and the last selected information view setting (this information line can be changed using the **INFO** button).

The active zones (Z1, Z2 or Z3) are highlighted – the example screen above shows that only Z1 (i.e. Zone1) is active. The current volume setting (70.0dB in the above example) is also displayed.

Selecting a source

To select a particular source, press the –**INPUT** or **INPUT** + buttons until that source is shown on the front panel display, or (if available) press the corresponding source button on the remote. The following sources are available:

CD	Compact Disc player input
AV	Audio-Visual input
DVD	DVD player input
SAT	Satellite receiver input
VCR	Video Cassette Recorder input
PVR	Personal Video Recorder input
PHONO[1]	Phono (MM cartridge) input
MCH	Selects MCH (multichannel) analogue input
TAPE	Audio only tape deck input
AUX	Auxiliary (front panel) input
NET[2]	Internal (Ethernet) and external USB solid-state device (e.g. pen drive) input.
IPOD	Requires an iPod® and Arcam **rDock** or **rLead**.

The following sources are only available on the AVR500/AVR600:

AM/FM	Internal tuner input
DAB[3]	Internal tuner input
SIRIUS[3]	Requires an external receiver – see www.sirius.com for more information

[1]This source is not available on the AVR500.

[2]This source is optional on the AVR500. Contact your dealer for upgrade information.

[3]These sources are market dependent and may not be available on your unit.

Upon selecting a source, the unit will normally select an active digital input in preference to an analogue input. If you want to override the digital input and select the analogue input, set the *Audio Source* to **Analogue** in the *Input Config.* menu (see page AM/FM inputs (**PHONO**, **MCH**, **SIRIUS**, **IPOD**) do not have a digital input.

The processing mode and Stereo Direct functions are remembered and recalled for each individual input.

The **MCH** input is intended for direct analogue pass-through of DVD Audio or SACD sources. Apart from volume control and level trim, no processing modes are possible on this input, including bass management and delays. Please set bass management, speaker size and speaker delays in the source player. You can copy the distances and relative speaker levels from the Setup menus in the AVR500, AVR600 or AV888.

Tape operation (AVR600/AV888 only)

Three analogue audio outputs are provided for recording, **VCR**, **PVR** and **TAPE OUT**. The selected analogue input are routed to each of these outputs.

If the VCR input is selected, the **VCR OUT** output is muted to prevent feedback loops in recording equipment. Similarly the **PVR OUT** and **TAPE OUT** outputs are muted when their respective inputs are selected to prevent feedback.

VCR operation (AVR600/AV888 only)

Two outputs are provided for recording (Composite and S-Video only), **VCR** and **PVR OUT**. The selected video input is routed to each of these outputs.

Stereo Direct

To listen to a pure analogue stereo input, press the **DIRECT** button. The Stereo Direct mode automatically bypasses all processing and any surround functions. In direct mode, digital processing is shut down to improve the sound quality and reduces digital noise with the unit to an absolute minimum.

Note: when Stereo Direct mode is selected, no digital output is available and no bass management is performed, meaning that bass signals will not be redirected to a subwoofer.

Volume control

It is important to realise that the level of the volume indicator is not an accurate indication of the power delivered to your loudspeakers. The amplifier often delivers its full output power long before the volume control reaches its maximum position, particularly when listening to heavily recorded music. In comparison, some movie sound tracks can appear very quiet, as many directors like to keep maximum levels in reserve for special effect sequences.

Headphones

To use headphones with the unit, plug the headphones into the PHONES socket in the centre of the front panel.

When headphones are plugged into the front panel PHONES socket, the outputs for Zone 1 are muted and the audio will be down-mixed to two channels (2.0). The two-channel down-mix is required so that the centre channel and surround information can be heard via the headphones.

Using Zone 2 and 3

Zone 2 provides the option for the occupants of the master bedroom, conservatory, kitchen, etc. to view or listen to a different source at a different volume level from the main zone (Zone 1).

Zone 3 (AVR600/AV888 only) provides for a third living space to have a copy of the audio signal in Zone 2 at a different volume level.

Extended front panel menu

Pressing the MENU key and holding it for longer than four seconds will bring up the Extended Menu, allowing you to perform the following:

Restore to factory defaults

This option allows you to restore all settings on your AVR500/AVR600/AV888 to the defaults that it left the factory with. Note that this also erases any secure backups stored on the unit.

**Restore secure backup
Store secure backup**

This option allows you to restore from and store to a PIN-protected copy of your settings. The default PIN is 1234.

Change remote code

The default RC5 system code the unit responds to is 16. If required, for example due to another device in your system also using this RC5 system code, it can be changed to 19.

Software versions

Information on the software version of the unit can be found here.

Updating firmware using a PC

Using a PC application (available on request from Arcam), you can update the firmware in your AVR500/AVR600/AV888 using the back panel RS232 port connected to your PC.

front panel operation

Mode
Selects between Stereo and the available surround modes for the current source.

Info
Selects the information displayed on the lower left portion of the front panel.

OK
Used to enter selections made in the Setup menu. Also forces the analogue and digital video outputs to the default resolution: 480i (525-line NTSC) when pressed for more than 2 seconds.

Direct
Stereo Direct on/off. Provides a direct analogue path from the analogue inputs to the left and right front outputs. Switches off any surround processing modes and shuts down the DSP circuits for best stereo sound quality.

Display
This switches the display brightness between off/dim/bright.

Zone
Selects between Zone 1, Zone 2 and Zone 3 control.

Mute
Mutes all analogue audio outputs in the currently selected zone.

Power / Standby LED
This indicates the status of the AVR500/AVR600/AV888. When first turned on, the LED is orange, to indicate that the unit is 'initialising'; this changes to green when fully powered and ready. Red indicates that the unit is in Standby mode.

Input
These buttons select the source connected to the corresponding input (or internal input)

Unused sources can be prevented from being selected in the setup menu.

Volume
Adjusts the analogue output volume in the selected zone (line out, speakers and headphones).
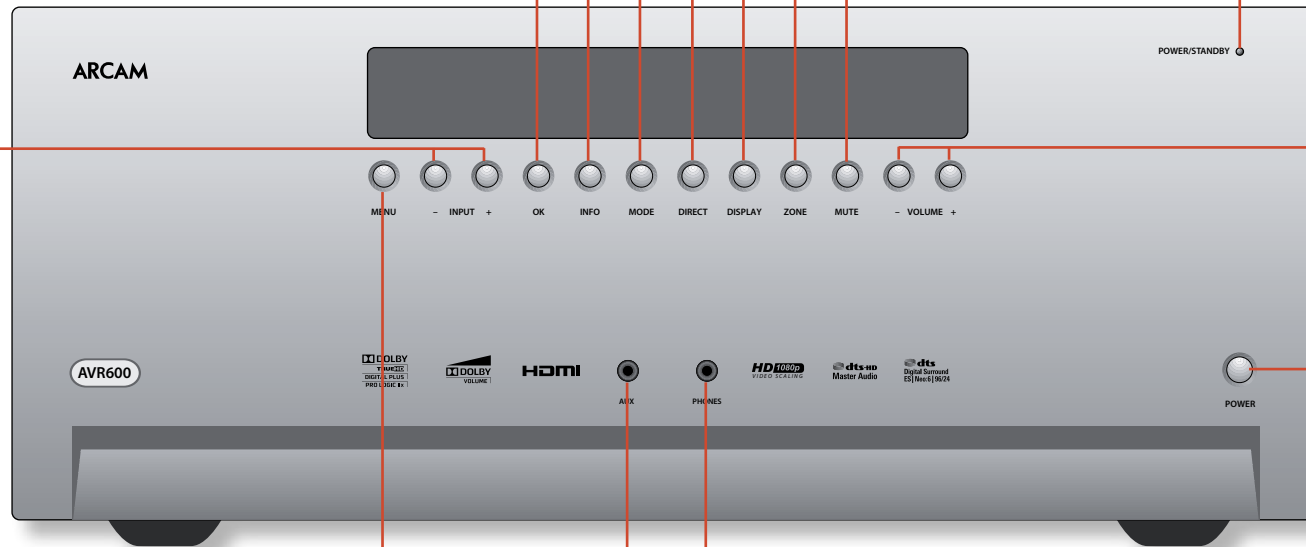
Power
Switches the main power to the AVR500/AVR600/AV888 on and off.

Once the unit is switched off, it should be left for at least ten seconds before switching on again.

Aux
Multi purpose auxiliary line level input, calibration microphone input and 3.5mm optical digital (SPDIF) input.

Phones
This socket accepts headphones with an impedance rating between 32Ω and 600Ω, fitted with a 3.5mm stereo jack plug.

Menu
Selects the Setup menus on the on-screen display (OSD).

Remote control receiver. This is positioned behind the display window, above the **MENU** button on the front panel. Ensure the receiver is in a clear line of sight from the remote control for operation. If this is not possible, use a separate sensor connected to the **Z1 IR** input on the rear panel.

ARCAM

AVR600

MENU   − INPUT +   OK   INFO   MODE   DIRECT   DISPLAY   ZONE   MUTE   − VOLUME +

POWER/STANDBY

HDMI   AUX   PHONES   POWER

remote control

The CR102 universal remote controller

The CR102 is a sophisticated 'universal' backlit remote control that can control up to eight devices. It is pre-programmed for use with the AVR500, AVR600, AV888 and many other Arcam products (FM/DAB tuners, CD players and DVD players).

With its extensive built-in library of codes, it can also be used with thousands of third party audio-visual components – TVs, satellite and set-top boxes, PVRs, CD players, etc. See the list of codes at the back of this handbook, beginning on page 64.

The CR102 is a 'learning' remote, so you can teach it almost any function from an old single-device remote. You can also program the CR102 to issue a sequence of commands ('macros') from a single button press.

Using the remote control

Please keep in mind the following when using the remote control:

■ Ensure there are no obstacles between the remote control and the remote sensor on the front panel. The remote has a range of about 7 metres. (If the remote sensor is obscured, the Z1 IR remote control input jack on the rear panel is available. Please consult your dealer for further information.)

■ Remote operation may become unreliable if strong sunlight or fluorescent light is shining on the remote sensor of the unit.

■ Replace the batteries when you notice a reduction in the operating range of the remote control.

ARCAM
CR102

Inserting batteries into the remote control
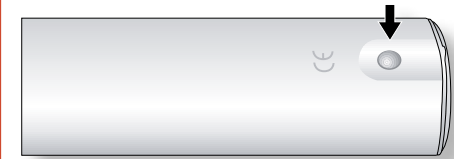
1. Open the battery compartment by pressing the button on the back of the handset.
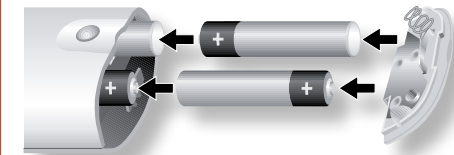
2. Insert four 'AAA' batteries into the battery compartment – two facing the top of the unit, and two facing the end, as in the diagram.

3. Lower the end cap onto the plastic locating plate in the handset. This acts as a hinge, and you can now push the end cap firmly into its locked position with a click.

Notes on batteries:

■ Incorrect use of batteries can result in hazards such as leakage and bursting.

■ Do not mix old and new batteries together.

■ Do not use non-identical batteries together – although they may look similar, different batteries may have different voltages.

■ Ensure the plus (+) and minus (-) ends of each battery match the indications in the battery compartment.

■ Remove batteries from equipment that is not going to be used for a month or more.

■ When disposing of used batteries, please comply with governmental or local regulations that apply in your country or area.

Useful information

Backlight

A blue backlight comes on for five seconds whenever a key is pressed. This helps you use the handset in subdued lighting conditions. It may be possible to hear a quiet tone being emitted from the remote control when the backlight is on. This is perfectly normal.

Power LED blinks

Short blinks indicate a valid key press.

Multiple short blinks convey information (such as a device code) or signal the beginning and successful completion of a programming sequence.

Long blinks indicate an invalid key press or entry.

The symbol '☼' is used in the manual to indicate a power LED blink.

Timeouts and unassigned keys

Time out – After 10 seconds the CR102 exits the programming state and returns to normal operation.

Stuck key timeout – After any key is pressed continuously for 30 seconds, the CR102 stops sending IR transmission to conserve battery life. The CR102 remains off until all keys are released.

Unassigned keys – the CR102 ignores any unassigned key presses for a particular Device Mode and does not transmit IR.

Low voltage indicator

When the batteries are running down, the IR transmit indicator on the CD102 (the LED under the Power button) flashes five times whenever you press a button:

☼ ☼ ☼ ☼ ☼

If this happens, please fit four new AAA alkaline batteries as soon as possible.

Device Mode / Source keys

As the CR102 can control your AVR500, AVR600 or AV888 as well as a range of other equipment, many of the buttons have more than one function depending on the 'device mode' selected on the remote control.

The Device Mode keys (shown below) select the source on the AVR500/AVR600/AV888. If one of these keys is pressed briefly, a command is transmitted to change the source on the unit. Also the functionality of the remote control changes to operate the selected source device. It's like having eight different remotes in your hand!
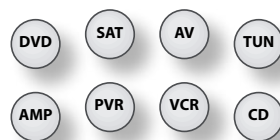
DVD	DVD player
SAT	Satellite set-top box
AV	Audio-visual sound input (use with TV)
TUN	DAB, Sirius, FM or AM tuner
AMP	Controls the amplifier and setup features of the AVR500/AVR600 and AV888
AUX	Auxiliary input, or an iPod® via an Arcam rDock or rLead
PVR	Personal Video Recorder (or Digital Video Recorder)
CD	Compact Disc player

If you press and hold a Device Mode key for about four seconds, you change the Device Mode of the CR102 *without* changing the signal source on the AVR500/AVR600/AV888. This can also be done by pressing (SHIFT) followed by a Device Mode key (within two seconds). These two methods allow you to change which device the CR102 controls without also changing the AVR500/AVR600/AV888 source, allowing uninterrupted listening.

Each Device Mode changes the behaviour of many of the CR102 keys to control the source device appropriately. For example:

In **CD** mode ⏮ plays the previous CD track.

In **AV** mode ⏮ issues the TV 'channel down' command.

The CR102 remains in the last selected Device Mode so it is not necessary to press a Device Mode key before every command key if all you are doing is playing or skipping tracks on a CD, for example.

Navigation keys

The Navigation keys steer the cursor in Setup menus or on-screen menus. They also replicate the navigation functions of original remotes supplied with other home entertainment devices in your system.

(OK) confirms a setting.

Volume control

By default, the CR102 is set up so that the volume control buttons always control the volume of the AVR500/AVR600/AV888, regardless of which Device Mode the remote is currently set for. This is known as volume 'punch through'.

For example, if you are listening to a CD, you will probably have the CR102 in **CD** Device Mode to control the CD player. You can use the volume controls on the remote directly to adjust the volume of the AVR500/AVR600/AV888 without first having to press (AMP) to put the remote into **AMP** Device Mode. The volume buttons 'punch through' the **CD** Device Mode on the remote to the **AMP** Device Mode. Volume 'punch through' can be disabled individually for any Device Mode if desired.

Controlling other devices

Method 1 (Direct code setup)

This section describes the simplest (preferred) way to program the CR102's Device Mode keys to control the non-Arcam devices in your system.

(DVD) (SAT) (AV) (TUN)
(AMP) (PVR) (VCR) (CD)
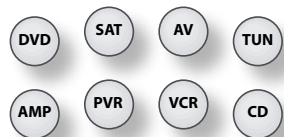
■ Some of the modes are locked to Arcam operation but can be unlocked if required (see page 52).

■ (AMP) mode **only** controls Arcam equipment.

DVD mode	Locked
SAT mode	Unlocked
AV mode	Unlocked
TUN mode	Locked
AUX mode	Locked
VCR mode	Unlocked
CD mode	Locked

Here is a specific example of how to program the (AV) key to control an Addison television. The principles for controlling other devices are exactly the same.

1. Make sure your device is switched on (not just on standby).
2. Find the correct Device Code table (e.g. TV) for the type of device you want to control from the CR102.
3. Find the row containing the codes for the manufacturer of your device (e.g. Addison) (page 58). The most popular code is listed first.
4. Press the appropriate Device Mode key (e.g. (AV)) on the CR102.
5. Press and hold (SHIFT) until the red Power LED blinks twice: ☼ ☼ (It actually blinks once when you press the key, then twice after about three seconds).
6. Enter the first four-digit device code using the number keys. The power key blinks twice: ☼ ☼.
7. Aim the CR102 at the device and press (POWER). If the device switches off, the setup is complete.
8. Turn your device back on and test all the CR102's functions to ensure they are working properly.
9. **Important!** Write your device code down on the right hand side of the page so you can remember it if you ever reset the CR102.

What if I still can't control my device?

■ If your device doesn't respond, repeat the above steps until one of the device codes listed for your brand works.

■ If none of the codes listed for your brand operates your device, or if your brand is not listed at all, try the Library Search Method described in the next section.

Notes:

■ Some codes are quite similar. If your device does not respond or is not functioning properly with one of the codes, try another code listed under your brand.

■ If your device's original remote control does not have a (POWER) key, press (▶) instead of (POWER) when setting up your device.

■ Remember to press the corresponding device key before operating your device.

■ Many TVs do not switch on pressing (POWER). Please try pressing a number key ('channel select') to switch your TV back on.

■ To search for the code for another device follow the instructions above, but press the appropriate device key instead of (AV) during step 2.

Method 2 (Library search)

This section describes another way to program the CR102 to control third-party equipment.

Library Search allows you to scan through all the codes contained in the CR102's memory. It can take a lot longer than the previous method, so only use this method if:

■ Your device does not respond to the CR102 after you have tried all the codes listed for your brand.

■ Your brand is not listed at all in the Device Code tables.

Example: To search for a TV code

1. Switch your TV on (not standby) and aim the CR102 at it.
2. Press (AV) on your CR102.
3. Press and hold (SHIFT) until the power LED blinks twice.
4. Press (9) (9) (1). The power LED key blinks twice: ☼ ☼.
5. Press (POWER).
6. Aim the CR102 at your Television and press (▶▶) repeatedly until your Television turns off.

Every time you press (▶▶) the CR102 sends out a POWER signal from the next code contained in its memory. In the worst case, you may have to press this key up to 150 times, so patience is required! If you skip past a code, step back by pressing (◀◀). Remember to keep pointing the CR102 at your Television while pressing this key.

7. As soon as your television turns off, press (SHIFT) to store the code.

Notes:

■ Many TVs do not switch on by pressing (POWER). Try pressing a number key ('channel select') to switch your TV back on.

■ If you cannot control your Television properly, please continue the Search Method: you may be using the wrong code.

■ To search for the code for another device follow the instructions above, but press the appropriate Device Mode key instead of (AV) during step 2.

■ If your device's original remote control does not have a (STANDBY) key, press (▶) instead during step 5.

Code blink-back

Once you have set up your CR102, you can blink back your device set-up codes for future reference.

Example: To blink back your Television code

1. Press the appropriate Device Mode key (e.g. (AV)) once.
2. Press and hold (SHIFT) until the red Power LED blinks twice ☼ ☼ (It actually blinks once when you press the key, then twice after about three seconds).
3. Press (9) (9) (0). The (POWER) key blinks twice.
4. For the first digit of your four-digit code, press 1 and count all the red blinks. If there are no blinks, the digit is '0'.
5. For the second, third and fourth digits, repeat the previous step, pressing (2), (3), or (4) in order.

Now you have the four-digit code.

Make a note of the codes

Write down the codes for your devices in the boxes below for future reference.

Device	Code
1	
2	
3	
4	
5	
6	
7	
8	

AMP AMP Device Mode

The AMP Device Mode button configures the CR102 to control the AVR500/AVR600/AV888. Pressing this button does not affect the currently selected input on the AVR500/AVR600/AV888.

IMPORTANT: The CR102 must also be in **AMP** Device Mode to control the following sources: **PHONO**, **MCH** (multichannel analogue), **AUX**, **NET** (optional network audio), **USB**, **IPOD** (for use with the optional Arcam rLead or rDock).

However to control the internal Tuner in the AVR500/AVR600 (AM/FM/DAB or Sirius if fitted), the CR102 must first be in **TUN** Device Mode (see later).

The functionality of the CR102 is context sensitive for the internal sources and is described in the following table.

⏻	**Single press** – Toggles AVR500/AVR600/AV888 power between standby and on in the current zone (zone in which the command is received). **Press and hold** – Forces all AVR500/AVR600/AV888 zones into standby, regardless of which zone the command was received in.
0…9	The number keys can be used for source selection (without changing the CR102 Device Mode). Alternatively the Device Mode buttons can also be used with the **SHIFT** key. 0 **SAT** (satellite) input 1 **PHONO** input 2 **AV** input 3 **TUNER** input 4 **DVD** input 5 **TAPE** input 6 **VCR** input 7 **CD** input 8 **AUX** (front panel) input 9 **MCH** (multichannel) input
PHONO (TAPE)	Selects Tape input on the AVR500/AVR600/AV888 **SHIFT** + (TAPE) selects **PHONO** input on the AVR600/AV888
RPT (RND)	(for **IPOD** and **NET** sources)

(SHIFT)	Modifies many keys (see individual key descriptions below).
AUX (MCH)	Selects **MCH** (multichannel) input on the AVR500/AVR600/AV888 **SHIFT** + (MCH) selects **AUX** input on the AVR500/AVR600/AV888
(navigation/OK)	Navigate menus **OK** confirms a setting (equivalent to 'Enter' or 'Select' on some remote controls) Press and hold **OK** to force the analogue and digital video outputs to the default resolution: 480i (525-line NTSC). **SHIFT** + ◀ decreases the picture resolution. **SHIFT** + ▶ increases the picture resolution. **SHIFT** + ▲ turns current zone (in which command is received) on **SHIFT** + ▼ turns current zone (in which command is received) off.
NET (IPOD)	Selects **IPOD** input on the AVR500/AVR500/AVR600/AV888 **SHIFT** + (IPOD) selects network (**NET**) internal input on the AVR500/AVR600/AV888 (where fitted).
(MODE)	Cycles through the available surround and downmix modes.
(MENU)	Displays the AVR500/AVR600/AV888 setup menu on the On Screen Display (see page 34).
(DISP)	Cycles through the front panel display's brightness options
(mute)	Toggles the mute function of the AVR500/AVR600/AV888
⏮ ⏭	(track control for **IPOD** and **NET** sources) **SHIFT** + ⏭ Follow Zone1 source. When the command is received in Zone2 or Zone3, the source for that zone follows whatever input source is selected in Zone1
⊖ ⊕	Decrease (–) and increase (+) AVR500/AVR500/AVR600/AV888 volume
DIRECT ◀◀	Stereo direct on/off. Provides a direct analogue path from the analogue inputs to the left and right front outputs. Switches off any surround processing modes and shuts down the DSP circuits for the best stereo sound quality.

EQ ▶	Displays the room EQ settings menu
EFFECT ⏸	(for **IPOD** and **NET** sources)
BASS ▶▶	Calls up a pop-up (and front screen) to adjust the bass setting for a particular input.
TRIM ⏏	Brings up the speaker trim menu. Use the ▲, ▼, ◀ and ▶ navigation buttons. Press **TRIM** again to exit the speaker trim menu. As this is a temporary adjustment, these additional trim levels are reset to zero when the unit is turned off or put into standby, but are retained if the selected input is changed. These temporary trim levels are independent of the speaker levels found in the setup menu.
SYNC ■	Delays may be introduced into the video signal by video processing which causes a mismatch between the audio and video timing. You will notice this by speech sound being out of synchronization with the lip movements in the video. To compensate for this, you can adjust the lip sync delay. Press the **SYNC** button and use the ◀ and ▶ navigation buttons. Press again to exit the lip sync trim menu.
SUB ⊙	Brings up the subwoofer trim menu. Use the ◀ and ▶ navigation buttons. Press **SUB** again to exit the sub trim menu
TREBLE (SRCH)	Calls up a pop-up (and front screen) to adjust the treble setting for a particular input.
FAV+ (SETUP)	(for **IPOD** and **NET** sources)
FAV- (TITLE)	(for **IPOD** and **NET** sources)
HOME (AUDIO)	(for **IPOD** and **NET** sources)
INFO (SUBT)	Cycles through the information displayed on the lower left portion of the front panel display.

iPod commands

The iPod interface is selected by pressing (POD) in **AMP** Device Mode on the CR102. When connected to an iPod via an optional rLead/rDock, the keys below are used to navigate music files in **AMP** Device Mode.

(navigation/OK)	Navigate the files on screen. **OK** selects/play the highlighted file.
RPT (RND)	Toggles random (shuffle) play of the playlist on and off. **SHIFT** + (RND) cycles through the repeat options
⏮ ⏭	Selects the previous/next track in the current playlist
▶	Begins or resumes playback at the currently highlighted track
⏸	Toggles pause and playback of the current track
■	Stops playback

Network commands

The AVR500 (optional)/AVR600/AV888 Network client is selected by pressing (SHIFT) + (IPOD) in **AMP** Device Mode on the CR102.

When using the network client, the keys below are used to navigate music files in **AMP** Device Mode.

(OK navigation)	Navigate the files and menus on the screen. **OK** selects the highlighted file or enters the highlighted menu on the screen
RPT (RND)	Toggles random ('shuffle') play of the playlist on and off **SHIFT** + (RND) cycles through the repeat options
(◄◄) (►►)	Selects the previous/next track in the current playlist
EQ (►)	Begins or resumes playback at the currently highlighted track
EFFECT (II)	Toggles pause and playback of current track
SYNC (■)	Stops playback
FAV+ (SETUP)	Adds the currently displayed file or radio station to favourites list when using the network client
FAV- (TITLE)	Removes the currently displayed file or radio station from favourites list when using the network client
HOME (AUDIO)	Returns navigation to the top level of the music files structure ('Home')
INFO (SUBT)	Cycles through the information displayed on the lower left portion of the front panel display

(TUN) TUN Device Mode

The (TUN) Device Mode button configures the CR102 to control the tuner functions of the AVR500/AVR600 (the AV888 is not equipped with tuner modules). Pressing this button also selects **TUNER** as the source.

When switching to **TUNER** from a different source, the AVR500/AVR600 enters the last used tuner band, be it AM / FM / DAB (if fitted) / Sirius (if fitted). Further presses of the **TUN** Device Mode button cycle through the available tuner bands.

Further information on the tuner can be found in the 'Tuner Operation' section on page 50.

|	
(power)	(not used)
(0)...(9)	Number keypad used to store and recall presets
(▲) (▼)	Allows selection of previously stored Tuner presets.
(◄) (►)	AM/FM Tuner: allows frequency tuning. DAB/Sirius Tuner (where fitted): scrolls through the channel list.
(OK)	Selects (tunes to) the currently displayed preset, or selects the currently displayed DAB or Sirius channel (or category) when strolling through the channel (or genre) list.
(SETUP)	Page up to the previous 10 presets on screen
(TITLE)	Page down to the next 10 tuner presets on screen
(AUDIO)	Delete the currently highlighted preset.

(DVD) DVD Device Mode

The (DVD) Device Mode button configures the CR102 to control the DVD functions of Arcam DVD players, although this can be changed (see page 30). Pressing this button also selects **DVD** as the AVR500/AVR600/AV888 source.

(power)	Toggles power between standby and on
(0)...(9)	Searches for and plays the track corresponding to the key pressed
PHONO (TAPE)	Selects Tape input on the AVR500/AVR600/AV888. **SHIFT** + (TAPE) selects **PHONO** input on the AVR600/AV888.
RPT (RND)	Toggles random ('shuffle') play on and off. **SHIFT** + (RND) cycles through the repeat options (track, disc, etc)
(SHIFT)	Modifies many keys (see individual key descriptions, below)
AUX (MCH)	Selects multichannel (**MCH**) input on the AVR500/AVR600/AV888. **SHIFT** + (MCH) selects **AUX** input on the AVR500/AVR600/AV888.
NET (IPOD)	Selects **IPOD** input on the AVR500/AVR600/AV888. **SHIFT** + (IPOD) selects network (**NET**) internal input on the AVR500/AVR600/AV888.
(OK navigation)	Navigate setup and DVD programme selection menus. **OK** confirms a setting ('Enter' or 'Select' on some remotes). **SHIFT** + (▲) to switch on from standby **SHIFT** + (▼) to switch to standby from on.
(MODE)	Cycles through available surround sound modes. **SHIFT** + **MODE** changes the HDMI setting.
(MENU)	Activates DVD player menu, if available.
(DISP)	Cycles through the front panel display's brightness options. **SHIFT** + (DISP) enables **RPT A-B** functionality
(mute)	Toggles the mute function. By default this key operates the AVR500/AVR600/AV888 Mute

(◄◄ skip)	Press and release to skip back to the beginning of the current/previous track.
(►►I skip)	Press and release to skip forwards to the beginning of the next track.
(−) (+)	Decrease (−) and increase (+) AVR500/AVR600/AV888 volume
(◄◄)	Fast rewind. **SHIFT** + ◄◄ cycles through slow play backwards speeds
(►)	Starts the playback of a DVD. **SHIFT** + ► cycles through the Angle options on an Arcam DVD player.
(II)	Pauses DVD play-back. Press ► to restart playback. **SHIFT** + II cycles through Zoom options.
(►►)	Fast forward. **SHIFT** + ►► cycles through slow forward speeds
TRIM (▲)	Ejects disc. **SHIFT** + (▲) displays speaker Trim menu on Arcam DVD players.
(■)	Stop playback of a DVD
(●)	Start recording (on products that have this feature).
(SRCH)	Displays Search menu with Title, Track and Time options.
FAV+ (SETUP)	Displays Setup menu. **SHIFT** + **SETUP** displays programming screen on Arcam DVD players
FAV- (TITLE)	Displays Title menu. **SHIFT** + **TITLE** clears bookmark, search and program display entries on Arcam DVD players
HOME (AUDIO)	Changes Audio decode format (Dolby Digital, DTS, etc.). **SHIFT** + (AUDIO) displays the 'Memory' function (Bookmarks)
INFO (SUBT)	Cycles through DVD subtitle language options, if available. **SHIFT** + (SUBT) displays STATUS INFO on Arcam DVD players

(SAT) SAT Device Mode

The (SAT) Device Mode button configures the CR102 to control the functions of a satellite receiver. You will need to configure this Device Mode to work with your equipment. Pressing this button also selects **SAT** as the AVR500/AVR600/AV888 source.

Key	Description
(power)	Toggles power between standby and on
(0)...(9)	Functions as original remote number key.
PHONO (TAPE)	Selects **TAPE** input on the AVR500/AVR600/AV888. **SHIFT** + (TAPE) selects **PHONO** input on the AVR500/AVR600/AV888.
TV/AV (RND)	Toggles between the available inputs on your satellite receiver
(SHIFT)	Modifies many keys (see individual key descriptions, below)
AUX (MCH)	Selects multichannel (**MCH**) input on the AVR500/AVR600/AV888. **SHIFT** + (MCH) selects **AUX** input on the AVR500/AVR600/AV888.
NET (IPOD)	Selects **IPOD** input on the AVR500/AVR600/AV888 **SHIFT** + (IPOD) selects network (**NET**) internal input on the AVR500/AVR600/AV888
(navigation OK)	Navigate menus. **OK** confirms a setting (equivalent to 'Enter' or 'Select' on some remotes).
(MODE)	Controls Backup function, if available.
(MENU)	Performs same function as on original remote, if available.
(DISP)	On some Satellite and Cable set top boxes this key functions as the Guide key to open the EPG (Electronic Program Guide).
(mute)	Toggles the mute function. By default this key operates the AVR500/AVR600/AV888 Mute
(◀◀)	Channel down
(▶▶)	Channel up
(−) (+)	Decrease (−) and increase (+) AVR500/AVR600/AV888 volume
(◀◀)	Fast rewind

Key	Description
(▶)	Starts the playback
(‖)	Toggles pause of playback
(▶▶)	Fast forward
(▲)	(not used)
(■)	Stop playback
(●)	Start recording
(SRCH)	(not used)
(SETUP) (RED)	Duplicates function of **RED** key for some Satellite and Cable set-top boxes
(TITLE) (GREEN)	Duplicates function of **GREEN** key for some Satellite and Cable set-top boxes
(AUDIO) (YELLOW)	Duplicates function of **YELLOW** key for some Satellite and Cable set-top boxes
(SUBT) (BLUE)	Duplicates function of **BLUE** key for some Satellite and Cable set-top boxes

(AV) AV Device Mode

The (AV) Device Mode button configures the CR102 to control the functions of a television or other display device. You will need to configure this Device Mode to work with your equipment. Pressing this button also selects **AV** as the AVR500/AVR600/AV888 source.

Key	Description
(power)	Toggles power between standby and on. (Some TVs require you to use a number key to turn them on.)
(0)...(9)	Functions as original remote number key – usually for channel selection.
PHONO (TAPE)	Selects Tape input on the AVR500/AVR600/AV888. **SHIFT** + (TAPE) selects **PHONO** input on the AVR600/AV888.
TV/AV (RND)	Toggles between the available inputs on your display device (e.g. TV/AV)
(SHIFT)	Modifies many keys (see individual key descriptions, below)
AUX (MCH)	Selects multichannel (**MCH**) input on the AVR500/AVR600/AV888. **SHIFT** + (MCH) selects **AUX** input on the AVR500/AVR600/AV888.
(navigation OK)	Navigate setup and programme selection menus. **OK** confirms a selection (equivalent to 'Enter' or 'Select' on some remotes).
(MODE)	**EXIT** function on some models.
(MENU)	Functions as original remote key, if available.
(DISP)	Display INFO or OSD (On Screen Display) function, if available.
(mute)	Toggles the mute function. By default this key operates the AVR500/AVR600/AV888 Mute
(◀◀)	Channel down
(▶▶)	Channel up
(−) (+)	Decrease (−) and increase (+) AVR500/AVR600/AV888 volume.
(◀◀)	Toggles TEXT page on/off
(▶)	TEXT page off

Key	Description
(‖)	Turns Programme-In-Programme (PIP) on, if available
(▶▶)	Activates PIP move, if available
(▲)	Activates PIP swap, if available
(■)	Activates PIP freeze, if available
(●)	Activates PIP channel up, if available
(SRCH)	Activates PIP channel down, if available
(SETUP) (RED)	Duplicates function of **RED** key for Text TV
(TITLE) (GREEN)	Duplicates function of **GREEN** key for Text TV
(AUDIO) (YELLOW)	Duplicates function of **YELLOW** key for Text TV
(SUBT) (BLUE)	Duplicates function of **BLUE** key for Text TV

PVR PVR Device Mode

The PVR Device Mode button configures the CR102 to control the functions of a video recorder or similar device. You will need to configure this Device Mode to work with your equipment. Pressing this button also selects **PVR** as the AVR500/AVR600/AV888 source.

Button	Function
⏻	Toggles power between standby and on.
0...9	Functions as original remote number key.
PHONO TAPE	Selects Tape input on AVR500/AVR600/AV888. **SHIFT** + TAPE selects **PHONO** input on the AVR600/AV888.
TV/AV RND	Toggles between available inputs (e.g. AV1, AV2)
SHIFT	Modifies many keys (see individual key descriptions, below)
AUX MCH	Selects multichannel (**MCH**) input on AVR500/AVR600/AV888. **SHIFT** + MCH selects **AUX** input on the AVR500/AVR600/AV888.
NET IPOD	Selects **IPOD** input on AVR500/AVR600/AV888. **SHIFT** + IPOD selects network (**NET**) internal input on the AVR500/AVR600/AV888.
◀ OK ▶ (navigation)	Navigate setup and programme selection menus. **OK** is equivalent to 'Enter' or 'Select' on some remotes.
MODE	Operates the Exit function if the PVR uses this feature
MENU	Turns on the Menu function if the PVR uses this feature
DISP	Toggles display between TV and PVR
🔇	Toggles the mute function. By default this key operates the AMP Mute
⏮	Channel down
⏭	Channel up
− +	Decrease (−) and increase (+) AVR500/AVR600/AV888 volume
⏪	Fast rewind

Button	Function
▶	Play
⏸	Toggles pause of playback
⏩	Fast forward
⏏	Operates the Favourites function if the PVR uses this feature.
⏹	Stop playback
⏺	Starts recording
SRCH	(not used)
SETUP (RED)	Duplicates function of **RED** key (if used)
TITLE (GREEN)	Duplicates function of **GREEN** key (if used)
AUDIO (YELLOW)	Duplicates function of **YELLOW** key (if used)
SUBT (BLUE)	Duplicates function of **BLUE** key (if used).

VCR VCR Device Mode

The VCR Device Mode button configures the CR102 to control the functions of a video recorder or similar device. You will need to configure this Device Mode to work with your equipment. Pressing this button also selects **VCR** as the AVR500/AVR600/AV888 source.

Button	Function
⏻	Toggles power between standby and on.
0...9	Functions as original remote number key.
PHONO TAPE	Selects Tape input on AVR500/AVR600/AV888. **SHIFT** + TAPE selects **PHONO** input on the AVR600/AV888.
TV/AV RND	Toggles between available inputs (e.g. AV1, AV2)
SHIFT	Modifies many keys (see individual key descriptions, below)
AUX MCH	Selects multichannel (**MCH**) input on AVR500/AVR600/AV888. **SHIFT** + MCH selects **AUX** input on the AVR500/AVR600/AV888.
NET IPOD	Selects **IPOD** input on AVR500/AVR600/AV888. **SHIFT** + IPOD selects network (**NET**) internal input on the AVR500/AVR600/AV888.
◀ OK ▶ (navigation)	Navigate setup and programme selection menus. **OK** is equivalent to 'Enter' or 'Select' on some remotes.
MODE	Operates the Exit function if the VCR uses this feature
MENU	Turns on the Menu function if the VCR uses this feature
DISP	Toggles display between TV and VCR
🔇	Toggles the mute function, if available. By default this key operates the AMP Mute
⏮	Channel down
⏭	Channel up
− +	Decrease (−) and increase (+) AVR500/AVR600/AV888 volume
⏪	Fast rewind

Button	Function
▶	Play
⏸	Toggles pause of playback
⏩	Fast forward
⏏	Ejects tape
⏹	Stop playback
⏺	Starts recording
SRCH	(not used)
SETUP (RED)	Duplicates function of **RED** key (if used)
TITLE (GREEN)	Duplicates function of **GREEN** key (if used)
AUDIO (YELLOW)	Duplicates function of **YELLOW** key (if used)
SUBT (BLUE)	Duplicates function of **BLUE** key (if used).

ⓒⒹ CD Device Mode

The ⓒⒹ Device Mode button configures the CR102 to control the CD functions of Arcam CD players, although this can be changed (see page 25). Pressing this button also selects **CD** as the AVR500/AVR600/AV888 source.

⏻	Toggles power between standby and on.
⓪…⑨	Functions as original remote number key.
PHONO ⓉⒶⓅⒺ	Selects **TAPE** input on the AVR500/AVR600/AV888. **SHIFT** + ⓉⒶⓅⒺ selects **PHONO** input on the AVR600/AV888.
RPT ⓡⓝⓓ	Toggles random ('shuffle') play on and off. **SHIFT** + ⓡⓝⓓ cycles through the repeat options (track, disc, etc.).
ⓢⓗⓘⓕⓣ	Modifies many keys (see individual key descriptions, below)
AUX ⓜⓒⓗ	Selects multichannel (**MCH**) input on AVR500/AVR600/AV888. **SHIFT** + ⓜⓒⓗ selects **AUX** input on the AVR500/AVR600/AV888.
NET ⓘⓟⓞⓓ	Selects **IPOD** input on AVR500/AVR600/AV888. **SHIFT** + ⓘⓟⓞⓓ selects network (**NET**) internal input on the AVR500/AVR600/AV888.
◄ OK ►	Navigates track listings if supported by the player. **OK** selects the currently highlighted track if supported by the player
ⓜⓞⓓⓔ	Changes the time display modes on Arcam CD player
ⓜⓔⓝⓤ	(not used)
ⓓⓘⓢⓟ	Cycles through the front panel display's brightness options. **SHIFT** + ⓓⓘⓢⓟ enables **RPT A-B** functionality if supported by the player.
🔇	Toggles the mute function. By default this key operates the AVR500/AVR600/AV888 Mute.

⏮	Press and release to skip back to the beginning of the current/previous track.
⏭	Press and release to skip forwards to the beginning of the next track.
⊖ ⊕	Decrease (–) and increase (+) AVR500/AVR600/AV888 volume.
⏪	Fast rewind
▶	Play
⏸	Toggles pause of playback
⏩	Fast forward
⏏	Open/close disc tray
⏹	Stop playback
⏺	Start recording (on products that have this feature)
ⓈⓡⒸⒽ	Scans first 10 seconds of each track on CD, if supported by the player (Audio search)
FAV+ ⓢⓔⓣⓤⓟ	Starts Program mode
FAV- ⓣⓘⓣⓛⓔ	Clears programmed item
HOME ⓐⓤⓓⓘⓞ	(not used)
INFO ⓢⓤⓑⓣ	(not used)

E-35

essential setup

Before you use your AVR500, AVR600 or AV888 it is essential that you enter some information about your system configuration into the Setup menus.

Many of the inputs have several different connection types available, for example, HDMI or component video; HDMI, digital or analogue audio. It is necessary to set the connection type used for each input by setting the *Video Source* and *Audio Source* options in the *Input Config.* menu (see page 41). These options must be set for each input.

The default for both audio and video sources is HDMI. If another connection type is used, there will be no sound or picture from the source until the *Video Source* and *Audio Source* menu items are correctly set.

It is essential that you enter some information into the Setup menus about your speaker configuration. This allows the unit to process any surround sound digital source to exactly match your system and give you the ultimate surround sound experience.

There are three pieces of vital information which are outlined in the sections: 'Speaker Types', 'Speaker Distances' and 'Speaker Levels'.

The way you enter this information manually into the unit is given later in the 'Setup Menus' section on page 38. The settings can also be established automatically using the Arcam Auto Speaker Setup function. However it is important to understand why these speaker settings must be entered, which is why this section is presented first.

Speaker types

You need to set the type of speakers that you have connected to your AVR500/AVR600 (or connected indirectly to your AV888):

Large	capable of full frequency range reproduction
Small	not capable of full frequency range reproduction at the low frequency end
None	speaker not present in your configuration

The terms 'Large' and 'Small' do not necessarily relate to the physical size of your speakers. As a rule of thumb, if a speaker cannot reproduce a flat frequency response down to about 40Hz (and very few can!) it is often better to consider them as 'Small' for setup purposes of home cinema.

When a speaker is set to 'Small', very low frequency sounds are redirected away from that speaker to a 'Large' speaker or a subwoofer, which are far better suited to reproducing these low frequency sounds.

Note that it is not possible to set all speakers to 'Small' unless there is a subwoofer in your speaker configuration. If you do not have a subwoofer, you will be forced to set your front speakers to 'Large'.

(Advanced users may wish to automatically override the 'Small' speaker setting for purely stereo music listening when not watching movies. This can be achieved in the 'Input Config.' menu – see page 40.)

Single Surround Back speaker
If you have just one Surround Back speaker in your configuration instead of two, ensure it is connected to the SBL speaker connector and set Surr. Back L/R in the Spkr Types menu to either '1 Small' or '1 Large' as appropriate.

Crossover frequency
If you have set any speakers as being Small, then you will be required to set a value for the crossover frequency. This is the frequency below which signals are filtered away from these Small speakers and redirected to Large speakers or the subwoofer (if present). A frequency of 80Hz is often a good starting point, however you will probably have to experiment with different values to find the best value for your system or consult your speaker handbook.

MCH sub level
If a subwoofer is present, this setting allows for a 10dB compensation on the subwoofer output when using the MCH input as required by many DVD-A players with audio outputs.

Use Surround Back channels
If not used in the main zone, it is possible to assign the Surround Back channels to bi-amp the Front Left/Right channels or to provide an amplified output to Zone 2.

Speaker Distances

It is essential for the distance from each speaker to the listening position to be accurately measured and entered into the 'Setup' menu. This ensures that the sounds from the various speakers arrive at the listening position at the correct time to recreate a realistic surround effect. The distance can be entered in centimetres or inches.

Speaker Levels

Finally the levels of all the speakers in the system need to be adjusted to match each other at the listening position, again to create a proper surround effect. To help with this the AVR500, AVR600 or AV888 can generate a test noise for each speaker which should be measured with a sound pressure level (SPL) meter. The meter should be set to 'C' weighting and slow response. The level of noise measured at the listening position from each speaker should be adjusted on the Speaker Trims page of the Setup menu so that the meter reads 75dB SPL. It does not matter what the system volume setting of the AVR500, AVR600 or AV888 is before turning the test noise on as the volume setting is over-ridden for the duration of the speaker noise test.

There are several basic SPL meters on the market at reasonable prices aimed at home cinema enthusiasts. Check your local technology store, search online or ask your dealer.

If you do not have an SPL meter, you can try to adjust the noise level of each speaker by ear. In this case it is not possible to adjust the speakers to the absolute 75dB SPL volume level, but you should aim for all speakers sounding equally loud. Setting speaker test noise levels by ear is not recommended as it is very difficult to do accurately, but is often better than doing nothing at all!

Auto speaker setup

There is a proprietary automatic loudspeaker setup function built into your AVR500, AVR600 or AV888. The Arcam Auto Speaker Setup function attempts to set all the essential speaker settings for all the speakers in your system. It also calculates room equalisation (Room EQ) filter values to remove some of the worst effects of resonant frequencies in the listening room.

Your AVR500/AVR600/AV888 package is supplied with a calibration microphone, which should be inserted into the AUX jack socket on the front panel and positioned at the main listening position. This microphone picks up the special calibration tones generated by the speakers when Auto Speaker Setup is run. The AVR500/AVR600/AV888 then analyses the signal and computes:

- which speakers are present,
- speaker type,
- speaker distance,
- speaker level,
- crossover frequency to the subwoofer (or large front speakers if no subwoofer is present),
- problem resonant frequencies in the room which need control by filtering.

It also warns if any of the speakers are too close to the microphone or if the measured tone is clipped.

To help the system be as accurate as possible when performing Auto Speaker Setup, there are a few guidance rules that should be followed:

- Minimise any background sounds in the listening room and other nearby rooms.
- Close all windows and doors in the listening room.
- Turn off all fans including air-conditioning systems.
- If holding the microphone in the hand rather than mounting on a tripod or similar, keep your hand and fingers still to avoid generating 'handling noise'.
- Position the set up microphone pointing upwards at roughly head height in the normal listening position. It is not necessary to point the microphone directly at the speaker generating the test tone. (It helps if you are able to position the microphone exactly where your head would normally be for listening, with the microphone in direct unobstructed view of all speakers.)
- If your system includes an active subwoofer, start by setting its output level / gain control to a value halfway between maximum and minimum.

When activated, a calibration tone is played through each channel in turn, including the subwoofer channel. The calibration tone cycles round each of the speakers twice. If you do not have a full 7.1 speaker configuration there will be periods of silence between some speaker channels. Follow the 'progress' information on-screen.

After all the channels have been measured, a summary of the speaker configuration will be displayed on-screen. You can then choose to accept the settings, re-measure your system again or cancel Auto Speaker Setup without storing the settings.

The Auto Speaker Setup function is found within the Setup menus, see page 37. **By default, Room EQ is not applied to any of the source inputs**. You should enable Room EQ on inputs you think benefit from this feature, as required, by listening when playing typical source material through each input. This is enabled from within the Input Config menu.

While room equalisation can help to reduce problems with listening room acoustics, it is usually far better to try to solve these problems with the room directly. Proper loudspeaker positioning, acoustic wall treatments and moving the listening position away from walls should produce far better results overall. However it may be difficult to do this in a home environment, so Room EQ is your next best choice.

Problems

We advise you to look over the reported measurements on the screen following Auto Speaker Setup for any obviously incorrect results, in particular to ensure the reported speakers match your configuration and that the speaker distances to the listening position appear look roughly correct. If the results are not what you expected re-run Auto Speaker Setup.

The Auto Speaker Setup function is normally quite accurate but occasionally false results can be generated. Problems may be as a result of:

- external sounds or rumbling / handling noises picked up by the microphone
- sound reflections off hard surfaces (e.g. windows or walls) close to the listening position,
- very strong acoustic resonances within the room.

If you are still experiencing difficulties or you wish to have the most accurate results for ultimate surround performance, we recommend using the manual method of establishing speaker distances and levels.

Using a subwoofer

If your system includes an active subwoofer you may need to re-run Auto Speaker Setup with the subwoofer output level / gain control set to a higher or lower value, if the summary screen reports problems setting the subwoofer up.

Auto Speaker Setup will attempt to choose a crossover frequency that allows the smoothest low frequency transition from the main speakers to the subwoofer. However if this does not produce pleasing results we recommend manually trying other crossover frequencies to find something more to your preference.

See the next sections for information of how to enter or change speaker settings manually.

setup menus

The Setup menus allow you to configure all aspects of your AVR500, AVR600 or AV888. The next few pages will go through the menu items and explain their function. The Setup menus will probably look quite daunting if you are new to setting up home cinema, but the majority of them need only be configured once when you first install the system (or if your system changes or you move house!)

The only way to view the Setup menus is on your display device (TV or projector) using the on-screen display (OSD) capability of the unit. To view the OSD for the initial setting up, connect any of the video outputs to your display device. You do not need to have a video source connected to the video inputs.

Entering Setup mode

To enter the setup menu, press the **MENU** button on the remote control or font panel. The front panel display shows 'MENU' and the setup menu (pictured right) is displayed.

Unstable OSD menu or picture display?

The default AVR500/AVR600/AV888 output video resolution when first powered up out of the box is 525-line/60Hz NTSC for analogue video and 480i/60 for digital video. This has been chosen as most display devices can synchronise to this automatically. This can be changed in the Video Outputs section of the Setup Menus.

If the output resolution and frame rate is forced to a setting your display device does not support, the picture may become unstable or may not display at all. To reset the output video resolution and frame rate to the default values to restore the display, press and hold the **OK** button for three seconds.

Menu panel

The left-hand panel lists the setup screens available for adjustment. The selected menu is highlighted with a grey band.

Adjustment panel

The upper right-hand panel lists the parameters you can change as a user. The selected line is highlighted with a black band. Lines that cannot be selected are greyed-out.

Input Config	Audio Input	: DVD
General Setup	Incoming Format	: Dolby Digital
Auto Setup	Incoming Sample Rate	: 48KHz Out : 48KHz
Spkr Types	Incoming bitrate	: 192kbps
Spkr Distance	Dialnorm	: -31dB
Spkr Levels	Video Input	: DVD
Video Inputs	Audio Compression	: Off
Video Outputs	Balance	0dB
Mode	Bass	0dB
Zone Settings		
Network	Adjust to compensate for an off-centre listening position.	

Scroll bars

These indicate the position of the displayed screen within longer menus.

Help screen

The lower right-hand panel gives a short help text for the feature being adjusted.

Navigating the setup menu

… using the remote control

The setup menu can be navigated by using the cursor (arrow) keys on the remote control. This is by far the easiest method.

1. To enter the setup menu, press the **MENU** button (which is located immediately under the navigation buttons).
2. Use the ⬆ and ⬇ keys to navigate up and down the main section headings in the left-hand panel.
3. Once you have the main section that you require highlighted, use the ▶ key to enter the section.
4. Use the ⬆ and ⬇ keys to navigate up and down the section settings in the left-hand panel. Some settings may be greyed out. These are either for information only (e.g. incoming sampling frequency) or are not currently selectable (e.g. network IP address when DHCP is used). Scroll bars on the sides of the right hand panel indicate your position in the settings list where there are more items than can be displayed at once.
5. Pressing **OK** selects a setting to change it, pressing **OK** again de-selects the setting.
6. At any time, press the **MENU** button to exit the menu. Any changes to settings are saved.

… using the keys on the front panel

The front panel controls can be used to configure the unit. Follow the instructions for using the remote control, in this case using **INPUT–** for down, **INPUT+** for up, **INFO** for left and **MODE** for right.

video & audio connection settings

Each input on the AVR500/AVR600/AV888 has multiple connection possibilities for both audio and video, including HDMI, Component Video, digital audio and analogue audio. When an input is selected, by default the AVR500/AVR600/AV888 will select HDMI for both video and audio connections.

Set the *Audio Source* and *Video Source* to the connection type you are using: HDMI, Component, S-Video or Composite for video and HDMI, Digital or Analogue for audio.

Entering Setup mode

Before entering the menu, select the input that you wish to change (e.g. **DVD**). To enter the setup menu, press the **AMP** button followed by the **MENU** button on the remote control. The front panel display shows 'MENU' and the setup menu (pictured right) is displayed. Press the remote control ⊳ key to enter the **Input Config** menu then use the ⊽ key to navigate down to the *Video Source* option.

Selecting the video source

Once the *Video Source* option is highlighted as shown, press the **OK** key to select it for modification. Use the ⊼ and ⊽ keys to select from the list the video type you are using on this source.

- ■ **HDMI**: the unit is forced to use the HDMI video input for this source.
- ■ **Component**: the unit is forced to use the Component/RGB video input for this source.
- ■ **S-Video**: the unit is forced to use the S-Video input for this source.
- ■ **Composite**: the unit is forced to use the Composite video input for this source.

Selecting the audio source

Highlight the *Audio Source* as shown and press the **OK** key to select it for modification. Use the ⊼ and ⊽ keys to select from the list the audio type you are using on this source. **NOTE:** you may experience some audio transients when changing this setting. **As a precaution, we recommend that you reduce the volume level first**.

- ■ **HDMI**: the unit is forced to use the HDMI audio input for this source.
- ■ **Digital**: the unit is forced to use the optical (**TOSLINK**) or coaxial (**S/PDIF**) digital audio input for this source
- ■ **Analogue**: the unit is forced to use the analogue audio input for this source.

| Input Config |
| General Setup |
| Auto Setup |
| Spkr Types |
| Spkr Distance |
| Spkr Levels |
| Video Inputs |
| Video Outputs |
| Mode |
| Zone Settings |
| Network |

| Colour |
| Picture Mode |
| Edge Enhancement |
| Mosquito NR |
| Noise Reduction |
| Block NR |
| Component Mode |
| Video Source |
| Audio Source |

HDMI
> Component
S-Video
Composite

Select the type of video: HDMI, Component, S-Video or Composite

| Input Config |
| General Setup |
| Auto Setup |
| Spkr Types |
| Spkr Distance |
| Spkr Levels |
| Video Inputs |
| Video Outputs |
| Mode |
| Zone Settings |
| Network |

| Colour |
| Picture Mode |
| Edge Enhancement |
| Mosquito NR |
| Noise Reduction |
| Block NR |
| Component Mode |
| Video Source |
| Audio Source |

HDMI
> Digital
Analogue

Select the type of audio: HDMI, Digital or Analogue
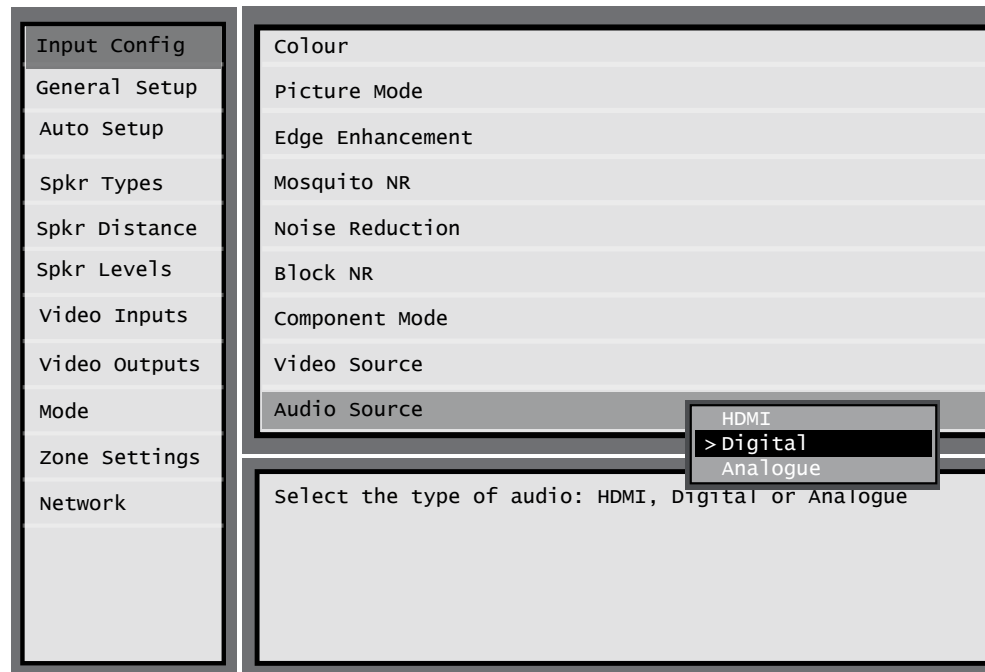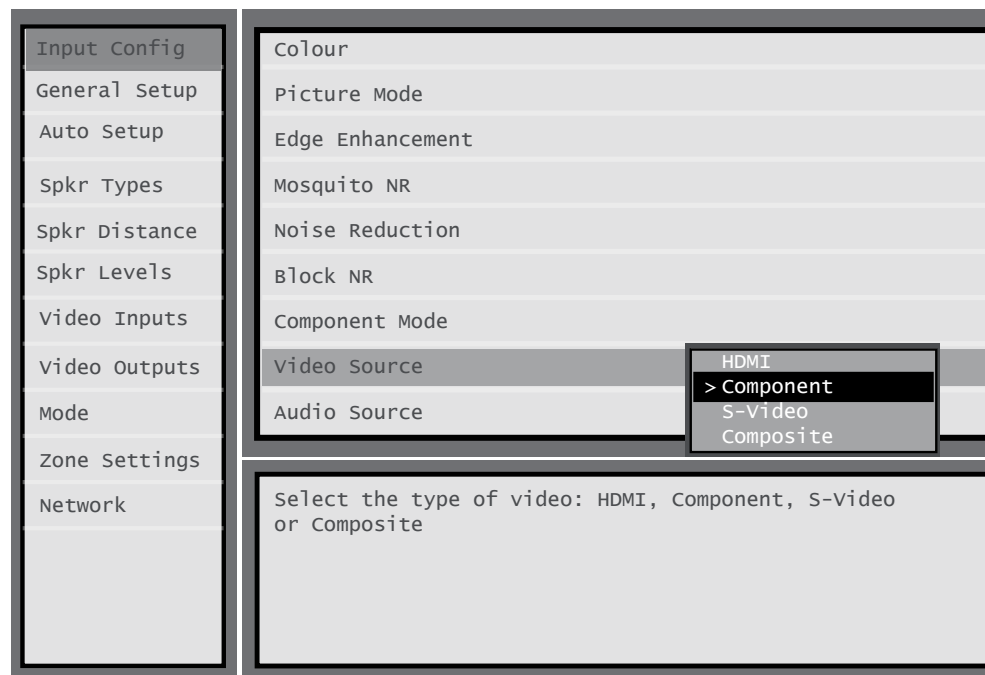
Input Config.

The audio and video settings on this page of the Setup menu can be tailored *specifically and independently to the currently selected input*.

When a different input is selected on the Input line, all the input-specific settings for that input are displayed below it. These settings are applied to the named Input only and are stored in memory and recalled each time the unit is powered up and whenever that input is selected.

Input – The currently selected input connectors to which the settings below relate.

Name – The display name of the input. You can change the name of any input to more closely match your setup. For example, if you had two satellite receivers, you could connect the main receiver to the Sat audio and video input connectors and change the Name to 'SAT 1'. You could then connect the second satellite receiver to the VCR audio and video input connectors, but change the VCR Name to 'SAT 2'. It is then clearer to users of your AVR500/AVR600/AV888 which inputs they wish to select when scrolling though.

Lip Sync – Each input can have its own setting to add a time delay between the audio and video signals to compensate for the sound and picture not being synchronised. This is normally required when video processing is used in the system for scaling or de-interlacing video. The range of lip sync delay is –5 to +220 milliseconds.

The lip sync adjustment can only correct for delayed video. If the audio is late set lip sync to its minimum.

Mode – Sets the initial audio decode mode for stereo sources on this input.

- Last Mode recalls the last used setting for this input when a stereo source was applied. See section 'Multichannel source modes' on page 41 for more information.

Ext. Mode – Sets the initial audio decode mode for multichannel digital sources on this input.

- Last Mode recalls the last used setting for this input when a stereo source was applied. See section 'Multichannel source modes' on page 41 for more information.

Treble –
Bass –

These allow you to alter the bass and treble tone controls for all currently active speakers for each individual

input. For example, if your PVR source sounds a little bass light, you can always correct for this by selecting PVR on the Input line at the top of this menu and add 2 or 3dB to the Bass control. Then, whenever the PVR input is selected, the bass is automatically boosted for as long as that input is selected.

Room EQ – When the Auto Speaker Setup function is run it also calculates Room Equalisation coefficients to remove some of the worst effects of resonant frequencies of the room at the listening position. By default Room EQ is not applied to any of the source inputs, however you can enable them on a per-input basis as you wish.

- **Not Calculated:** (Information only) Auto Speaker Setup has not been run or has errors so cannot be selected.
- **On:** Room EQ is applied to the current source.
- **Off:** Room EQ is not applied to the current source.

Input Trim – Sets the maximum analogue input signal level (sensitivity) on this input before the ADC (Analogue-to-Digital converter) signal path clips. Options are 0.5, 1, 2 and 4 volts RMS maximum input. The default is 2Vrms maximum.

For example, analogue sources with low output levels may benefit by choosing the 1V maximum setting, or the 0.5V maximum setting if the source has a very low output. This helps maximise signal-to-noise performance of the unit and also helps keep the various analogue sources sounding about the same level for any given volume control setting.

Dolby Volume –Dolby Volume is an intelligent system that improves the perceived audio frequency response at lower listening levels and corrects for volume inconsistencies between sources (e.g. a rock radio station and a DVD) and between programming (e.g. a TV show and advertisement breaks).

- **Off:** (default) Dolby Volume is not applied to this input.
- **Cinema:** enables Dolby Volume for this source and configures the input for audio which comes mostly from movie soundtracks.
- **Music:** enables Dolby Volume for this source and configures the input for audio which comes from other sources (CD, TV, Satellite, Tuner, etc.).

Dolby Leveller – This setting of Dolby Volume controls how closely quiet and loud sources and programme content are matched to each other, based on the ear's perception of loudness. The range of values is 0 (minimal levelling) to 10 (maximum levelling). The default setting is 9, however we recommend

experimenting with lower values if all your source material is more closely matched in level. If the Volume Leveller function is set off, no level matching between sources and programme material is performed. Note however that turning the Dolby Leveller setting of Dolby Volume to 'Off' is not the same as turning the entire function of Dolby Volume to 'Off', as volume related frequency response processing is still active. See Dolby Volume on page 48 for more information.

DV Calib. Offset – The Calibration Offset parameter of Dolby Volume allows you to compensate for speaker efficiencies and listening position. The default value is 0 and this should normally produce a good result when the speaker levels of the AVR600 (or AV888 and amplifier combination) are set using a sound pressure level meter.

See the Dolby Volume section on page 48 for further information on Calibration Offset.

Surround EX – Sets how the unit should configure its decode mode when a Dolby Digital EX bitstream is received. Note that this setting only applies if you have Surround Back loudspeakers. You may wish to experiment with these two decode modes to see which you prefer with Dolby Digital EX encoded material. Options are Auto DD EX, Auto PLIIx and Manual.

- **Auto DD EX**: When a Dolby Digital EX-flagged bitstream is detected, the decode mode automatically changes to Dolby Digital EX. This can be temporarily overridden by pressing the MODE button on the remote or front panel.
- **Auto PLIIx**: When a Dolby Digital EX-flagged bitstream is detected, the decode mode automatically changes to Pro Logic IIx Movie. This can be temporarily overridden by pressing the MODE button on the remote or front panel.
- **Manual**: The received Dolby Digital EX is treated as if it is an ordinary Dolby Digital stream in that it does not automatically select the EX or PLIIx decode modes. Instead, the previously used decode mode for a multichannel digital source on this input is applied. However, either of the EX or PLIIx decode modes can be applied manually by pressing the MODE button.

Stereo Mode – If you have configured your system to have a subwoofer, then you have the flexibility to choose how bass information is distributed between the front left/right speakers and the subwoofer when listening to stereo (two channel only) analogue and digital sources. Choose the option which gives you the most solid, even sounding bass. If you are using

a subwoofer for stereo, please also see Sub Stereo below to set the level of the subwoofer. For best results test with a set-up disc or live programme material. This setting can be used to override your normal speaker settings in the Spkr Types menu whenever the unit plays stereo material. It is quite common to find that two channel stereo music listening is best done with a slightly different sub/speaker setting than for surround movies.

- **As Spkr Types**: When an analogue or digital stereo source is played, your normal speaker configuration (as in **Spkr Types** menu) is used to reproduce the signal.
- **Left/Right**: Full frequency stereo information. All audio is sent to the front left and right speakers only without any bass redirection. You can use this setting if you consider your front left/right speakers to be able to handle the full frequency range of music. If you have set your front left/right speaker size as Small in the Spkr Types setup page, you may wish to use this option to override the setting to Large for stereo music listening, if you have full frequency range left/right speakers.
  It can often be beneficial to set full frequency range speakers to Small in the Spkr Types setup page for use with movies, if you have a subwoofer in your system. Doing so may deliver more impact on movie soundtracks as subwoofers are designed to handle reproduction of high bass content. However you may find that for stereo music a better overall result is obtained by not using the subwoofer and effectively treating the front left/right speakers as Large.
- **Left/Right+Sub**: Full frequency range stereo is fed to the front left and right speakers and extracted bass is sent to the subwoofer. In this case the low frequency information is effectively duplicated.
- **Sat+Sub**: Use this setting if you really do have Small satellite front left and right speakers, or if you prefer the overall sound of bass being handled by the subwoofer. Full bass management is used so that analogue and digital stereo sources are fed to the DSP where the bass is filtered off front left and right and redirected to the subwoofer.

NOTE

The Stereo Mode function is not available when using an analogue source in Stereo Direct mode.

Sub Stereo – If Left/Right+Sub or Sat+Sub is selected in Stereo Mode above, this setting adjusts the level of the subwoofer when the source is two channel stereo.

Brightness – Sets the video brightness for this input. This setting can be used to compensate for an overly dark or bright source picture on this input when compared with other video sources.

Contrast – Sets the video contrast for this input. This setting can be used to compensate for too much or too little contrast in the source picture on this input when compared with other video sources.

Colour – Sets the video colour saturation for this input. This setting can be used to compensate for too much or too little colour in the source picture on this input when compared with other video sources.

Picture Mode – Sets how the video processor in the AVR500/AVR600/AV888 interprets the video on this input. Normally the video processor automatically detects the original source type and correctly sets either Video mode or Film mode processing. In the unlikely event that the video processor misinterprets the video type, resulting in subtle picture artefacts, the video processor can be manually forced into Video mode or Film mode. This function should normally be set to Auto.

Edge Enhancement – Sharpens the picture from a source on this input.

Mosquito N.R. – Removes haziness that sometimes appears around objects in a picture from a source on this input.

Noise Reduction – Removes random noise within the picture from a source on this input.

Block N.R. – Removes block artefacts in overly compressed digital video from a source on this input.

Component Mode – Configures the current three-wire high quality analogue video input for component (YUV) video signals or RGB video signals. It is important to match the setting to the incoming video format otherwise the colours will be incorrect and the picture may be unstable.

Options are Normal, RGsB and RGB+Sync.

- **Normal:** (default) the three-wire input is configured for normal Component (YUV / YPbPr) analogue video.
- **RGsB:** the three-wire input is configured for RGB analogue video with video 'sync-on-green'.
- **RGB+Sync:** the three wire input is configured for RGB analogue video, with the video sync signal on the composite input for the current named source.

You should typically select RGB+Sync if you are using a standard SCART to 4-wire phono breakout cable to connect an RGB SCART source.

Note that if RGB+Sync is selected, the S-Video and Composite inputs cannot be selected as video inputs for the current source.

Audio Source – Selects the particular connection type for each input. The default is HDMI; this setting must be changed if another connection is used.

Select from the list the audio type you are using on this source.

NOTE: you may experience some audio transients when changing this setting. **As a precaution, we recommend that you reduce the volume level first**.

- **HDMI**: the unit is forced to use the HDMI audio input for this source.
- **Digital**: the unit is forced to use the optical (**TOSLINK**) or coaxial (**S/PDIF**) digital audio input for this source
- **Analogue**: the unit is forced to use the analogue audio input for this source.

Video Source – Selects the video signal connection for this source. The default is HDMI; this setting must be changed if another connection is used.

- **HDMI**: the unit is forced to use the **HDMI** video input for this source.
- **Component:** the unit is forced to use the **COMPONENT/RGB** video input for this source.
- **S-Video:** the unit is forced to use the **S-VIDEO** input for this source.
- **Composite:** the unit is forced to use the **COMPOSITE** video input for this source.

General Setup

General information and system controls.

Source Input – (Information only) The currently selected input to which the settings below relate.

Incoming Format – (Information only) The format of the digital audio stream connected to this input, if present.

Incoming Sample Rate – (Information only) The sample rate of the digital audio stream connected to this input, if present.

Incoming Bit Rate – (Information only) The bit rate of the digital audio stream connected to this input, if present.

Dialnorm – (Information only) If a Dolby Digital audio stream is connected to this input, this is the Dialogue Normalisation setting requested by the stream.

Video Input – The currently selected video input. For inputs that have video connections (e.g. **SAT**, **PVR** etc), audio and video inputs normally switch over together. However, here you can temporarily select a different video source for the current audio source. This feature may be useful, for example, if you are watching a sports game on satellite but on this occasion wish to listen to the commentary on the radio instead. This temporary override is reset when the input source is changed so that the Video Input follows the Audio Input setting (or the setting in the Video Inputs menu, if applicable).

Audio Compression – Allows selection of compression which is ideal for late night listening. The compression effect increases the volume of the quiet passages and decreases the volume of the louder passages. Compression only applies to some Dolby Digital and DTS soundtracks that support this function.

- **Off**: (default) no audio compression is applied.
- **On**: Audio compression is applied whenever a soundtrack supporting compression is received.
- **On / Auto**: As for On above, except for Dolby TrueHD soundtracks which support an additional Auto on/off setting

This setting applies to all inputs when a relevant digital audio stream is detected. It is stored in memory and recalled each time the unit is powered up.

Balance – To alter the sound balance temporarily between front left and right speakers. You can alter the sound stage to either the left or the right by up to 6dB. Note that it is not possible to shift the audio signal completely over to one channel. This function resets to equal left/right balance when the input is changed.

PLII Dimension –
PLII Centre Width –
PLII Panorama –

These allow the adjustment of the sound field for Dolby Pro Logic II Music mode decoding of two-channel sources. These setting apply to all inputs when PLII or PLIIx Music decoding is selected. The settings are stored in memory and recalled each time PLII or PLIIx Music mode is selected.

- **Dimension**: Allows the user gradually to adjust the sound field either towards the front or towards the rear. Settings range from -3 to +3. We recommend Dimension is set to 0 for normal use.

- **Centre Width**: Controls the centre image width. With Pro Logic decoding, dominant centre signals come only from the centre speaker. If no centre speaker is present, the decoder splits the centre signal equally to the left and right speakers to create a 'phantom' centre image. The Centre Width control allows variable adjustment of the centre image so it may be heard only from the centre speaker; only from the left/right speakers as a phantom image; or from all three front speakers to varying degrees. We recommend Centre Width is set to 3 for normal use.
- **Panorama**: Extends the front centre image to include the surround speakers for an exciting 'wrap-around' effect with side-wall imaging.

Digital Output Freq. – Sets the sampling frequency of the audio Analogue-to-Digital converter. This setting applies to all inputs when analogue audio is being processed (i.e. not Stereo Direct mode). It is stored in memory and recalled each time the unit is powered up.

Volume Adjustment – Sets the step size of the volume control.

- **Normal**: (default) volume control is in 1dB steps
- **Fine**: volume control is in 0.5dB steps

Maximum Volume – Limits the maximum volume setting the system can be turned up to in the main zone. This is a useful feature to prevent accidental overdriving of low power-handling speakers (for example). It is stored in memory and recalled each time the unit is powered up.

Max On Volume – Limits the maximum volume the system operates in the main zone when it is switched on or comes out of Standby. The system comes on at this stored volume setting if the last used (possibly very loud) volume exceeds this value. It is stored in memory and recalled each time the unit is powered up.

Audio In iPod – If you have an iPod connected to the AVR500/AVR600/AV888 using an Arcam rDock or rLead, this control allows you to set which audio input is used.

Auto Setup

Auto Speaker Setup of your loudspeakers and subwoofer (if present) is controlled by this menu. A full description of how Auto Speaker Setup works is given on page 37. Remember to insert the calibration microphone into the **AUX** input on the front panel and position the microphone at the listening position before running Auto Setup.

Run Auto Setup – Press **OK** (or ⊙ on the remote) to start Auto Speaker Setup. The process will generate test tones from the speakers and will typically take less than two minutes. The test tone generator will cycle round each speaker twice.

Accept Setup – When Auto Speaker Setup has completed without errors you can choose to accept or reject the settings

- **No:** The settings are not stored in memory.
- **Yes:** All the speaker settings (speakers present, type, distance, level and crossover frequency) are stored in the relevant sections of the Setup Menu and overwrite any previous settings.

Auto Setup Progress – Gives a summary of what Auto Speaker Setup is doing as it progresses, starting with which speaker is being tested.

- **Calculating EQ**: Data gathered from each of the speakers is being processed.
- **Completed Error**: A problem was detected with the speaker setup. See the descriptions for each of the individual speakers, below. Alternatively an invalid speaker configuration was detected.

Front Left –
Centre –
Front Right –
Surr. Right –
Surr. Back Right –
Surr. Back Left –
Surr. Left –
Subwoofer –

If the above speakers are correctly detected as present in your speaker configuration, their size (Small or Large), distance from the listening position and trim level (dB) will be displayed. Note that size does not apply to the subwoofer. Otherwise one of the following messages will be displayed:

- **Not Present:** A speaker was not detected on this channel.

- **Clipped:** The test tone detected by the microphone was distorted or clipped. This could be because you have very sensitive speakers and they are very close to the listening position. However it is more likely that the detected signal was corrupted by microphone handling noise or other external sounds. Try running Auto Speaker Setup again.
- **Mic too close:** The speaker is too close to the listening position to be able to calculate its distance. If possible, try moving the speaker slightly further away from the listening position and run Auto Speaker Setup again.

Crossover Freq. – The frequency at which Auto Speaker Setup determined is the best point to filter low frequency sounds away from Small speakers and into the subwoofer (or Large speakers if a subwoofer is not present).

Spkr Types

Settings for the types of loudspeaker you have connected to your AVR500, AVR600 or AV888 and power amplifier (e.g. the Arcam P777). These settings are applied to all audio inputs and are stored in memory and recalled each time the unit is powered up.

Front Left / Right –
Centre –
Surr. Left / Right –
Surr. Back L / R –

Here you set the type of speakers that you have connected to your AVR500/AVR600/AV888:

- **Large**: capable of full frequency range reproduction
- **Small**: not capable of full frequency range reproduction at the low frequency end
- **None**: speaker not present in your configuration
- **Subwoofer**: Set whether a subwoofer is present or not.

For Surr. Back L/R, the number before Large and Small in the dropdown options list is the number of Surround Back speakers in your configuration. If you only have one Surround Back speaker connect it to the **SBL** output.

> **NOTE**
> It is not possible to set all speakers to Small unless there is a subwoofer in your speaker configuration. If you do not have a subwoofer, you will be forced to set your front speakers to Large.

Crossover Freq – This is the frequency at which loudspeakers set as Small start to redirect bass signals to the Subwoofer or Large speakers in your system. Small

speakers redirect bass to the subwoofer, if present. The exception is the Centre speaker which, if Small, redirects its bass to front left/right provided that they themselves are Large. This is done to help keep Centre bass directly in front of the listening position.

MCH Sub Levels – This setting controls the subwoofer level from an externally decoded multichannel source (DVD-A, SACD, etc). Most DVD players require a +10dB compensation on the subwoofer channel to maintain the correct balance with the main channels.

- **+10dB comp.:** for normal DVD players which output the analogue subwoofer channel at the low 0dBr level. Gain compensation of +10dB is added to the subwoofer channel of the **MCH INPUT** in the AVR500, AVR600 or AV888.
- **No comp.:** for DVD players which output the analogue subwoofer channel at the correct +10dBr level. No subwoofer gain compensation is needed on the subwoofer channel of the **MCH INPUT** in the AVR500, AVR600 or AV888.

Use Channels 6+7 for – If your main zone speaker set up does not include Surround Back Left and Right speakers, you can choose to use the Surround Back amplifier channels to bi-amp the Front Left and Right pair, or as a stereo power amplifier for Zone 2 (but note that powered Zone 2 is not available on the AV888).

Spkr Distance

Calibration settings for the distances between the loudspeakers and the listening position.

> **NOTE**
> Speakers that are not present in your configuration will be greyed out.

These settings are applied to all audio inputs and are stored in memory and recalled each time the unit is powered up.

Units – Select whether you wish to measure distances in centimetres or inches.

Front Left –
Centre –
Front Right –
Surr. Right –
Surr. Back Right –
Surr. Back Left –
Surr. Left –
Subwoofer –

As described in 'essential setup' on page 36, measure the distance from each loudspeaker in your system to your ear in the main listening position and enter the values. This allows the AVR500/AVR600/AV888 to calculate the correct relative delay for each loudspeaker.

Spkr Levels

Calibration settings for the test noise signal level through the loudspeakers and measured at the listening position.

> **NOTE**
> Speakers that are not present in your configuration will be greyed out.

These settings are applied to all audio inputs and are stored in memory and recalled each time the unit is powered up.

Use the ⊙ and ⊙ navigation buttons on the remote control to select the relevant speaker. Press ⊙ to enable/disable the calibration noise and the ⊙ and ⊙ navigation buttons to adjust the noise level from each speaker.

Front Left –
Centre –
Front Right –
Surr. Right –
Surr. Back Right –
Surr. Back Left –
Surr. Left –
Subwoofer –

As described in 'essential setup' on page 36, adjust the level of the test noise from each speaker so that an SPL meter at the listening position measures 75dB SPL.

Video Inputs

Settings to optionally assign a video source to each of the normally audio-only inputs.

These settings are stored in memory and recalled each time the unit is powered up.

Video Input Tape –
Video Input CD –
Video Input Aux –
Video Input AM / FM –
Video Input Phono –
Video Input MCH –
Video Input iPod –
Video Input Net –
Video In Digital Radio –

The default for each of the audio inputs is 'None', however for example you could associate the satellite 'Sat' video with AM, FM and Digital Radio audio if you wished. This way you could listen to the FM or AM or Digital Radio commentary of a sports game but have the pictures from the satellite coverage.

Video Outputs

The settings in this menu control the output resolution from the video processor in the unit as well as the operation of the two HDMI outputs.

These settings are applied to all video inputs and are stored in memory and recalled each time the unit is powered up.

Progressive scan playback

HD **24p**
1080p

The AVR500, AVR600 and AV888 can support 1080p, 24 frames per second source materials. To enjoy 24p playback both the source device (e.g., a Blu-ray disc player) and the display device (e.g. a TV or projector) must be capable of supporting 24p.

To enjoy 24p playback, set the *Video Source* to **HDMI** in the **Input Config.** menu, and set the *Output resolution* to **1080p** (i.e. not to **Preferred**) in the **Video Outputs** menu. Also, ensure that the *Frame Rate* is set to **Auto**.

Important points to remember:

For analogue outputs
The analogue output resolution should be chosen carefully; Composite and S-Video connections can only carry 480i (525-line NTSC) or 576i (625-line PAL) signals. If an output resolution higher than this is chosen in Out 1 Resolution, the Composite and S-Video main zone outputs will be disabled.

You should also set the frame rate (50Hz Interlaced for PAL, 60Hz Interlaced for NTSC) and the aspect ratio (4:3 standard or 16:9 widescreen) to match your display device. Note that S-Video and Composite can only carry Interlaced video. If you select Progressive analogue video, Zone 1 S-Video and Composite outputs will be disabled.

For HDMI outputs
The output resolution, frame rate and display aspect ratio can be automatically determined by the unit. Alternatively these settings can be manually selected. If you have two HDMI display devices connected, you can also configure which of the two HDMI outputs takes priority.

Zone 1 OSD – Selects whether the main zone pop-up OSD messages are On or Off. It is stored in memory and recalled each time the unit is powered up.

- When **On**, all user adjustments that are made during the general use of the unit are displayed on screen as well as the front panel display. This includes the adjustment of volume, subwoofer level, lip sync, tone controls, etc. It is stored in memory and recalled each time the unit is powered up.

- When **Off**, the above user adjustments will not appear on screen, only on the front panel display. This leaves the picture on your display device clear of pop-up text. However, regardless of this setting the Setup menus are always displayed on screen.

Analogue Output – This setting controls the output resolution of the analogue video outputs of Zone 1. This applies to all Zone 1 analogue video outputs: Component, S-Video and Composite. This setting is only valid if neither of the HDMI outputs **OUT 1** or **OUT 2** are being used at the time. See 'Important points to remember' above regarding analogue resolutions.

The dropdown list shows all the resolutions that the unit's video processor can output.

Analogue Frame Rate – This setting controls the output frame rate of the analogue video outputs of Zone 1. This applies to all Zone 1 analogue video outputs: Component, S-Video and Composite. This setting is only valid if neither of the HDMI outputs **OUT 1** or **OUT 2** are being used at the time. See the Note 'Important points to remember' regarding analogue frame rates.

Display Type – Set the aspect ratio of your display device; 4:3 standard or 16:9 widescreen.

Output Switching – This setting controls the operation of the two HDMI outputs.

- **Auto-Priority Out 1/Out 2** senses which display device is turned on and gives priority to the named output (**OUT 1** or **OUT 2**) if both display devices are on at the same time. When both display devices are on at the same time, the output with the highest priority is used to configure the settings of the unit's video processor.

- **Output 1** or **Output 2:** forces only the named HDMI output to be enabled.

- **Output 1 & 2:** enables both HDMI outputs simultaneously. In order to do this however, the settings of the unit's video processor are reduced down to the highest common set that can be supported by both display devices.

Out 1 Resolution – This setting controls the output resolution of HDMI output **OUT 1**. This setting is only valid if HDMI output **OUT 1** is the only active HDMI output at the time.

- The dropdown list shows all the resolutions that the video processor can output. Resolutions that are not supported by the connected display device are greyed out and cannot be selected.

- **Preferred:** sets the **OUT 1** resolution to be the preferred resolution that is requested by the display device. This is often the highest resolution the display device can receive.

Out 1 Frame Rate – This setting controls the output frame rate of HDMI output **OUT 1**. This setting is only valid if HDMI output **OUT 1** is the only active HDMI output at the time.

- The dropdown list shows all the frame rates that the video processor can output. Frame rates that are not supported by the connected display device at

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the above resolution are greyed out and cannot be selected.

- **Auto** sets the **OUT 1** frame rate to be the preferred frame rate that is requested by the display device for the currently used resolution.

- **Follow Input** forces the **OUT 1** frame rate to the same as the input frame rate, regardless of the reported capabilities of the display device.

Lipsync 1 – (Information only) Displays how much lip sync is automatically applied to HDMI output **OUT 1** to compensate for video processing delays in the attached display device. Not all display devices support this function.

Out 2 Resolution – This setting controls the output resolution of HDMI output **OUT 2**. This setting is only valid if HDMI output **OUT 2** is the only active HDMI output at the time.

- The dropdown list shows all the resolutions that the AVR500, AVR600 or AV888 video processor can output. Resolutions that are not supported by the connected display device are greyed out and cannot be selected.

- **Preferred:** sets the **OUT 2** resolution to be the preferred resolution that is requested by the display device. This is often the highest resolution the display device can receive.

Out 2 Frame Rate – This setting controls the output frame rate of HDMI output **OUT 2**. This setting is only valid if HDMI output **OUT 2** is the only active HDMI output at the time.

- The dropdown list shows all the frame rates that the video processor can output. Frame rates that are not supported by the connected display device at the above resolution are greyed out and cannot be selected.

- **Auto:** sets the **OUT 2** frame rate to be the preferred frame rate that is requested by the display device for the currently used resolution.

- **Follow Input** forces the **OUT 2** frame rate to the same as the input frame rate, regardless of the reported capabilities of the display device.

Lipsync 2 – (Information only) Displays how much lip sync is automatically applied to HDMI output **OUT 2** to compensate for video processing delays in the attached display device. Not all display devices support this function.

Out 1 & 2 Resolution – This setting controls the output resolution when both HDMI outputs are used simultaneously. This setting is only valid if Output Switching is set to Output 1 & 2.

- The dropdown list shows all the resolutions that the video processor can output. Resolutions that are not supported by the connected display devices are greyed out and cannot be selected.
- **Best:** sets the HDMI output to be the highest common resolution that is supported by both display devices.

Out 1 & 2 Frame Rate – This setting controls the output frame rate when both HDMI outputs are used simultaneously. This setting is only valid if Output Switching is set to Output 1 & 2.

- The dropdown list shows all the frame rates that the video processor can output. Frame rates that are not supported by the connected display devices at the above resolution are greyed out and cannot be selected.
- **Auto:** sets the HDMI output to be the highest preferred common frame rate that is supported by both display devices for the above resolution.
- **Follow Input** forces the **OUT 1 & 2** frame rate to the same as the input frame rate, regardless of the reported capabilities of the display device.

Lipsync 1 & 2 – (Information only) Displays how much lip sync is automatically applied to HDMI outputs **OUT 1** and **OUT 2** simultaneously to compensate for video processing delays in the attached display devices. Not all display devices support this function.

Mode

Lists the decode and downmix options you wish to include when cycling through the options on the **MODE** button. Settings are Yes or No. The list is divided into two sections depending on the source audio type. See section 'Multichannel source modes' on page 47 for more information on each processing a decoding mode.

These settings are applied to all audio inputs and are stored in memory and recalled each time the unit is powered up.

For Stereo sources:

Dolby ProLogic –
Dolby PLIIx Movie –
Dolby PLIIx Music –
Dolby PLIIx Matrix –
Dolby PLIIx Game –
Neo:6 Cinema –
Neo:6 Music –

The first section, 'Stereo sources' is the list of processing modes you wish to make available for stereo signals (analogue stereo, digital PCM stereo, Dolby 2.0, DTS 2.0, etc). When a stereo signal is applied, each press of the **MODE** button cycles through the processing modes you have enabled in the 'Stereo sources' section. The unprocessed Stereo option is always available for stereo signals therefore it is not shown in the list.

For Multichannel sources:

Stereo Downmix –
Dolby Digital EX –
Dolby PLIIx Movie –
Dolby PLIIx Music –

The second section, 'Multichannel sources' is the list of processing modes you wish to make available for multichannel digital signals (any Dolby or DTS digital stream that has more channels than stereo 2.0). When a multichannel digital signal is applied, each press of the **MODE** button cycles through the processing modes you have enabled in the 'Multichannel sources' section.

Zone Settings

Lists the volume and control settings for Zone 2 and Zone 3 (Zone 3 available with AVR600/AV888 only). These settings are applied to all audio inputs and are stored in memory and recalled each time the unit is powered up.

Z2 Audio Input – Selects the analogue audio to be routed to Zone 2.

Z2 Video Output – Selects the analogue video to be routed to Zone 2 for the current audio input.

Zone 2 Volume – The current volume in Zone 2.

Zone 2 Max. Vol – Limits the maximum volume setting the system can be turned up to in the Zone 2. This is a useful feature to prevent accidental overdriving of low power-handling speakers, for example.

Zone 2 Fixed Vol – The Zone 2 volume control can be locked at the current value for use with an external amplifier with its own volume control in Zone 2.

Zone 2 Max On Vol – Limits the maximum volume the system operates in the Zone 2 when it is switched on or comes out of Standby. The system comes on at this volume if the last used (possibly very loud) volume exceeds this value.

Zone 3 Volume – The current volume in Zone 3.

Zone 3 Max. Vol – Limits the maximum volume setting the system can be turned up to in the Zone 3. This is a useful feature to prevent accidental overdriving of low power-handling speakers (for example).

Zone 3 Fixed Vol – The Zone 3 volume control can be locked at the current value for use with an external amplifier with its own volume control in Zone 3.

Zone 3 Max On Vol – Limits the maximum volume the system operates in the Zone 3 when it is switched on or comes out of Standby. The system comes on at this volume if the last used (possibly very loud) volume exceeds this value.

Standby – When a Standby command is received by an infra-red eye in Zone 2, this setting controls which parts of the AVR500, AVR600 or AV888 to turn on and off:

When **Local Only**, the Standby IR command only affects the zone it was received in (Zone2 or Zone3).

When **All Off**, the Standby IR command affects the entire system in all zones.

Network

The AVR600 and AV888 are fitted with a network audio client (optional for the AVR500) which is capable of playing internet radio stations as well as stored music on a network storage device such as a PC, or on a USB flash drive.

Use DHCP – Select if your network uses DHCP

- **No:** To assign a fixed IP address manually.
- **Yes:** To use network parameters given by the DHCP server.

MAC address – (Information only) The unique address of the network card in your AVR500/AVR600/AV888.

IP Address – If not using DHCP, enter the IP address you have assigned to the AVR500/AVR600/AV888 for your network.

Subnet Mask – If not using DHCP, enter the subnet mask for the AVR500/AVR600/AV888 on your network.

Gateway – If not using DHCP, enter the IP address of the router the AVR500/AVR600/AV888 is connected to.

Primary DNS – If not using DHCP, enter the Primary DNS IP address of your internet service provider.

Alternate DNS – If not using DHCP, enter the Secondary DNS IP address of your internet service provider.

Use Proxy – Select if you connect to the network via a Proxy Server.

- **No:** If you connect directly onto the network.
- **Yes:** If you connect to the network via a Proxy Server.

Proxy Address – If connecting via a Proxy Server, enter its IP address.

Proxy Port – If connecting via a Proxy Server, enter the port number to which the Proxy responds.

decoding modes

Introduction

Your AVR500/AVR600 receiver or AV888 pre-amp provides all the key decoding and processing modes for analogue and digital signals, including the latest high definition audio formats over HDMI.

Modes for digital sources

Digital recordings are usually encoded to include information about their format type. The unit detects automatically the relevant format in a digital signal – such as Dolby TrueHD, Dolby Digital Plus, DTS-HD Master Audio, Dolby Digital, or DTS – and switches in the appropriate decoding.

Modes for analogue sources

Analogue recordings do not contain information about their encoding formats, so the desired mode – such as Dolby Pro Logic – needs to be selected manually.

Mode memory

Dolby Digital or DTS audio (including the high definition formats) can be output in two mix modes, selected using the **MODE** button:

- Surround (e.g., five main channels plus a subwoofer for a 5.1 source)
- Stereo downmix.

Two-channel audio, regardless of whether it is analogue or digital can also be output in two mix modes, selected using the mode button:

- Surround (e.g., Dolby Pro Logic II Movie, Neo:6 Music, etc.)
- Stereo.

TheAVR500/AVR600/AV888 stores the settings for each source (except MCH). Thus the decoding mode for the following groups of source material can be stored independently:

- Dolby Digital (multichannel) and DTS source material
- Two channel Dolby, PCM or Analogue source material

Two-channel source modes

The following decoding and surround modes are available for standard and high definition Dolby Digital 2.0, DTS 2.0, PCM or analogue sources:

Stereo
Pro Logic II Movie
Pro Logic II Music
Pro Logic II Game
Pro Logic IIx Movie
Pro Logic IIx Music
Pro Logic IIx Game
Pro Logic
Neo:6 Cinema
Neo:6 Music

> **NOTE**
> Pro Logic IIx modes are only selectable when Surround Back speakers are present.

Stereo

In this mode the unit works as a conventional high quality audio amplifier. Note that if the subwoofer is enabled in stereo mode, then some processing of the signal will be carried out. To achieve ultimate sound quality with analogue sources, select the Stereo Direct function if an analogue connection is present.

Dolby Pro Logic II

Dolby Pro Logic II decoding is designed to produce five-channel output from two-channel source material.

There are three different modes available in Pro Logic II: 'Movie', 'Music' and 'Game' modes, which are intended for use as their names suggest. Due to the different recording methods used for movies, music and video games, it is recommended that the correct decoding mode for your source material is used to obtain best results.

- **Movie mode**: This is intended for use with 'cinematic' material, which is mixed and monitored in a calibrated multichannel environment. Movie mode is a 'fixed' mode that is designed to give a similar sound when listening using a home cinema system to that obtained in a cinema.
- **Music mode** : Stereo music is not designed for surround processing, although good surround effects can be obtained through careful production. As the optimum decoding method varies according

to the recording, Music mode allows the user adjustment of the processing characteristics.

- **Game mode**: Video games today are extremely sophisticated, with dramatic 5.1 surround audio tracks. Game mode gives augmented bass management to capture the full effect of game sounds panned to the surrounds, ensuring the bass impact from purer surround effects are fully delivered to the subwoofer.

Dolby Pro Logic IIx

Dolby Pro Logic IIx is an extension of the Dolby Pro Logic matrix-decoding method. The decoder allows the processor to derive seven outputs from a two or multichannel (up to 5.1 with EX) source to take better advantage of all amplifiers and speakers in a 7.1 setup. As with Pro Logic, there are three different modes available: Movie, Music and Game. Due to different recording methods used for movies and music, you should select the correct mode for your source material.

Dolby Pro Logic

Dolby Pro Logic is a legacy mode that is designed to produce a five-channel output from two-channel source material. It should be used only when the source material is encoded as Dolby Pro Logic; otherwise, we recommend the use of Dolby Pro Logic II. This is because Pro Logic processing on straight stereo sources can sound muffled and compressed.

DTS Neo:6

DTS Neo:6 provides up to six full-band channels of decoding from stereo material. The AVR500, AVR600 or AV888 will derive separate channels corresponding to the standard home theatre layout.

- **Cinema** : A movie mode designed to reproduce a movie theatre environment. Neo:6 technology allows various sound elements within a channel or channels to be steered separately, and in a way which follows the original presentation naturally.
- **Music** : A music mode designed to produce a lively, high-integrity surround-effect from most two-channel music sources from all available speakers. Neo:6 music mode expands stereo recordings into the five or six-channel layout without diminishing the subtlety and integrity of the original stereo recording.

Multichannel source modes

Digital multichannel source material is normally provided as '5.1 audio'. The '5.1 channels' comprise of: left, centre and right front speakers, two surround speakers and a low frequency effects (LFE) channel. Since the LFE channel is not a full range channel, it is referred to as '.1'.

Surround systems decode and reproduce the 5.1 channels directly. Dolby Digital EX and DTS-ES matrix enhanced decoding systems create one extra rear channel from information buried in the two surround signals of the 5.1 source. These EX and ES enhanced systems are sometimes referred to as '6.1' systems. This extra surround back channel is normally reproduced through two separate loudspeakers, creating a '7.1' system.

DTS-ES discrete is a true '6.1' source, with six discretely encoded channels, plus the '.1' LFE channel.

Dolby Digital Plus, Dolby True-HD and DTS-HD are high-resolution surround formats found on Blu-ray and HD-DVD discs

Decoding modes

The modes given in the following table are available for multichannel digital sources.

Special modes such as DTS-ES 6.1 discrete, Dolby Digital Plus, Dolby Tru-HD and DTS-HD are only available from the correct source material.

High resolution audio sources	
Dolby True-HD	Provides up to 7.1 full channel at 96kHz, 24bit resolution, with potentially no losses in the compression process. Data rates can be up to 18Mbps.
Dolby Digital Plus	Provides up to 7.1 discrete channels of audio with less compression than traditional Dolby Digital encoding. Data rates can be up to 6Mbps.
DTS-HD Master Audio	Provides up to 7.1 full channel at 96kHz, 24bit resolution, with potentially no losses in the compression process. Data rates can be up to 24.5Mbps.
For Dolby Digital sources	
Dolby Digital 5.1	The most commonly used sound format for DVD video, and is also the standard for US television. Dolby Digital 5.1 sources deliver sound with five discrete full-range channels; left, centre, right, surround left, surround right, plus a low frequency effects (LFE) channel.
Dolby Digital 5.1 Stereo Downmix	Provides a stereo downmix of the source material for use with headphones.
For DTS sources	
DTS 5.1	Less common than the Dolby Digital format, but generally recognised within the audio industry as being of superior sound quality. DTS 5.1 delivers surround sound with five full range channels plus an LFE channel.
DTS 5.1 Stereo Downmix	Provides a stereo downmix of the source material for use with headphones.
DTS-ES 6.1 Matrix	This is a 6.1 channel format based on DTS 5.1. It has the sixth channel matrix encoded into the surround left and surround right channels. The sixth channel is a surround centre channel and is directed to the surround back left and surround back right speakers.
DTS-ES 6.1 Discrete	This is a true discrete 6.1 channel sound format (unlike DTS-ES Matrix). DTS-ES discrete mode operates only on sources with DTS-ES 6.1 discrete audio encoding.
DTS96/24	Provides up to 5.1 channels of audio at 96kHz, 24bit resolution for superior sound quality compared to standard DTS 5.1
Post-processing	
Dolby Digital EX decoding can be applied to any source if one or two surround speakers are present. Pro Logic IIx decoding can be applied to any source if two surround back speakers are present.	
Dolby Digital EX	This is an extension to Dolby Digital decoding that provides a 6-channel output from a 5-channel input. The extra channel is the centre-surround channel (for which the two surround back speakers are used), and is derived from the left and right surround channel information. This decode mode should be used only when the source material is 'Surround EX' encoded (which is normally indicated on the disc packaging and should be detected automatically by the AVR500/AVR600/AV888), but may be used at other times if desired.
Pro Logic IIx Movie	This mode is used to derive information for the individual surround back channels from the surround channels, using the Pro Logic IIx Movie decoder.
Pro Logic IIx Music	This mode is used to derive information for the individual surround back channels from the surround channels, using the Pro Logic IIx Music decoder. The controls for adjusting Pro Logic IIx Music in 'General Setup' can be used in this mode.

Dolby volume

Dolby Volume is a sophisticated new technology that resolves the problem of different volume levels between programme content (e.g. a TV show and advert breaks) and between sources (e.g. a rock radio station and DVD, or between two TV stations). It lets the listener enjoy everything at the same preferred listening level without having to reach for the volume control to compensate for the different recording/output levels. This is the Volume Leveller function of Dolby Volume.

Dolby Volume also works in conjunction with the AVR500, AVR600 or AV888 volume control setting to compensate for the ear's changing sensitivity at different frequencies depending on how loud the audio is. It is based on a model of how human hearing works. It properly balances low, mid and high frequencies to maintain all the nuances and impact of the original audio regardless of the actual selected playback volume level. This is the Volume Modeller function of Dolby Volume.

Dolby Volume measures, analyses and maintains volume levels based on how people perceive sound. A variety of audio parameters are monitored including spectral- and time-based loudness to ensure that perceived dynamics, timbre and bass performance remain consistent at all volume levels.

Dolby Volume also lets the listener control a programme's dynamic range – the range between loud and quiet sounds. For example, with the volume turned down for late-night viewing, dynamic range can be adjusted so that speech remains clear and loud effects or music passages retain their impact without waking up the family.

Settings

Dolby Volume can be applied to any analogue or digital stereo source or any digital multichannel source. *It is not available in Stereo Direct or on the analogue multichannel input.* Dolby Volume can even be applied to processing of stereo signals (e.g. PLII Music) or when down-mixing a digital multichannel source (e.g. Dolby Digital 5.1 down to stereo).

Dolby Volume can be enabled and configured separately for each audio input in the Input Config menu. The default is Off for 'audiophile' listening to analogue or digital stereo sources, however you may wish to enable Dolby Volume on some or all inputs to maintain the same perceived overall listening level between sources and frequency response regardless of the volume setting. There are two modes for Dolby Volume: 'Cinema' and 'Music', which calibrate the system to match the type of audio material generally played on each input. Movie should be selected for sources which typically play movie soundtracks. Music should be selected for all other sources (CD, TV, Satellite, Tuner, etc.). Most of the controlling parameters of Dolby Volume are automatic as they are dependent on analysis of the audio signal and the volume setting of the AVR500, AVR600 or AV888. However, the Volume Leveller and Calibration Offset controls (see below) can be adjusted to your preference.

Volume Leveller

The Volume Leveller function of Dolby Volume controls how closely quiet and loud sources and programme content are matched to each other, based on the ear's perception of loudness. The range of values is 0 (minimal levelling) to 10 (maximum levelling). The default setting is 9. If the Volume Leveller function is turned off, no level matching between sources and programme material is performed. This is not the same as turning Dolby Volume off as volume related frequency response processing is still active.

When Dolby Volume is being applied to the current input, a Dolby Volume processing mode indicator is shown on the OSD and the front panel display.

Calibration Offset

The Calibration Offset parameter of Dolby Volume allows you to compensate for speaker efficiencies and listening position – effectively moving the reference listening level up or down the volume scale. The default value is 0 and this should normally produce a good result when the speaker levels are set using a sound pressure level meter at the listening position (75dB SPL, 'C' weighting, slow response).

Tuner – AVR500/AVR600 only

The AVR500/AVR600 is fitted with an internal AM/FM tuner. Depending on your location and installed options, it may also be fitted with a DAB tuner (Europe) or Sirius satellite radio connection (Americas; AVR600 only). Sirius requires the purchase of the 'SiriusConnect™ Home Tuner' kit and Sirius subscription – please visit *www.sirius.com* for details.

This section deals with tuner operation, for information on setting up the tuner and installing aerials, see page 14.

When a tuner input is selected, the OSD shows a list of radio presets plus an information panel giving all available information about the current frequency (for AM and FM) or channel (for DAB or Sirius).

The front panel will also give the same information, pressing the **INFO** key will cycle through the various items of information:

AM

- Processing mode (default)
- Frequency
- Signal strength

FM

- Processing mode (default)
- Radiotext (if available; shows 'No radiotext' if none present)
- Programme type (if available)
- Signal strength

DAB

- Processing mode (default)
- Radiotext (if available; shows 'No radiotext' if none present)
- Programme type
- Signal quality
- Bit-rate of transmission

Sirius

- Processing mode (default)
- Artist Name: Song Title
- Composer (if available)
- Category Name
- Signal quality

Tuning/Channel Selection

When switching to the internal **TUNER** source, the AVR500/AVR600 enters the last used tuner band, be it AM / FM / DAB (if fitted) / Sirius (if fitted). Repeatedly pressing ⓣⓤⓝ cycles through the available tuner bands on your AVR600.

FM/AM analogue radio

Frequency tuning on FM and AM radio is done using the ◁ and ▷ buttons on the CR102 remote control in **TUN** device mode. Individual presses move the frequency down and up one step. If you press and hold either of the tuning buttons for two seconds, the tuner scans to the next strong signal. You can stop a scan at any time by pressing one of the tuning buttons again.

In Europe, the internal FM radio is capable of receiving RDS (Radio Data System) radiotext signals that are transmitted on some stations. The RDS information typically includes the radio station name, the music or speech genre as well as additional information related to the current programme. On music stations this is often information on the currently playing track.

DAB digital radio

If your AVR500/AVR600 is fitted with the optional DAB tuner you will need to scan for available stations before being able to listen to them.

To scan for DAB stations, first select the DAB tuner then press and hold ⓄⓀ until the display indicates scanning has started. The AVR500/AVR600 will then scan all the DAB radio frequencies and compile a list of the stations that are available.

When the scan is complete, you can scroll through the station list using the ◁ and ▷ buttons on the CR102 remote control. To listen to the currently displayed station press the ⓄⓀ. If you do not press ⓄⓀ within two seconds, the display will revert to displaying the currently playing station.

Internet radio

Please see the Network/USB Operation section on page 52 for details of internet radio operation.

Saving and selecting Presets

Preset selection uses the ⟁ and ⟁ keys on the remote to browse and ⓄⓀ to select the preset when the CR102 is in **TUN** device mode.

Up to 99 presets can be stored and these can be from any band, for example Preset 1 could be an AM station, preset two a DAB station, etc. Pressing the **OK** key causes the next available preset number to be displayed, then pressing the **OK** key again stores the current frequency/channel in that preset. If a different preset number is required, press the ⟁ or ⟁ keys until the desired number is displayed before pressing the **OK** key for a second time.

Deleting Presets

When in tuner browse mode (using ⟁ and ⟁ to scroll through the presets), the yellow button on the CR102 remote is used to delete the currently highlighted (but not playing) station or frequency.

Sirius satellite radio (AVR600, US & Canada only)

In this section it is assumed that you already have a 'SiriusConnect™ Home Tuner' kit and a Sirius subscription, and that the antenna is already correctly placed to receive Sirius broadcasts. Please visit *www.sirius.com* for more information.

Add to your subscription

Before being able to receive satellite radio broadcasts you will need to update your Sirius subscription to add the ID number of the Sirius receiver module in your AVR600. The Sirius ID can be found by switching to the Sirius source and selecting channel 0. The AVR600 displays the 12-digit number on the OSD and on the front panel display. You should make a note of this ID number, then select Sirius channel 184 while you apply this ID number to your account at *www.sirius.com* or by calling 1.888.539.SIRIUS (7474).

Once your subscription is updated, a code is sent over Sirius channel 184. When this code is received the AVR600 displays 'SUBSCRIPTION UPDATED'. This display remains until cleared by pressing any button. The Sirius radio module is now fully operational.

Please note that, depending on your subscription, some channels may not be available. If a channel is not part of your subscription package, you are invited to subscribe to the channel - 'CALL 888-539-SIRIUS To Subscribe' is displayed and audio is muted. If you have any queries about your subscription, please contact Sirius.

Operation

In addition to the channel and preset selection, previously mentioned, you can also cycle through the channel categories (Rock, Pop, Country, etc.) using the ⏮ and ⏭ keys. The first channel in each category is displayed. You can then scroll through other channels in that particular category using the ◀ or ▶ buttons on the CR102 remote. On the OSD a star (' * ') is shown before the category name to show you are scrolling through channels only in the current category. Press OK to select the currently displayed channel to listen to it otherwise the display times out and returns to the currently playing channel information.

Locking Channels

The Sirius module in the AVR600 has a parental lockout feature which allows you to assign a 4-digit code to any channels you do not wish to be generally available to users.

Channels can be locked out individually by pressing and holding the **MODE** key. 'Lock?' also appears on the lower line of the On Screen Display. Pressing OK confirms and applies the parental lock to the channel and the display returns to the channel name.

If a locked channel is selected, the audio will be muted and the user prompted on the display to enter the unlocking code. 'Unlock code :____' is displayed.

The default unlock code is 0000.

If the code is entered correctly the audio for this channel unmutes. If the code is not entered correctly, the previously played channel is re-selected.

To remove the parental lock from one of the locked channels (so that the unlocking code is no longer required to listen to them), navigate to the channel, select it and enter the unlocking code to unmute the channel. Press and hold the MODE key until the display shows 'Unlock ?'. Press OK to remove the lock from the channel.

To change your locking code, in **TUN** device mode on the remote, press and hold the SUBT key.

> **NOTE**
>
> The locking code is reset to 0000 if a factory reset of the AVR600 is performed.

Sirius errors

If an invalid channel is selected, the AVR600 displays 'INVALID CHANNEL' and the channel reverts to the previous valid channel.

If there is a loss of signal, the AVR600 displays 'ACQUIRING SIGNAL'.

If the antenna is disconnected, the AVR600 displays 'ANTENNA ERROR'.

During the channel map update, the message 'Updating channels - xx%' is displayed. Note that audio is muted until the update is complete. When complete, the AVR600 retunes to the original channel and restores the audio.

network/usb operation
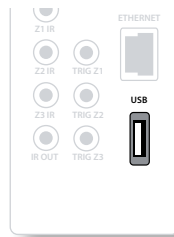
The AVR600 and AV888 are fitted with a network audio client which is capable of playing internet radio stations as well as stored music on a network storage device such as a PC, or from a USB flash drive. The network audio client is an optional extra for the AVR500, please contact your dealer for upgrade information.

For information on installing the AVR500, AVR600 or AV888 on your network, see page 22.

The unit supports the following file formats:

- MP3
- WMA (Windows Media Audio)
- WAV
- FLAC (Free Lossless Audio CODEC)
- MPEG-4 AAC (iTunes) with DRM10 support
- Ogg Vorbis

Favourites

You can store tracks or radio stations in your 'favourites' folder for easy access later. Once playing, pressing the **FAV+** key adds the track to the 'favourites' folder. Pressing **FAV-** removes the track from the 'favourites' folder (this key only has an effect if the track is in the favourites folder).

Selecting the playback source

Selecting the network client will allow playback of internet radio stations and stored music on a networked storage device or USB memory device.

To select the network source the CR102 remote must first be in **AMP** device mode (press ⒜). Then press ⓢ + ⒤ on the remote to select the Network source. You can also cycle to it using the **–INPUT** / **INPUT+** keys on the front panel.

The 'home' page will display all available storage devices, as well as your 'favourites' folder. Navigate through these devices using the ⬆, ⬇, ◀ and ▶ keys. Folders that may contain playable files have a ▭ symbol, playable files have a ♩ symbol. Once you reach the track you wish to play, press **OK**.

Once playing, pressing **OK** again or ⏸ will pause the track.

Pressing the ⏭ key skips forward one track. If the last track is reached the key is ignored.

Pressing the ⏮ key skips back one track. If the first track is reached, the key is ignored.

Pressing and holding the **OK** or ■ key for two seconds stops playback.

The ▶ key exits any navigation pages and shows the "Now Playing" screen.

Pressing the ⒭ key on the remote plays the tracks in the current folder in a random order.

Pressing the ⒭ key on the remote repeats the current track, pressing it again repeats all the files in the current folder, pressing it again cancels the repeat function.

> **NOTE**
>
> For playback from a network device, the network device needs to running a universal plug and play (uPnP) service, such as Windows Media Player 11. This can be downloaded free of charge from *www.microsoft.com* or installed via the Windows update installer. Windows Vista™ has this functionality built in.
>
> Other free and paid-for uPnP services are available for other computer operating systems. Some network attached storage (NAS) systems include a built-in version of a uPnP service.

USB playback

Insert a USB device into the socket on the rear panel and select select the network client input. The USB device appears in the list of folders that can be navigated. Navigate to the music file and press the **OK** key.

Internet radio stations

Although you can manually enter the URL of an internet radio station, the unit uses the vTuner service to allow easy browsing of internet radio stations and podcasts. To set up this service for your AVR500, AVR600 or AV888, please visit *www.arcamradio.co.uk*

There, you will be asked to enter the Media Access Controller (MAC) address which is the unique ID of your AVR500/AVR600/AV888. This MAC address can be found in the network section of the setup menu.

Once you have entered the MAC address, you can then browse stations and podcasts and set up groups of favourite stations. When you next connect your unit to the internet, these groups will appear in the selection list.

Pressing the **INFO** key will cycle what is shown on the lower right portion of the front panel display between:

- Elapsed Time (default)
- Processing mode
- Album (if available)
- Artist (if available)
- File information (bitrate, type).

iPod

It is possible to connect an iPod to your AVR500, AVR600 or AV888 using either the Arcam **rLead** or **rDock** accessories (please contact your dealer).

Connect the 9-way plug into the socket marked 'rLead/rDock' and the audio leads to the AV input. If your iPod has video output and you are using the **rDock**, connect the composite and S-Video leads to the AV video inputs.

To select the iPod input, press the ⒤ key on the remote while in **AMP** Device Mode, or cycle to it using the **– INPUT** / **INPUT +** keys on the front panel.
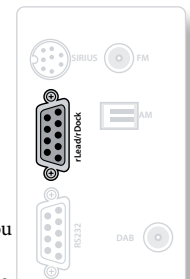
external amplifiers

Analogue pre-amplifier outputs (AVR600/AV888 only)

All pre-amplifier analogue outputs are buffered, have a low output impedance and are at line level. They are able to drive long cables or several inputs in parallel if required.

R, L, C

Connect these to the equivalent (Right, Left and Centre) front channels of your power amplifier.

SW1

Main subwoofer output. Connect this to the input of your active subwoofer, if present.

SW2, SW3

Subwoofer 2 and Subwoofer 3 auxiliary outputs. These are equivalent to SW1 but they allow the use of multiple subwoofers.

SR, SL

Surround Right and Surround Left outputs. Connect these to the Surround Right and Left power amplifier inputs.

SBR, SBL

Surround Back Right and Surround Back Left outputs (only used in 6.1 and 7.1 channel systems). Connect these to the Surround Back Right and Surround Back Left power amplifier inputs.

For 6.1 channel speaker configurations, connect the single Surround Back power amplifier to the SBL output.

XLR balanced line outputs – AV888 only

The AV888 processor provides XLR connectors for each of seven channels, to an XLR-equipped amplifier (e.g. the Arcam P777). Three XLR subwoofer outputs are provided in addition.

RIGHT, LEFT, CENTRE

Connect these to the equivalent (Right, Left and Centre) front channels of your power amplifier.

SW1

Main subwoofer output. Connect this to the input of your active subwoofer, if present.

SW2, SW3

Subwoofer 2 and Subwoofer 3 auxiliary outputs. These are equivalent to SW1 but they allow the use of multiple subwoofers.

SR, SL

Surround Right and Surround Left outputs. Connect these to the Surround Right and Left power amplifier inputs.

SBR, SBL

Surround Back Right and Surround Back Left outputs (only used in 6.1 and 7.1 channel systems). Connect these to the Surround Back Right and Surround Back Left power amplifier inputs.

For 6.1 channel speaker configurations, connect the single Surround Back power amplifier to the SBL output.

The AVR500, AVR600 and AV888 allow independent routing and control of analogue audio, Composite and S-Video to a separate set of equipment, typically used for a second living space, e.g., bedroom or lounge. The AVR600 and AV888 also allow a copy of the Zone 2 analogue audio to be routed to and controlled in a third living space, Zone 3.

The connection guide on the facing page shows how the AVR600 or AV888 is normally connected in a multi-room installation.

Zone 2

Zone 2 receives only signals obtained by the AVR500, AVR600 or AV888 from the analogue audio, Composite and S-Video inputs. The analogue inputs are required because there is no analogue-to-digital, digital-to-analogue or DSP processing available for Zone 2 signals – the unit only converts video formats for Zone 1.

For this reason, we recommend that in addition to any digital connections, the Composite and/or S-Video outputs from your source devices are connected to the AVR500, AVR600 or AV888.

Video outputs

The **Z2** S-Video and/or Composite output connectors of the AVR500/AVR600/AV888 should be connected to the analogue video inputs (usually labelled **S-VIDEO IN** or **COMPOSITE VIDEO IN**) of the display device in Zone 2.

If you wish to make an HDMI connection to Zone 2, you must accept the limitations of the AVR500/AVR600/AV888 video processing system.

HDMI OUT 1 and **OUT 2** both carry the same signals (as there is only one video processing engine) and are primarily intended for use in Zone 1. Full HDMI video functionality in Zone 2 can only be achieved if Zone 1 is not being used at the same time.

If Zone 1 is being used at the same time as Zone 2, Zone 2 must follow the Zone 1 source selection if you wish to receive HDMI signals in Zone 2. Zone 2 must also be the same video resolution as Zone 1. If you wish to watch a different source in Zone 2 than is currently showing over HDMI in Zone 1, Zone 2 will be forced to use the analogue video connections into and out of the AVR500/AVR600/AV888.

Due to the complications of using HDMI in Zone 2 we recommend the use of analogue video connections instead, particularly as it is not possible to apply audio lip sync to Zone 2 audio to compensate for video processing delays.

Audio outputs

The **Z2 OUT**, **R** and **L** phono sockets should be connected to the analogue audio inputs (Usually labelled **ANALOGUE AUDIO IN**) of the Zone 2 display device, or to the inputs of an additional stereo power amplifier in Zone 2 (for example, the Arcam P38).

Zone 3 (AVR600/AV888 only)

A line-level signal from the stereo analogue audio is available for Zone 3. This is a copy of the Zone 2 audio signal, but has its own independent volume control.

Audio outputs

The **Z3 OUT**, **R** and **L** phono sockets should be connected to the inputs of an additional stereo power amplifier in Zone 3 (for example, the Arcam P38).
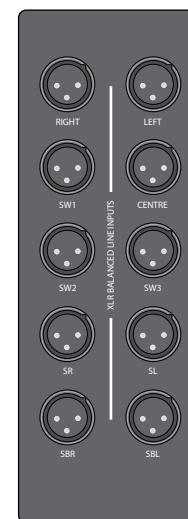
Zone 2 and 3 control outputs

The AVR500, AVR600 and AV888 also allow remote control from remote zones.

Z2 IR and Z3 IR

This allows the AVR500/AVR600/AV888 to be controlled remotely from Zone 2 (or Zone 3) via Infra-red remote control. Connect a remote IR receiver in Zone 2 (or Zone 3) to allow control of the AVR500/AVR600/AV888 from these listening/viewing areas.

For more information on remote IR receivers, see 'Z1 IR' on page 17.

TRIG Z2 and TRIG Z3

This allows the AVR500/AVR600/AV888 to remotely switch on devices in Zone 2 (or 3) when the appropriate Zone is selected. For example you could set your television in Zone 2 to switch on when 'Zone 2' is selected on AVR500/AVR600/AV888.

For more information on triggers, see 'Trigger connectors' on page 17. Please note that not all AV devices have this feature, nor are triggers essential for listening and viewing in a separate zone.
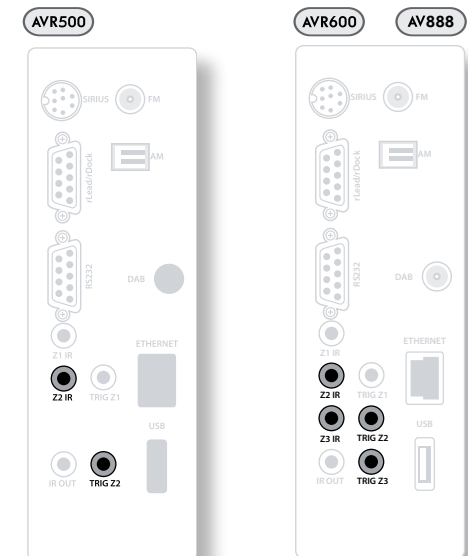
Multi-room connection guide

Zone 3

Zone 1

Zone 2

Z3 OUT

R L

Z2 OUT

L

R

Z2

ANALOGUE AUDIO IN

IR

RIGHT LEFT

Amplifier

Amplifier

ANALOGUE AUDIO IN

IR

RIGHT LEFT

VIDEO IN

TV/Display

Z1 IR

Z2 IR   TRIG Z1

Z3 IR   TRIG Z2

TRIG Z3

POWER 51Z
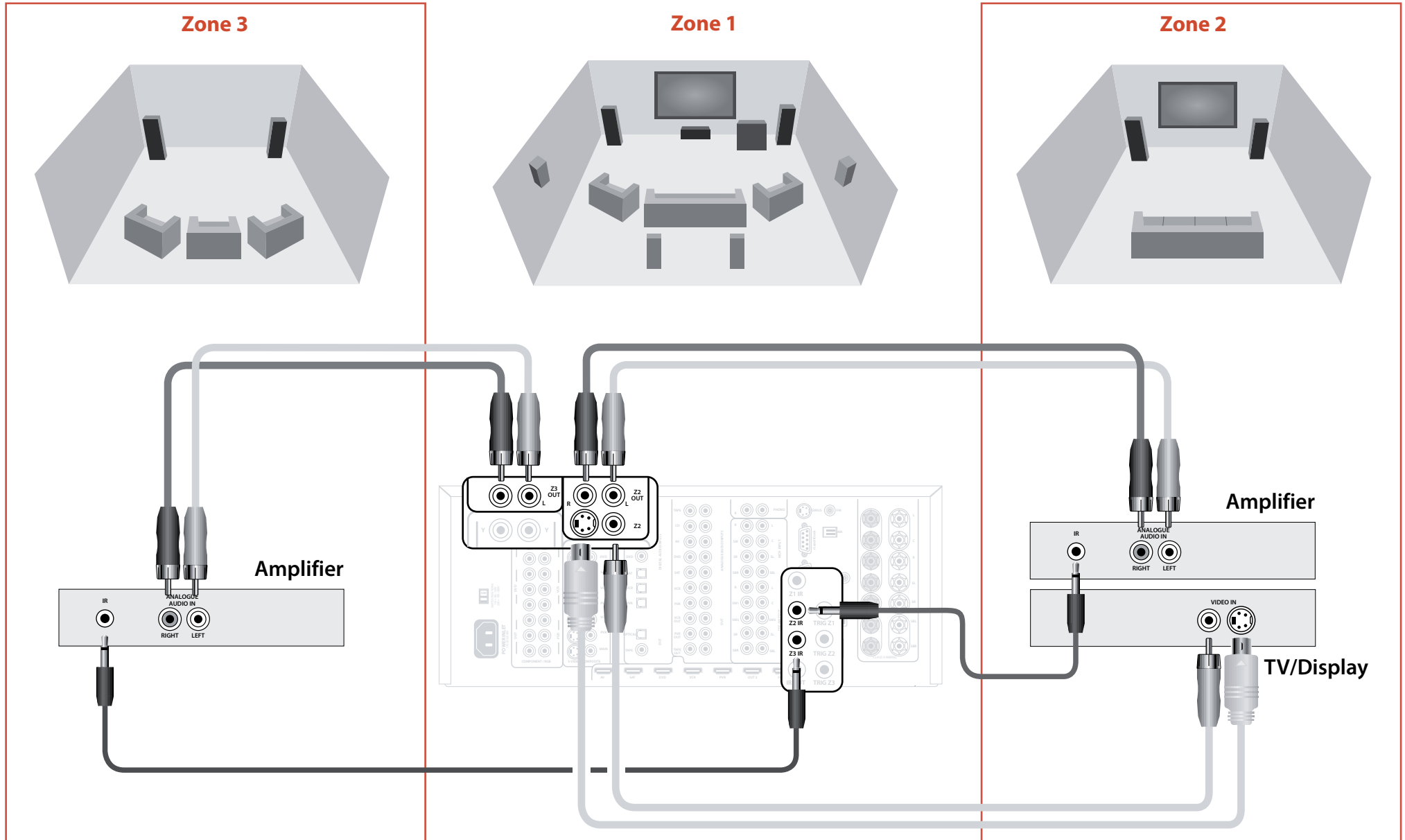
Code Learning

The CR102 comes with a complete library of preprogrammed codes. After you have set up the CR102 for your device, you may find that there are one or more functions on your original remote which do not have a place on the CR102 keypad. For convenience, the CR102 offers a Code Learning feature that allows you to copy up to 16 functions from an original remote control onto the CR102 keypad.

Before you start, make sure that:

■ The original remote control is working correctly.

■ The remotes are not pointing at your device.

■ The remotes have new batteries.

■ The remotes are not in direct sunlight or under strong fluorescent lights.

> Learned functions are mode-dependent: You could theoretically assign up to eight different functions to a single key (the CR102 can handle a total of 16 learned functions).

Example: To copy the 'text hold' function from a TV remote onto the ⏩ key of your CR102

1. Place both remotes on a flat surface, 2 to 5cm apart, with the IR ports facing each other.

2. On the CR102, press and hold ⒮ⒽⒾⒻⓉ until the power LED blinks twice: ☼ ☼.

3. Press ⑨ ⑦ ⑤. The power LED blinks twice: ☼ ☼.

4. On the CR102, press the device key that matches the 'source' device (e.g. if you're learning a TV function, press (AV)).

5. On the CR102, press the key to which you want to assign the learned function (e.g. ⏩). The device key blinks rapidly.

6. On the original remote, press and hold the function key that you want to learn (e.g. **TEXT HOLD**) until the CR102 device key blinks twice: ☼ ☼.

7. If you want to learn other functions from the same source device, simply repeat steps 5 and 6 pressing the next key you want to learn.

8. To exit Code Learning mode, press and hold ⒮ⒽⒾⒻⓉ until the device key blinks twice: ☼ ☼.

9. To use the learned function on the CR102, press the Device Mode key, followed by the function key. In this example, you'd press (AV) followed by ⏩

Shifted Learning

You can assign a learned function to a CR102 key without sacrificing its original function.

You can assign Shifted Learning functions to any key **except** for: Device Mode keys (e.g. (AV)), ⒮ⒽⒾⒻⓉ, or number keys (⓪ to ⑨).

1. To assign a Shifted Learning function, simply follow Code Learning steps in the previous section. During step 5, press ⒮ⒽⒾⒻⓉ once before you press the key to which you want to assign the learned function.

2. To access the shifted function, press ⒮ⒽⒾⒻⓉ and then the target key.

Important notes

■ Once you start a Code Learning session, you have approximately 10 seconds to conduct each step. Any longer, and a timeout means that you'll have to start the process again.

■ The Learning feature is mode-specific – you can copy one feature *per mode* onto a key.

■ The CR102 can learn approximately 16 functions in total.

■ To replace a learned function, simply assign a new one to the same key.

■ Learned functions *are* retained when you change batteries.

■ If Code Learning fails, try altering the distance between the two remotes; make sure that the light in the area is not too bright.

To delete a learned function

1. Press and hold ⒮ⒽⒾⒻⓉ until the power LED blinks twice: ☼ ☼.

2. Press ⑨ ⑦ ⑥. The power LED blinks twice: .

3. Press a Device Mode key once. For example, if you want to delete one of your learned TV functions, press (AV).

4. Press twice on the key you want to deassign. The handset blinks twice: ☼ ☼ to confirm.

The original function of the CR102 is restored.

To delete a Shifted Learned function:

To delete a Shifted Learned function, press ⒮ⒽⒾⒻⓉ before you press the key to be deassigned (during step 4 above).

To delete ALL learned functions within a given Device Mode

1. Press and hold ⒮ⒽⒾⒻⓉ until the power LED blinks twice: ☼ ☼.

2. Press ⑨ ⑦ ⑥ – the power LED blinks twice: ☼ ☼.

3. Press the appropriate Device Mode key twice.

Creating Macros

You can program your CR102 to issue a sequence of commands when you press a single key. Any sequence of commands you regularly use can be reduced to a single key press for your convenience.

For example, you might want to turn off your TV, VCR and Satellite at the same time.

- A key programmed with a Macro is available in all modes; it will replace that key's different functions for all modes.
- A Macro can consist of up to eight key presses.

Example: To assign a Macro to the (SRCH) key

1. Press and hold (SHIFT) until the power LED blinks twice: ☼ ☼.
2. Press (9) (9) (5).
3. Press (SRCH) (the Macro will be assigned to this key).
4. Press a, (⏻), (VCR), (⏻), (SAT), (⏻). (These are the Macro steps you wish to record.)
5. To store the Macro, press and hold (SHIFT) until the power LED blinks twice: ☼ ☼.

Now, whenever you press (SRCH), the CR102 will toggle the power to your TV, VCR and Satellite.

- The important word here is 'toggle'. For example, if the TV and Satellite devices are currently on, but the VCR is off, pressing (SRCH) will switch off the TV and Satellite and switch on the VCR (rather than switching all three devices on or off).
- When using Macros, remember that you may need to change mode or use (SHIFT), and that each key press (including changing modes and pressing (SHIFT)) counts as one of the Macro steps. You cannot use a Macro key within another Macro.
- If the amount of memory storage for a particular Macro is exceeded, the power LED comes on for five seconds. You can, however, save the macro steps up to that point by pressing (SHIFT), or you can cancel the Macro recording by pressing any other key.
- The delay between key presses is recorded as part of the Macro. A delay of up to 30 seconds is permitted.

Example: To deassign the Macro associated with the (SRCH) key

1. Press and hold (SHIFT) until the power LED blinks twice: ☼ ☼.
2. Press (9) (9) (5).
3. Press (SRCH).
4. Press and hold (SHIFT) until the power LED blinks twice: ☼ ☼.

Volume punch-through

Volume punch-through means that, no matter which Device Mode is selected, the CR102 controls the AVR500, AVR600 or AV888 volume. You don't need to press (AMP) on your CR102; this feature is switched on by default.

There are times, however, when you might want to control a device's volume directly when in a specific Device Mode.

Example: To cancel volume punch-through for a TV (AV mode)

1. Press (AV) once.
2. Press and hold (SHIFT) until the power LED blinks twice: ☼ ☼.
3. Press (9) (9) (3).
4. Press (−). The power LED blinks four times.

Now, while in TV (AV) mode, you will be able to control the volume or mute functions of your TV directly.

To completely cancel all volume punch-through settings

1. Press and hold (SHIFT) until the power LED blinks twice: ☼ ☼.
2. Press (9) (9) (3).
3. Press (+). The power LED blinks four times ☼ ☼ ☼ ☼.

Now, whichever mode you're in, you will have direct access to that device's volume or mute functions, assuming they are available. You would need to switch to **AMP** mode to alter the AVR500/AVR600/AV888 volume.

Example: To restore default volume punch-through settings to all Device Modes

1. Press and hold (SHIFT) until the power LED blinks twice: ☼ ☼.
2. Press (9) (9) (3).
3. Press (AMP). The power key LED blinks twice: ☼ ☼.

Key Mover

Sometimes you might find that a key you use a lot for your system is in the 'wrong' place on the CR102 keypad for your comfort. It's quite easy to reassign a favourite function to a more accessible key. It is even possible to move a function from one Device Mode to another Device Mode.

Example: To assign the (DISP) function to the (MENU) key in SAT mode

1. Press (SAT).
2. Press and hold (SHIFT) until the power LED blinks twice: ☼ ☼.
3. Press (9) (9) (4).
4. Press the key you want to move (e.g. (DISP))
5. Press the key you want to move the key to (e.g. (MENU)).

Now, pressing either (DISP) or (MENU) while in SAT Device Mode makes the CR102 transmit the (DISP) function.

To completely swap over the functionality of the two keys to put the (MENU) functionality on the (DISP) key, repeat the above process again, but swap over the (DISP) and (MENU) key presses in the example.

Note that the function that is copied over to the new key is always the original function of the old key.

Restore a moved key

To restore a key to its previous function, repeat the example above, pressing the key to be restored twice (copy it back to itself).

Restore all moved keys for a Device Mode

To restore all keys in a Device Mode to their original functional positions, repeat the example above, but press the relevant Device Mode key (e.g. (AMP)) at points 1,4 and 5 in the example.

Copy a key between Device Modes

It is possible to copy functions between Device Modes. However, remember that button functions are Device Mode specific and therefore effectively 'punch-through' to the original Device Mode when copied over.

The following example copies the AVR500/AVR600/AV888 **DIRECT** function from the CR102 **AMP** device mode to the shifted function of the (■) button on **AV** Device Mode.

1. Press and hold (SHIFT) until the power LED blinks twice: ☼ ☼.
2. Press (9) (9) (4).
3. Press the Device Mode key of the function you want to move (e.g. (AMP)).
4. Press the function key you want to move (e.g.(◄◄)/ **DIRECT**)
5. Press the key of the Device Mode you want to copy the function to (e.g. (AV))
6. Press the (SHIFT) button graphic
7. Press the key you want to copy the function to (e.g. (■))

If you prefer to copy the key to the main function of the (■) button instead of the 'shifted' function, omit point 6 in the above example.

Mode Mover

If your home entertainment setup contains devices of the same type (e.g. two TVs, perhaps from different manufacturers) you can still control both those devices with the CR102. You simply need to reassign an *unused* Device Mode key.

> **NOTE**
>
> Before using Mode Mover, make sure both the source and destination Device Mode keys are unlocked (see next section).

Example: To use the (SAT) key to control a second TV

1. Press and hold (SHIFT) until the power LED blinks twice: ☼ ☼.
3. Press (9) (9) (2).
3. Press the Device Mode key for the type of device you want to control (e.g. for a TV, press (AV)).
4. Press the Device Mode key you want to use (e.g. (SAT)).
5. Don't forget to set up the CR102 to control the second device, using one of the methods on page 25.

Note that volume punch-through is not applied to a Device Mode that has been copied using Mode Mover. However, volume punch-through functionality can be restored when you have used Mode Mover, by copying (−), (+) and (🔇) from the AMP Device Mode to the same physical buttons on the new moved Device Mode using the last example shown in Key Mover.

To restore a moved Device Mode key to its original state

1. Press and hold (SHIFT) until the power LED blinks twice: ☼ ☼.
2. Press (9) (9) (2).
3. Press the Device Mode key you want to restore *twice*.

Locking/Unlocking a specific Device Mode

When you first unpack your CR102 and insert the batteries, for your convenience it is able to control certain Arcam components automatically (e.g. DVD players, Amplifiers, Tuners and CD Players). We achieve this by preprogramming specific Arcam device codes onto the relevant Device Mode keys, then locking the Device Modes so you don't reprogram them inadvertently.

If you want to override these locked default settings – to control a third-party DVD player, for example – you will first need to unlock DVD Mode before setting up the CR102 using one of the methods described at the start of this guide.

Here are the factory default settings:

Device Mode	Default status	Default Arcam codes
DVD	Locked	0762
SAT	Unlocked	1205
AV	Unlocked	0586
TUN	Locked	2009
AMP	Locked	1242
PVR	Unlocked	1930
VCR	Unlocked	0111
CD	Locked	2010

Alternative codes are available for multi-room solutions, or in the case of code clashes with other manufacturer's products.

For example:

DVD (system code 12)   1655
AMP (system code 19)   1954

You will need to change the system code on the product you wish to control, as well as the CR102.

> **NOTE**
>
> The **AMP** Device Mode can only be used to control Arcam amplifiers like the AVR500, AVR600 and AV888, either on its default or alternative IR system codes.

To toggle a Device Mode lock setting:

1. Press the Device Mode key you want to unlock (e.g. (DVD))
2. Press and hold (SHIFT) until the power LED blinks twice: ☼ ☼.
3. Press (9) (8) (2).

■ The power LED blinks twice when being locked, and blinks four times when being unlocked.

■ If you enter an invalid key sequence, the power LED gives one long blink and returns to normal operation.

While the Device Mode key is locked, the Direct Code Setup and Move Mode functions are not available.

Mode key IR punch-through

The Mode key IR punch-through default is 'on'.

Example: To set the Mode key IR punch-through to AMP

1. Press and hold (SHIFT) until the power LED blinks twice: ✵ ✵.
2. Press (9)(7)(1). The power LED blinks twice: ✵ ✵.
3. Press (AMP) to punch through IR from it.

Now, whenever you press and release a Mode key, the IR data assigned to **AMP** is transmitted, no matter what the current mode is (i.e. it 'punches through' any other device).

To cancel Mode key IR punch-through

1. Press and hold (SHIFT) until the power LED blinks twice: ✵ ✵.
2. Press (9)(7)(1). The power LED blinks twice: ✵ ✵.
3. Press (SHIFT) until the power LED blinks twice: ✵ ✵.

Resetting the CR102

Resetting the CR102 will erase all learned functions across all modes, as well as some other programmed functions like Macros. It will not reset the Device Mode keys; these will remain programmed to your choice of component.

1. Press and hold (SHIFT) until the power LED blinks twice: ✵ ✵.
2. Press (9)(8)(0). The power LED blinks four times: ✵ ✵ ✵ ✵.
3. Press and hold (SHIFT) until the power LED blinks twice: ✵ ✵.
4. Press (9)(9)(3).
5. Press (AMP). The power key LED blinks twice: ✵ ✵.
6. Press and hold (SHIFT) until the power LED blinks twice: ✵ ✵.
7. Press (9)(7)(1). The power LED blinks twice: ✵ ✵.
8. Press (AMP). The power key LED blinks twice: ✵ ✵.

Command summary

Direct code setup
(e.g. AV mode, NNNN=code number)
(AV) (SHIFT) ✵ ✵ NNNN ✵ ✵ (⏻)

Library search
(e.g. AV mode)
(AV) (SHIFT) (9)(9)(1) ✵ ✵ (⏻) (▶) until unit turns off
(SHIFT) to save

Code blink back
(AV) (SHIFT) (9)(9)(0) ✵✵✵
(1) count blinks for first *N*
(2) count blinks for second *N*
(3) count blinks for third *N*
(4) count blinks for fourth *N*

Code learning
(e.g. AV mode fast forward key)
(SHIFT) ✵ ✵ (9)(7)(5) ✵ ✵ (AV) (▶▶) ✵ (many rapid blinks)
(Press key on original remote that you wish to copy)
✵ ✵ (SHIFT) ✵ ✵

Delete a learned function
(e.g. AV mode fast forward key)
(SHIFT) ✵ ✵ (9)(7)(5) ✵ ✵ (AV) (▶▶) (▶▶) ✵ ✵

Delete all learned functions with a device
(e.g. AV mode)
(SHIFT) ✵ ✵ (9)(7)(5) (AV) (AV)

Creating macros
(e.g. SRCH key)
(SHIFT) ✵ ✵ (9)(9)(5) (SRCH) (AV) (⏻) (VCR) (⏻) (SAT) (⏻) (SHIFT) ✵ ✵

Deassign macro
(SHIFT) ✵ ✵ (9)(9)(5) (SRCH) (SHIFT) ✵ ✵

Key mover
(e.g. SAT mode, DISP key to MENU key)
(SAT) (SHIFT) ✵ ✵ (9)(9)(4) (DISP) (MENU)

Mode mover
(e.g. change SAT to TV(AV))
(SHIFT) ✵ ✵ (9)(9)(2) (AV) (SAT)

Restore device mode
(e.g. restore SAT)
(SHIFT) ✵ ✵ (9)(9)(2) (SAT) (SAT)

Locking/unlocking a mode
(e.g. DVD mode)
(DVD) (SHIFT) ✵ ✵ (9)(8)(2) ✵ ✵
(i.e. two blinks for lock)
(DVD) (SHIFT) ✵ ✵ (9)(8)(2) ✵ ✵ ✵ ✵
(i.e. four blinks for unlock)

Cancel all volume punch-through
(SHIFT) ✵ ✵ (9)(9)(3) (+) ✵ ✵ ✵ ✵

Restore volume punch-through
(SHIFT) ✵ ✵ (9)(9)(3) (AMP) ✵ ✵

Mode key IR punch-through
(SHIFT) ✵ ✵ (9)(7)(1) ✵ ✵ (AMP)

Cancel mode key IR punch-through
(SHIFT) ✵ ✵ (9)(7)(1) ✵ ✵ (SHIFT) ✵ ✵

> *NOTE*
> As elsewhere in this Handbook, a single 'blink' of the red LED behind the power button is indicated by the symbol ✵.

Device codes

The tables that begin on page 64 (in the final section of this Handbook) list the four-figure codes for different manufacturers' devices.

Use these when setting your CR102 up to control your devices, as described in Method 1 (see page 30).

If more than one code number is listed, try the first number. If the results are unsatisfactory, continue trying the numbers for that manufacturer to get the best 'fit' with the functionality required.

If the manufacturer of your equipment is not listed, you can try Method 2, the Library Search (see page 30). This allows you to scan through every set of codes contained in the CR102's memory.

trouble-shooting

Problem	Check that...
There are no lights on the unit	■ the power cord is plugged into the unit and the mains socket it is plugged into is switched on. ■ the power button is pressed in. If a red LED is present, the unit is in standby mode. Press any button on the front panel or remote control.
The unit responds erratically or not at all to the remote control	■ there are fresh batteries in the remote control. ■ the front panel window is visible and you are pointing the remote control towards it.
The front panel display is blank	■ the display hasn't been turned off. Press the DISPLAY button on the front panel or remote control.
No picture is being produced	■ your viewing device is turned on and switched to display your AVR500/AVR600/AV888. Test by pressing the MENU button on the AVR500/AVR600/AV888 or on the remote and look for the main menu screen on your display device. ■ the correct video input is selected on the AVR500/AVR600/AV888. ■ the video source is on, is operating normally, and is in 'play' mode if appropriate. ■ you have the AVR500/AVR600/AV888 in a video resolution that is compatible with the connection you are using and with your display device. For example, composite video is only capable of carrying 480i and 576i resolutions. Test this by pressing and holding the OK key for more than two seconds to force 480i / 576i output resolutions.
There are bright edges or 'ghosts' on the picture	■ the cables used for analogue video connections are designed to carry video (i.e., they are 75Ω coaxial cables). ■ ensure the 'sharpness' control on your display device is switched off or set to near minimum. ■ for HDMI connections, try using a shorter cable or alternatively a different brand.
No sound is produced	■ the correct input has been selected. ■ the source equipment is on, is operating normally and is in 'play' mode if appropriate. ■ the volume is turned up to a reasonable level and the unit is not in mute mode.
The sound is poor or distorted	■ you have not excessively increased the input sensitivity (i.e. reduced the maximum input signal voltage) in the Input Config. menu if an analogue input is being used. ■ you have selected the correct size of speakers to suit your system in the setup menu.

Problem	Check that...
Sound only comes from some of the speakers	■ you have an appropriate surround source selected and playing. ■ the DVD disc is encoded in the appropriate format, and the correct format has been selected in the disc start menu of the DVD player (if applicable). ■ the DVD player has been set to output 'bitstream' audio on the digital output. ■ the display window indicates that the disc you are playing is a multichannel recording (you may need to press the **INFO** key several times until you get to the 'incoming format' display). ■ all the speakers are correctly connected to the speaker terminals and are secure. ■ you have not selected 'Stereo' as the decoding mode. ■ your speaker balance is correct. ■ you have configured the unit to include all the speakers in your system.
Unable to select Dolby Digital or DTS decoding modes	The AVR500/AVR600/AV888 can only apply Dolby Digital and DTS decoding to sources which have been encoded in the same format. Check that: ■ digital source is selected and connected. ■ the source is playing appropriately encoded material. ■ the DVD disc is encoded in the appropriate format and that the correct format has been selected in the disc start menu of the DVD player (if applicable). ■ the DVD player has been set to output 'bitstream' audio on the digital output (not PCM).
When playing a Dolby Digital DVD, the AVR600 selects Dolby Pro Logic	■ you have a digital connection from your DVD player. ■ sometimes Dolby Digital DVD discs contain material at either the beginning or the end of the main movie that is not in full 5.1 format, but in two-channel or Pro Logic decoding.
Hum on the analogue input	■ all cables are making a good connection. If necessary withdraw the cable from the connector and plug it fully in again (turn the power off before doing this). ■ the connections inside the source cable connector are not broken or badly soldered. ■ if the hum originates only when one particular source component is connected, that an aerial cable, or dish connection to this source is ground isolated. Contact your installation contractor.
There is radio or television reception interference	■ where the interference is coming from. Switch off each source component in turn, then any other equipment. Most electronic equipment does generate low levels of interference. ■ try re-arranging cabling from the nuisance source away from other cabling. ■ ensure that the cabling used is high quality, specified for its purpose, and is properly screened. ■ if the problem persists, contact your dealer.

Problem	Check that...
The source switching changes randomly or freezes on one source	■ there are no static or impulse interference problems caused by nearby power equipment switching, e.g., heating or air conditioning control. Switch the unit off, wait ten seconds, then switch it on again to clear an operating problem. Contact your installer if the problem returns or persists. ■ there is no direct sunlight shining on the infra-red detector behind the front panel display.
Volume is always too loud when I turn on	■ the 'max on volume' setting is not set too high.
When Zone 2 or 3 is put into standby, the main zone is also switched off	■ the 'zone standby' setting in the setup menu is set to LOCAL.
When a USB memory device is connected, 'USB' is not shown in the network client's list of folders	■ a USB memory device is connected that conforms to the mass storage class. ■ a USB hub is not being used.
If files on a USB memory device cannot be played:	■ the USB device is formatted in FAT16 or FAT32. ■ the USB device does not have multiple partitions. ■ the files are in a compatible format.
If files on a computer cannot be played	■ the files are in a compatible format. ■ the computer is connected via a network and not USB – the AVR500/AVR600/AV888 USB port cannot be used for a direct connection to a computer
If you cannot connect to a wired network	■ the Ethernet cable you are using is correctly connected between the AVR500/AVR600/AV888 and the network hardware. ■ the network is set up for fixed IP addressing and you have the AVR500/AVR600/AV888 set to use DHCP. ■ the network is set up for DHCP and you have the AVR500/AVR600/AV888 set to use fixed IP addressing.
If you cannot connect to a favourite internet radio station	■ the station is still broadcasting or is not congested – try again later.
If the internet radio station sound quality is poor or broken	■ the radio station does not have a low bit rate (use the **INFO** key to find this or look on the OSD). ■ the network is not slow or congested.

specifications

Continuous power output (20Hz—20kHz at 0.05% THD), per channel (AVR600)	
2 channels driven	150W
All channels driven	120W
THD at full rated power	<0.2%
Residual noise & hum	<0.25mV unweighted 20Hz – 22kHz

Continuous power output (20Hz—20kHz at 0.05% THD), per channel (AVR500)	
2 channels driven	120W
All channels driven	100W
THD at full rated power	<0.2%
Residual noise & hum	

Inputs	
Phono input:	
Input sensitivity at 1kHz	5mV
Input impedance	47kΩ
Signal/noise ratio (CCIR, 65W)	88dB
Overload margin	31dB
Line inputs:	
Nominal sensitivity	500mV–4V (user adjustable)
Input impedance	47kΩ
Signal/noise ratio (CCIR, 65W)	100dB

Preamplifier outputs	
Max output level	6V RMS
Output impedance	<50Ω
THD+N (20Hz—20kHz)	-100dB

Video inputs	
Component video signal/noise	85dB
Composite video signal/noise	70dB

Headphone output	
Maximum output level into 600Ω	4V p-p
Output impedance	<5Ω

General	
Mains voltage	110–120V or 220–240V
Power consumption (maximum)	
AVR500/AVR600	1.5kVA (Thermal dissipation approx. 2300 BTU/hour)
AV888	120VA (Thermal dissipation approx. 410BTU/hour)
Power consumption (idle, typical)	120VA (Thermal dissipation approx. 410 BTU/hour)
Power consumption (standby)	3VA
Dimensions W x D x H (including feet)	432 x 450 x 180mm
Weight (net)	
AVR500	23.0kg
AVR600	25.0kg
AV888	12.0kg
Weight (packed)	
AVR500	28.0kg
AVR600	30.0kg
AV888	17.0kg
Supplied accessories	Mains lead
	CR102 remote control
	4 x AAA batteries
	Manual
	HDMI lead support bar
	DAB aerial (if DAB module fitted)
	FM aerial (if AM/FM fitted)
	AM loop aerial (if AM/FM fitted)
	Calibration microphone

E&OE

NOTE: All specification values are typical unless otherwise stated.

Continual improvement policy

Arcam has a policy of continual improvement for its products. This means that designs and specifications are subject to change without notice.

product guarantee

Worldwide Guarantee

This entitles you to have the unit repaired free of charge, during the first three years after purchase, at any authorised Arcam distributor provided that it was originally purchased from an authorised Arcam dealer or distributor. The manufacturer can take no responsibility for defects arising from accident, misuse, abuse, wear and tear, neglect or through unauthorized adjustment and/or repair, neither can they accept responsibility for damage or loss occurring during transit to or from the person claiming under the guarantee.

The warranty covers:

Parts and labour costs for three years from the purchase date. After three years you must pay for both parts and labour costs. **The warranty does not cover transportation costs at any time.**

Claims under guarantee

This equipment should be packed in the original packing and returned to the dealer from whom it was purchased, or failing this, directly to the Arcam distributor in the country of residence.

It should be sent carriage prepaid by a reputable carrier – **not** by post. No responsibility can be accepted for the unit whilst in transit to the dealer or distributor and customers are therefore advised to insure the unit against loss or damage whilst in transit.

For further details contact Arcam at:

Arcam Customer Support Department,
Pembroke Avenue, Waterbeach, CAMBRIDGE, CB25 9QR, England

or via *www.arcam.co.uk*.

Problems?

If your Arcam dealer is unable to answer any query regarding this or any other Arcam product please contact Arcam Customer Support at the above address and we will do our best to help you.

On-line registration

You can register your product on-line at *www.arcam.co.uk*.

Correct disposal of this product

This marking indicates that this product should not be disposed with other household waste throughout the EU.

To prevent possible harm to the environment or human health from uncontrolled waste disposal and to conserve material resources, this product should be recycled responsibly.

To dispose of your product, please use your local return and collection systems or contact the retailer where the product was purchased.

device code tables

TV

Brand	Codes
888	0294
A.R. Systems	0067 0382 0586 0404 0485
Accent	0039 0067 0586
Acoustic Research	1299
Acura	0039
Adcom	0655
Addison	0683 0138
ADL	1247
Admiral	0123 0193 0448 0294
Advent	0906
Adyson	0247 0246
AEA	0067 0586
AEG	0636 1193
Agashi	0246 0294 0247
Aiko	0039 0067 0586 0246 0065 0463 0294 0247
Aim	0067 0586 0783 0238 0736
Aiwa	1535
Akai	0039 0632 0238 0586 0067 0463 0065 0783 0193 0759 0744 0745 0578 0510 0247 0661 0246 0294 0208 0407 0636 1067 0503 1289 1278
Akashi	0890 0039
Akiba	0485 0067 0586
Akira	0448
Akito	0067 0586
Akura	0067 0294 0586 0698 0039 0744
Alaron	0246
Alba	0039 0067 1067 0586 0744 0448 0400 0698 0246 0193 0517 0473
Alkos	0065
All-Tel	0895
Allorgan	0247
Allstar	0067 0586
Amplivision	0247 0400
Amstrad	0039 0067 0294 0463 0586 1067
Anam	0067 0586 0039 0680
Anam National	0067 0586 0680
Andersson	1193 1179
Anglo	0039 0294
Anitech	0039 0294 0067 0586
Ansonic	0400 0067 0586 0039 0698 0404 0193
AOC	0039 0090 0123 0138 0208
Aolingpike	0294
Apex Digital	1247
Apollo	0503
Arc en Ciel	0139
Arcam	0246 0247
Ardem	0516 0744 0067 0663 0586
Aristona	0586 0067
Arthur Martin	0193
ASA	0135 0376 0100
Asberg	0067 0586
Asora	0039
Astra	0067 0586
Asuka	0247 0246 0294
ATD	0728
Atlantic	0067 0586 0246
Atori	0039
Auchan	0193
Audiosonic	0039 0067 0404 0850 0139 0586 0744 0745 0247 0400 0294 0516
Audioton	0247 0516 0400 0294
Audioworld	0728
Aumark	0090
Autovox	0247
AWA	0039 0404 0067 0586 0246 0636 0247 0138 0294 1406
Axxent	0039
Axxon	0744
B&D	1247
Baier	0906
Baihe	0039 0294
Baile	0039 0404 0691
Baird	0139 0373 0247 0238 1226
Bang & Olufsen	0595
BaoHuaShi	0294
Baosheng	0039
Barco	0193
Basic Line	0039 0404 0067 0193 0698 0586 0247 0485 1067
Bastide	0247
Bauer	0039
Baur	0039 0067 0542 0225 0586 1535
Bazin	0247
Beaumark	0208
Beijing	0039 0238 0256 0294 0404 0512 0691
Beko	0400 0744 0065 0516 0745 0067 0448 1067 0586 0636 0838
Belson	1221
Bennett	0586 0067
Beon	0067 0586 0448
Berthen	0698
Best	0400
Bestar	0067 0586 0400
Bestar-Daewoo	0404
Binatone	0247
Black Diamond	0850 1067 0586 0783 1193
Black Strip	0065
Blaupunkt	0225 0230 0357 0485 0200
Blue Sky	0067 0586 0698 0744 1067 0517 0745 1939 0485 1221 0838 1393
Boots	0247 0039
Bosch	0357
BPL	0067 0586 0926
Brandt	0139 0655 0365 0373 0590
Brandt Electronique	0365
Brinkmann	0067 0586 0698 0448 0516
Brionvega	0067 0586
Britannia	0246 0247
Brother	0294
Bruns	0516
BSR	0193
Bush	0039 1067 0067 0744 0698 0193 0404 0728 0294 0517 0238 0247 0586 0808 1289 1278
C-Tech	0926 0921
Caihong	0039
Caishi	0921
Capsonic	0294
Carad	0640 0067 0586 0698 1067
Carena	0485 0067 0586
Carrefour	0100 0067 0586
Carver	0200
Cascade	0039 0067 0586
Casio	0067 0586 0193
Cathay	0067 0586
CCE	0067 0247 0586
Celestial	0850
Centrex	0810 0921
Centrum	1067
Centurion	0067 0586
CGE	0104 0448 0400 0193
Changcheng	0039 0294 0404 0691
Changfei	0039 0404
Changfeng	0294 0783
Changhai	0039
Changhong	0850 0039 0294 0538
Chengdu	0039
Ching Tai	0039
Chun Yun	0039
Chunfeng	0039 0294
Chung Hsin	0138
Chunsun	0039
Cimline	0039
Citizen	0090
City	0039
Clarivox	0067 0448 0586 0100
Clatronic	0067 0400 0744 0294 0586 0247 0039 0636 1193
Clayton	1067
CMS	0246
CMS hightec	0247
Cobolt	0921
Concorde	0039
Condor	0067 0400 0586 0246 0039 0448 0193 0294
Conia	0784 0850
Conrac	0838
Conrad	0067 0586
Conrowa	0039 0294 0728 0783 1200
Contec	0039 0246 0294 0067 0586
Continental Edison	0139 0517
Cosmel	0039 0067 0586
Crosley	0104 0193
Crown	0039 0742 0067 0400 0516 0586 0448 0517 0744 0636 0745 0238 0683 1067
CS Electronics	0246
Curtis Mathes	0090 0123
Cytronix	1328
D-Vision	0067 0586
Daewoo	0664 0691 0404 1939 0529 0067 0586 0039 0246 0247 1167 0208 0200 0910 0138 0906 0895
Dainichi	0246
Dansai	0067 0586 0294 0065 0246 0039 0247 0238
Dantax	0400 0516 0744 0636 0745
Datsura	0238
Dawa	0039 0067 0586
Daytek	0728 0736 1406
Dayton	0039
Daytron	0039 0404 0067 0586
Dayu	0404 0691
de Graaf	0238 0578 0193
DEC	0890 0921
Decca	0067 0586 0247 1167
Deitron	0067 0586 0404
Denko	0294
Denver	0067 0586 0636 1219 0617
Desmet	0067 0586 0039
Diamant	0067 0586
Diamond	0294 0728 0039 0855 0246 0890 0850
Digatron	0067 0586
Digihome	1179
Digiline	0067 0586 0135 0698
DigiLogic	0067 0586
Digitex	0850
Digitor	0067 0586
DigiX	0910
DiK	0067 0586
Dixi	0039 0067 0586 0247
DL	0921 0810 0067 0617 0895
Domeos	0698
Domland	0424
Dongda	0039
Donghai	0039
Dream Vision	1734
Drean	0067
DSE	0850
DTS	0039
Dual	0247 0373 0067 0586 0382 0424 0193 1167 0661 1179 1067
Dual Tec	0247
Dumont	0100 0247
Dunai	0193
Durabrand	0067 0586 0208
Dux	0067 0586
DVX	0921
Dynatech	0247
Dynatron	0067 0586
e:max	0636
Easy Living	1278 1289
Ecco	0803 0736
ECE	0067 0586
Edison-Minerva	0517
Elbe	0400 0193 0067 0586 0640 0247
Elcit	0193
Electrograph	1785
Elekta	0039 0067 0586 0294
Elfunk	1238 1067
ELG	0067 0586
Elin	0067 0246 0578 0586 0135 0193 0039
Elite	0067 0586
Elta	0039 0294 0246
Emerson	0208 0744 0067 0586 0100 1939 0516 0400 0193 0698
Enzer	0783
Erae	1401
Erres	0067 0586
ESC	0067 0586 0247
Estèle	0193
Ether	0039
Etron	0039 0067 0586 0193 0850
Eurofeel	0294 0247
EuroLine	0067
Euroman	0246 0294 0067 0586 0247 0400
Europa	0067 0586
Europhon	0067 0193 0247 0586 0246
Evesham	1278 1289
Excel	0067 0586
Expert	0193
Exquisit	0067 0586
Fagor	0067 0586
FairTec	1221
Family Life	0067 0586
Feilang	0039
Feilu	0039
Feiyan	0294
Feiyue	0039
Fenner	0404 0039
Ferguson	0067 0139 0655 0365 0373 0590 0586 0065 0683 0138 0578 0473 1067
Fidelity	0193 0246 0542 0067 0586 0294
Filsai	0247
Finlandia	0238 0376 0578 0193 0373
Finlux	0067 0135 0100 0586 0744 0376 0247 0193 0745 0661 0522 0510 0503 0448 0636 0838
Firstar	0039
Firstline	0039 0067 0246 0586 0247 0404 0698 0744 0193 1939 0238 1067 1221 0838 1393 1193 1401
Fisher	0247 0238 0400 0193
Flint	0067 0485 0586 0640 0294
Force	1179
Formenti	0067 0193 0586 0516 0246
Formenti-Phoenix	0246
Fortress	0123
Fraba	0067 0586 0400
Friac	0039 0067 0586 0400 0529 0640
Frontech	0193 0294 0247 0039
Fujimaro	0895
Fujitsu	0713 0883 0247 0193 0039 0382 0067 0586
Fujitsu General	0039 0247 0193
Fujitsu Siemens	1328 1289 1278 1193
Funai	0698 0294
Furi	0294
Furichi	0890
Futronic	0294 0890
Future	0067 0586
Galaxi	0067 0586 0193
Galaxis	0400 0448 0067 0586
Galeria	0039
Gateway	1785
GBC	0193 0039 0404
GE	0373 0208 0123 0590 0139 0365 0655
Geant Casino	0193
GEC	0067 0193 0247 0586
Geloso	0039 0193 0404
General	0139
General Electric	0373
General Technic	0039
Genesis	0039 0067 0586
Genexxa	0193 0067 0586 0039
Gericom	0895 1328 1247 0910
Gevalt	1401
Giant	0247
Go Video	0090
Goldfunk	0698
Goldhand	0246
GoldStar	0039 0067 0208 0400 0407 0247 0586 0246 0193 0139 0636 0744 0745 0485
Gooding	0517
Goodmans	0664 1289 1278 0067 1067 0529 0247 0586 0744 0373 0698 1939 0404 0294 0039 0517 0065 0510 0590 0365 0691 0910 0617 1406
Gorenje	0400
Gradiente	0067 0683 0200 0586
Graetz	0193 0744 0067 0586 1193
Granada	0067 0586 0238 0256 0247 0138 0503 0365 0590 0193 0373 0578
Grandin	0067 0586 0039 0193 0640 0744 0745 0698 0039 0744 0485 1067 0895 1221 0910
Gronic	0247 0193
Grundig	0225 0538 1401 0067 0100 0517 0586 0617 0473 0736 0039 0400 0208 1406 0373
Grunkel	1193
H&B	0838
Haaz	0736
Haier	0728 0921 0294
Haihong	0039
Haiyan	0294
Halifax	0294 0246 0247
Hallmark	0208
Hammerstein	0294 0090
Hampton	0246 0247
Hankook	0208
Hanseatic	0067 0586 0529 0193 0691 0424 0664 0400 0039 0247 0407 0744 0838 0516
Hantarex	0039 0067 0586
Hantor	0067 0586
Harsper	0895
Harwa	0803 1226 1299

Brand	Codes		Brand	Codes		Brand	Codes
Harwood	0039 0067 0586 0517		Innova	0067		Kingsley	0246
Hauppauge	0067 0586		Innovation	0067 0586		Kioto	0736 0586
Havermy	0123		Innowert	0895 1328		Kiton	0586 0067 0698
HCM	0039 0067 0586 0247 0448 0294		inotech	0803 0850		KLL	0067
Hedzon	0586 0067		Interactive	0067 0586 0542 0357 0193 0400 0139		Kneissel	0067 0400 0640 0404 0529 0586
helios	0895					Kolin	0138
Hema	0247 0039		Interbuy	0039 0067 0294 0542 0586		Kolster	0067 0586
Hifivox	0139					Kongque	0039 0294
Higashi	0246		Interfunk	0067 0193 0586 0542 0357 0400 0139 0230		Konichi	0039
Highline	0294 0067 0586					Konka	0067 0586 0744 0448 0617 0784
Hinari	0039 0238 0067 0586 0193 0473 0517 0294		Internal	0067 0586 0529 0404 1939			
			International	0246		Kontakt	0517
Hisawa	0485 0640 0744		Intervision	0067 0247 0485 0294 0407 0516 0400 0424 0517 0193 0039 0586		Korpel	0067 0586
HISense	1393 0238 0039 0538 0783 1200 1238 0810 0586					Korting	0400
						Kosmos	0067 0586
Hitachi	0193 0208 1255 0039 0608 0135 0138 0503 0373 0247 0139 0511 0529 0067 0538 0586 0578 0664 0774 1067 1167 1200 0522 1511 0542 0510 1606 1179		Irradio	0039 0067 0586		Kotron	0294
			IRT	0728		Koyoda	0039
			Isukai	0067 0586 0485		Kreisen	0906
			ITC	0247		KTV	0247
			ITS	0067 0294 0246 0039 0586		Kuaile	0039 0294
			ITT	0193 0510 0578 0503 0376 0238 0640		Kuba	0193
						Kuba Electronic	0193
			ITT Nokia	0578 0193 0503 0510 0376 0238 0636 0640 0661		Kulun	0039
						Kunlun	0238 0256 0294 0404 0691
Hitachi Fujian	0138		ITV	0294 0067 0586 0404		Kyoshu	0448 0294
Hitsu	0039 0640 0485		IX	0907		Kyoto	0193 0246 0247
Höher	0744 0895		Jean	0039		L&S Electronic	0895 0744
Home Electronics	0636		JEC	0065		LaSAT	0516 0400
Hongmei	0039 0123 0294		Jialicai	0039 0294		Lavis	1067 0067 0193
Hongyan	0294		Jinfeng	0238 0256		Leader	0039
Hornyphon	0067 0586		Jinque	0039 0294		Lecson	0067 0586
Hoshai	0485		Jinta	0039 0294		Legend	0039
Hua Tun	0039		Jinxing	0039 0586 0067 0294 0728		Lenco	0067 0039 0193 0404 0586 0617 1067
Huafa	0039						
Huanghaimei	0039		JMB	0067 0529 0664 0404 0586 0473			
Huanghe	0039		Jocel	0742		Lenoir	0039
Huanglong	0039		Jubilee	0586		Levis Austria	0067 0586
Huangshan	0039 0294		Juhua	0294		Lexsor	1226
Huanyu	0246 0404 0294		JVC	0683 0761 0538 0636 0713 0448 0123 0680		Leyco	0067 0294 0586
Huaqiang	0294					LG	0067 0208 0400 0039 0407 1295 0586 0247 0744 0246 0674 0193 0090 0138 0636 0139 0728 0745 1667 1221
Huari	0294		Kaige	0039 0294			
Hugoson	0920 1247		Kaisui	0039 0246 0067 0247 0586 0485			
Hygashi	0247 0246						
Hyper	0039 0246 0247		Kambrook	0407			
Hypson	0067 0294 0586 0744 0745 0247 0485 1067 0698 0516		Kamp	0246			
			Kanghua	0926		Liesenk & Tter	0067 0357 0586
			Kangli	0039 0294 0404 0691		Liesenkotter	0067 0357 0586
Hyundai	0067 0895 0586 0736 0890 0783 0906		Kangyi	0039 0294		Lifetec	0067 0039 0404 0698 0542 1067 1167 0586 0294 0713 1278 1289 0744
			Kapsch	0193			
Iberia	0067 0586		Karcher	0067 0586 0400 0640 0193 0294 0808 0744 0636			
ICE	0247 0294 0067 0039 0586 0246						
						Lloyd's	0039
Ices	0246					Local Malaysia TV	0728
Ict	0067 1167 0586		Kathrein	0586 0067		Lodos	1067 1179
IISonic	1406		Kawasho	0246		Loewe	0542 0663 0820 0067 0586 0400
Iiyama	1247 0920		KB Aristocrat	0193			
Imperial	0067 0104 0193 0400 0448 0586		Kendo	0067 0640 0586 0193 0542 0400 0407 1067 0516		Logik	0090 0728 0803 0039 0294 0910 1247 1067
Imperial Crown	0039 0294 0404 0691						
			Kennedy	0193		Logix	0698
Indiana	0067 0586		Kennex	1067		Longjiang	0294
InFocus	0782 1194		Kenwood	0135		Luma	0067 0193 0586 0404 0039
Ingelen	0193 0517 0640 0744		Khind	0926 0736		Lumatron	0067 0586 0193 0247 0294
Ingersoll	0039		KIC	0247		Lux May	0067 0039 0586
Inno Hit	0039 0067 0586 0247 1193						

Brand	Codes		Brand	Codes		Brand	Codes		Brand	Codes
Luxor	1193 0510 0522 0238 0578 0193 0376 0503 1067 0247 0661		Mitsubishi	0138 0123 0542 0067 0208 0586 0238 1067		Nurnberg	0193		Pioneer	0790 0067 0139 0200 0193 0586 1290 0400 0373 0516 0542
			Mitsuri General	0193		Oceanic	0193 0238 0503 0578 0510			
LXI	0208		Mivar	0246 0400 0639 0247		Odeon	0294		Pionier	0400 0516
Madison	0067 0586		Monaco	0039		Okano	0400 0067 0586 0294 0039		Plantron	0067 0586 0294 0039
Magnadyne	0193		Morgan's	0067 0586						
Magnafon	0246		Motorola	0123		Olidata	1406		Playsonic	0744 0067 0247 0745
Magnavox	0067 0586 0736 0810		MTC	0090 0400 0542 0193 0246		Omega	0294			
						Omni	0810 0921 0728		Polaroid	0895
Magnum	0744 0067 0586 0745 1319		MTlogic	0744		Onwa	0632 0463		Policom	0139 0193 0100 0104
			Mudan	0039 0238 0256 0294		Opera	0067 0586			
Mandor	0294					Optimus	0680		Poppy	0039
Manesth	0067 0247 0586 0294 0065 0193		Multitec	0067 0586 0516 0698 1067		Optonica	0123		Portland	0404 1939
						Orbit	0067 0586		Powerpoint	0517 0067 0586 0728
Manhattan	0067 0906 0586 0698 1067 0193 0808		Multitech	0039 0246 0516 0067 0247 0400 0586 0294		Orion	0067 0473 0586 0744 0039 0294 0910 1226			
									Precision	0247
Marantz	0067 0586		Murphy	0246 0193		Orline	0067 0586		Premier	0039 0294
Mark	0067 0586 0247 0246 0404 0039 0744 0745		Musikland	0067 0586		Ormond	0698 1067 0067 0586		President	0890
			MyCom	1406 0208		Osaki	0247 0294 0067 0404 0586		Prima	0039 0294 1299
Master's	0529 0067		Myrrad	0586 0067					Princess	0728
Mastro	0810 0728		NAD	0208 0193		Osio	0067 0586		Prinston	1067
Masuda	0039 0294 0067 0247 0586		Naiko	0067 0636 0586		Osume	0067 0586		Profex	0039 0193
			Nakimura	0404 0067 0586		Otto Versand	1535 0067 0247 0373 0123 0542 0586 0225 0139 0256 0039		Profi	0039
Matsui	0039 0067 0586 0065 0517 0238 0247 0473 0463 0485 0193 0225 0365 0744 1067		Nanbao	0039 0294					Profitronic	0067 0586
			Nansheng	0294					Proline	0067 0586 0655 0664 1406
			Naonis	0193						
			NAT	0256		Pacific	0067 0586 1167 0744 1067 0473		Prosonic	0067 0586 0400 0404 0698 0744 0246 0247
			National	0256 0238 0538						
Matsushita	0680		NEC	0200 0617 1200 0208 0039 0485 0404 0247 0067 0586 0294 0538 1734 0529 0683 0691		Pael	0246		Protech	0039 0067 0586 0247 0294 0448 0698 0193 0516 1067
Matsuviama	0617					Palladium	0400 0067 0448 0744 1167 1535 0230 0586 0357 0193 0247			
Maxam	0294									
Maxdorf	0803									
Maxent	1785								Proton	0208 0039 0674
MCE	0039					Palsonic	0294 0803 0067 0247 0407 0728 0586 0448 0808 1226		Provision	0529 0067 0586 1067 0744
Meck	0921 0728		Neckermann	0067 0400 0586 1535 0230 0193 0357 0448 0247 0542						
Mediator	0067 0586								PVision	1221 0906
Medion	0067 0698 0744 1067 0838 0586 0542 1167 0728 1278 1289 0910 1319					Panama	0039 0247 0294 0246 0067 0586		Pye	0067 0586 0404
						Panasonic	0680 0256 0138 1340 0067 0586 0193 0238 0538 0926 0578 0883 0208 0090		Pymi	0039
			NEI	0067 0586 0193					Qingdao	0238 0256 0294
			Neovia	0895 1401 0906 1406					Quasar	0680 0895 0039
Megas	0640								Quelle	0067 1535 0100 0104 0139 0542 0247 0357 0135 0698 0586 0225 0230 0294 1067 0376 0039
Megatron	0208		Netsat	0067 0586						
MEI	1067 0067 0586		Neufunk	0067 0039 0586 0640 0744		Panavision	0067 0586			
Meile	0294					Panda	0039 0810 0238 0256 0294 0736 0921 0538 0728			
Melectronic	0039 0376 0067 0542 0139 0373 0193 0135 0247 0404 0510 0522 0246 0586 0664 0225 0691 0744		New Tech	0067 0039 0586 0373 0247						
			Newave	0039 0208 0123					R-Line	0067 0586 0193
			Nicamagic	0246		Papouw	0067 0586		Radialva	0139 0193 0067 0586
			Nikkai	0065 0067 0586 0246 0247 0294 0039		Pathe Cinema	0193 0246 0400			
						Pathe Marconi	0139		Radiola	0067 0586 0247
Memorex	0039 1067 0208 0680 0090					Pausa	0039		Radiomarelli	0067 0586
			Nikkei	0744		Peng Sheng	0921		RadioShack	0067 0586 0208
Memphis	0039		Nikko	0208		Penney	0208 0090		Radiotone	0039 0067 0586 0400 0448 0698 0294 1067
Mercury	0067 0039 0586		Nishi	0512		Perdio	0193 0067 0246 0586			
Mermaid	0067		Noblex	0067 0294 0512						
Merritt	0578 0193		Nobliko	0100 0246		Perfekt	0067 0586		Rank	0100
Metronic	0655		Nogamatic	0139		Philco	0067 0104 0448 0586 0193 0400 0511 0208		Rank Arena	0632 0783
Metz	0418 0477 0776 1193 0225 0067 0586 0617 0698 1067 1563		Nokia	0193 0503 0510 0578 0636 0522 0661 0238 0404 0376 0640 0139					RBM	0100
									RCA	0090 0648 0123 0655 0208 0590 0365 0373 0783
						Philex	0193			
MGA	0208 0067 0586					Philharmonic	0247			
Micromaxx	0067 0586 0698 1067 0838		Nordic	0247		Philips	0067 0586 0373 0208 0138 0404 0802 0039 0230		Realistic	0208
			Nordmende	0139 0744 0921 0373 0590 0225 0067 0586 0365 0193 1289 1278					Recor	0067 0448 0586
Microstar	0838								Rectiligne	0067 0586
MicroTEK	0850								Rediffusion	0578 0376
Mikomi	1179		Norfolk	0193		Phocus	1319 0744		Redstar	0067 0586
Minato	0067 0586		Normerel	0067 0586		Phoenix	0067 0586 0400 0516 0193 0246		Reflex	0067 0586 1067 0698
Minerva	0100 0517 0225 0138		Novak	0067 0586						
			Novatronic	0067 0135 0404 0586		Phonola	0067 0586 0246		Relisys	0895 0906 0907 1328
Minoka	0067 0586		NU-TEC	0485 0728		Pilot	0586 0067 0742 0736		Reoc	0744 0664 1939
									Revox	0067 0586 0400
									Rex	0193 0294

Brand	Codes
RFT	0400 0294 0067 0586 0516
Rhapsody	0246
Ricoh	0067 0586
Rinex	0803 0448
Roadstar	0039 1067 0294 0448 0067 0586 0744 0698 1219
Rodex	0067 0586
Rover	0907
Rowa	0067 0294 0728 0039 0247 0742 0246 0617 0586
Royal Lux	0400 0365
Rukopir	0586 0067
Saba	0139 0655 0193 0590 0365 0373 0578 0680 0744
Sagem	0640 0485 0860 1343 0648
Saige	0039
Saisho	0039 0294 0247 0193
Saivod	0067 0586 1193 0698 0742 1067
Sakaï	0193
Sakyno	0485
Salora	0193 0578 0238 0510
Salsa	0365
Sampo	1785 0039 0123 0208 0680
Samsung	0090 0648 0674 0512 0617 0796 0067 0208 0586 1279 0039 0123 1265 0247 0400 0294 0246 0238 0193 0256 0655
Sandra	0246 0247
Sanjian	0294
Sansui	0067 0759 0586 0736 0632 0485 0783 1401
Santon	0039
Sanyo	0238 1238 0400 0246 0247 0039 0538 0193 0067 0138 0586 0516 0200
Sanyuan	0039 0123
Save	0067 0586
SBR	0067 0586
Schaub Lorenz	0578 0744 0636 0516 0404 1221
Schneider	0067 1167 0586 0698 0424 0382 0373 0247 1067 0193 0744 1939 0100
Scotch	0208
Scotland	0193
Scott	1219 0208
Sears	0208
Seaway	0664
Seelver	0586 1067 0067
SEG	0067 0247 0586 0294 1067 0698 0517 0039 0193 0664 0246 1193 1939 0744
SEI	1535 0193 0067 0586
Sei-Sinudyne	1535 0067 0586

Brand	Codes
Seitech	1247
Seleco	0193 0294 0376
Sencora	0039
Sentra	0065 0039
Serie Dorada	0208
Serino	0640 0485 0246 0123
Shancha	0294
Shanghai	0039 0238 0256 0294
Sharp	0123 0039 1223 1423 0683 0680 0230 0790 1193
Shen Ying	0039
Shencai	0039 0294
Sheng Chai	0039
Sheng Chia	0039 0123
Shenyang	0039 0294 0783
Sherwood	0039
Shintoshi	0067 0586
Shivaki	0067 0586 0473 0404 0208
Show	0448 0039
Siam	0067 0586
Siarem	0193
Siemens	0067 0225 0230 0357 0586
Siera	0067 0586 0617
Siesta	0400
Silva	0067 0586 0246
Silver	0067 0485 0586 0745 0193
SilverCrest	1067 0067 0586
Singer	0039 0067 0586 0365 0193
Sinotec	0803
Sinudyne	0193 1535 0067 0586
Sky	0067 0910 0208 0586
SKY Brasil	0910
Skymaster	0135
Skysonic	0783
Skyworth	0067 0586 0039 0294 0728 0783
Sliding	0895 0910
SLX	0698
Smaragd	0517
Soemtron	0895 1328
Solavox	0193 0578 0067 0586
Songba	0039
Soniko	0067 0586
Sonitron	0238 0400 0247
Sonneclair	0067 0586
Sonoko	0039 0067 0586 0294 0247
Sonolor	0193 0238 1535 0578
Sontec	0067 0586 0400 0039
Sony	1535 0104 1681 0680 0683 1781 0383 0067 0586 0123 0200
Sound & Vision	0404 0067 0586
Soundesign	0208
Soundwave	0067 0448 0586 0745
Sowa	0090 0256 0208
Soyea	0803
Spectra	0039
Ssangyong	0039

Brand	Codes
Staksonic	0039
Standard	0039 0067 0247 0586 1067 0404
Starlite	0039 0193 0067 0586 0294
Stern	0193 0294
Strato	0067 0586 0294 0039
Strong	1193 1179 1067 0067 0586
Stylandia	0247
Sunic Line	0067 0586
Sunkai	0485 0640 0067 0586 0517 0895
Sunstar	0067 0586 0039 0294
Sunwatt	0485
Sunwood	0067 0586 0039
Superla	0246 0247
SuperScan	0123
Supersonic	0238 0586 0728 0294 0485
SuperTech	0039 0246 0067 0586
Supra	0208 0404 0039
Susumu	0365
Sutron	0039
SVA	0617 0895
Swisstec	0910
Sydney	0246 0247
Synco	0090 0123 0208
Sysline	0067 0586
Sytong	0246
T+A	0477
Tacico	0208 0039
Tai Yi	0039
Taishan	0039 0404
Tandberg	0139 0193
Tandy	0123 0247 0193
Targa	1401
Tashiko	0247 0680 0200 0246 0193
Tatung	0039 0067 0586 0090 0247 1401 1289 1278 1221
TCL	0736 0728
TCM	0744 1319 0838
Teac	0039 0067 0586 0542 0294 1067 0448 0586 0485 0742 0698 0247 0736 1939 0208 0200 0744 1179 1785
TEC	0247 0039 0365 0067 0586 0193
Tech Line	0067 0586 0698 1193
Tech Lux	1219
Technics	0680
TechniSat	0067 0586 0193
Technisson	0744 1319
Technosonic	0067 0586
Techwood	1193
Tecnimagen	0586
Teco	0039 0123 0208 0294 0683
Tedelex	0247 0448 0636 0039 0736 0238 0728 0617 0921 0067 0586
Teiron	0039
Teknika	0090
Tele System	0906

Brand	Codes
Teleavia	0139 0373
Telecor	0067 0586 0193 0247 0424
Telefunken	0655 0104 0590 0139 0617 0365 0728 0373 0742 0850 0926 0784 0067 0586 0516 0744 0376
Telefusion	0067 0586
Telegazi	0067 0193 0294 0586
Telemeister	0067 0586
Telesonic	0067 0586
Telestar	0039 0067 0586
Teletech	0039 0067 0586 0698 1067
Teleton	0247 0193
Televideon	0193 0246
Teleview	0067 0586
Tempest	0039 0067 0586 0294
Tennessee	0067 0586
Tensai	0067 0586 0247 0039 0135 0404 0407 0745 0193 1067
Tenson	0039
Tesla	0067
Tevion	1278 1328 0067 1289 0586 0838 0698 1167 0744 1067 1319
Texet	0246 0247 0404 0039
Thomson	0139 0655 0590 0373 0365 0067 0586 0246
Thorn	0065 0138 0067 0139 0104 0373 1535 0529 0542 0586 0365 0404 0100
Thorn-Ferguson	0138 0373 0139 0365 0529 0065
Tiane	0123
Tiny	1226 1299
TMK	0208
Tobo	0039 0294
Tokai	0067 0586 0698 0193 0247 0404 0039 1067
Tokaido	1067
Tokyo	0246 0065
Tongguang	0294
Tongtel	0810 0617
Topline	1067 0698
Toshiba	0538 0090 0680 1538 0039 0065 0123 1734 1194 1319 0100 1295 0744 0294 0247 0139 0225 0648 0674 0728 0067 1193
Towada	0247
Toyoda	0039 0294
Trakton	0039 0294 0247
Trans Continens	0698 0247 1067 0067 0586 0516
TRANS-continents	0895
Transonic	0067 0728 0586 0742 0485 0617 0542 0294 0448 0039

Brand	Codes
Transtec	0246
Triad	0067 0586
Trident	0247
Tristar	0294
Triumph	0376 0586 0067
Tuntex	0039
TVTEXT 95	0586
Uher	0067 0586 0404 0448 0516 0400 0510
Ultravox	0404 0246 0193 0067 0586
Unic Line	0067 0586 0503 0485
United	0744 0067 0745 0586 1067 0617
Universal	0744 0067 0586
Universum	0067 0376 0104 0135 0225 0294 0503 0400 0522 0510 0230 0448 0542 0100 0193 0586 0357 1535 0698 0247 0139 0661 0039 1067 0200 1193 1179 0648
Univox	0067 0586 0193
Utax	0193
V7 Videoseven	1785 0208 0910 1406 1247
Vestel	0067 0193 0247 0586 0698 1067 1193
Vexa	0039 0067 0586
Victor	0683 0680
Videocon	0538
Videologic	0246
Videologique	0246 0247
VideoSystem	0067 0586
Videotechnic	0246 0247 0404
Videoton	0193
Vidtech	0208
Viewpia	0906
ViewSonic	1785
Visiola	0246
Vision	0067 0294 0586 0247
Vortec	0067 0586
Voxson	0193 0208 0067 0586 0448
Waltham	0247 0448 0067 0586 0698 0139 1067 0193 0473
Wards	0208
Warumaia	0404 0691
Watson	0067 1067 1278 1289 0586 0193 0039 0698 0424 1406 0357
Watt Radio	0193 0246
Wega	0067 0586
Wegavox	0039 0067 0586
Weipai	0039
Welltech	0744
Weltblick	0067 0586 0247
Westinghouse	0920
Weston	0067 0586
Wharfedale	0067 0926 0586
White Westinghouse	0067 0246 0586 1939
Windsor	0698 1067
Windy Sam	0586
Wintel	0744

Brand	Codes
World-of-Vision	0910 0920 0895 1319 1328 0907 1247
Worldview	0485
X-View	1221
Xenius	0664 0691
Xiahua	0039 0294 0728 0803
Xianghai	0039
Xiangyang	0294
Xihu	0294
Xingfu	0039
Xinghai	0294
Xingyu	0039
XLogic	0728 0890
Xoro	1226 1247
Xrypton	0067 0586
Yamaha	0680 1606
Yamishi	0485 0067 0586 0247
Yingge	0039
Yokan	0067 0586
Yoko	0067 0247 0294 0586 0039 0400 0246
Yonggu	0039
Yousida	0039
Yuhang	0039
Zanussi	0247
Zenith	1939 0208 1295
Zhuhai	0039 0404
Zonda	0728

VCR

Accent	0102
Admiral	0078
Adventura	0030
Adyson	0102
Aiko	0308
Aim	0308 0672 0378
Aiwa	0030 0378 0382 0067 0772 1167 0062
Akai	0067 0136 0345 0672 0382 0270 0378
Akashi	0102
Akiba	0102
Akura	0102
Alba	0308 0102 0382 0030 0345 0378 0111
Allorgan	0270
Allstar	0111
America Action	0308
Amstrad	0030 0308 0102
Anam	0067 0256 0270 0308
Anitech	0102
Ansonic	0030
Aristona	0111
ASA	0067 0111
Asha	0270
Asuka	0102 0067 0111 0030
Audiosonic	0308
Audiovox	0067 0308
AVP	0382 0030
AWA	0067 0308 0672 0073
Baird	0136 0308 0134 0030
Basic Line	0308 0102 0134
Beaumark	0270
Beko	0134
Bell & Howell	0134
Bestar	0308
Black Diamond	0672 0308
Black Panther	0308
Blaupunkt	0256 1592 0111
Blue Sky	0067 0378 0102 0382 0308 0030 0510 0672 1167
Bondstec	0102
Brandt	0350
Brinkmann	0378
Broksonic	0378
Bush	0102 0308 0345 0382 0030 0378 0111 0672 0772
Calix	0067
Carena	0111
Carrefour	0075
Carver	0111
Casio	0030
Cathay	0308
CCE	0102 0308
CGE	0030
Cimline	0102
Cineral	0308
CineVision	1167
Citizen	0067 0308
Clatronic	0102 0030
Colt	0102

Combitech	0382
Condor	0308
Craig	0067 0102 0270
Crown	0067 0308 0102 0510
Cybernex	0270
Cyrus	0111
Daewoo	0308 0672 0667 1167 0075 0378 0382
Dansai	0102 0308
Dantax	0382
Daytron	0308
de Graaf	0072 0196 0111 0134 0078
Decca	0030 0111 0097 0378 0382
Deitron	0308
Denko	0102
Denon	0072
Diamant	0067
Diamond	0308
Digitor	0672
DSE	0672
Dual	0111 0308 0030 0378
Dumont	0030 0111 0134
Durabrand	0672
Dynatech	0030
Elbe	0308
Elcatech	0102
Electrohome	0067
Electrophonic	0067
Elin	0270
Elsay	0102
Elta	0102 0308
Emerex	0062
Emerson	0030 0102 0067 0075 0073 1167 0308
ESC	0308 0270
EuroLine	0378
Ferguson	0350 0030 0308
Fidelity	0030 0102 0270 0462 0382
Finlandia	0134 0111 0072 0196 0030 0078 0067 0073 0136 0256
Finlux	0030 0111 0134 0072
Firstline	0102 0378 0073 0067 0075 0072 0308 1167
Fisher	0134
Flint	0378
Frontech	0102
Fujitsu	0030
Fujitsu General	0067
Funai	0030
Galaxi	0030
Galaxis	0308
Garrard	0030
GE	0350 0078 0270
GEC	0111
General Electric	0067
General Technic	0378
Genexxa	0134
Go Video	0462 1167
Goldhand	0102
GoldStar	0067 0510 0030 1167

Goodmans	0030 0102 0270 0308 0067 0111 0378 0667 0382 0672
GPX	0067
Gradiente	0030
Graetz	0134 0270
Granada	0134 0078 0111 0270 0067 0256 0072 0030
Grandin	0102 0067 0030 0308
Grundig	0270 0377 0111 0256 0350 0378 0102 0382 0772
Haaz	0378
Hanimex	0382
Hanseatic	0067 0308 0111
Harley Davidson	0030
Harman/Kardon	0111
Harwood	0102
HCM	0102
Hinari	0102 0382 0308 0270
Hisawa	0382
Hischito	0075
Hitachi	0072 0196 0030 0270 0111 0134
Höher	0308 0672
Hornyphon	0111
Hughes Network Systems	0072
Hypson	0102 0308 0382 0030 0067 0510
Imperial	0030 0270
Ingersoll	0270
Inno Hit	0270 0308 0102
Interbuy	0067 0102
Interfunk	0111 0134
Internal	0308 0667
International	0308 0067
Intervision	0030 0308 0067 0378
Irradio	0102 0067 0111 1167
ITT	0136 0134 0270
ITT Nokia	0078
ITV	0308 0067
JMB	0382 0378
Joyce	0030
JVC	0097
Kaisui	0102
Kambrook	0067
Karcher	0308
KEC	0067 0308
Kendo	0136 0345 0378 0102 0067 0308
Kenwood	0097
KIC	0030
Kioto	0378
KLH	0102
Kneissel	0382 0378 0067 0308
Kodak	0067
Kolster	0378
Korpel	0102
Kyoto	0102
Lenco	0308
Leyco	0102
LG	0067 0510 0030 0308 1167
Lifetec	0378
Lloyd's	0030

Loewe	0111 1592 0256 0067
Logik	0270 0102 0136
Lumatron	0308
Lux May	0102
Luxor	0136 0073 0102 0134 0078 0345
LXI	0067
Magnasonic	0308
Magnavox	0111 0030 0672
Magnin	0270
Magnum	0672
Manesth	0102 0075 0111
Marantz	0111
Mark	0308 0030
Marta	0067
Mastec	0672
Master's	0308
Matsui	0378 0067 0270 0382 0030 0772
Mediator	0111
Medion	0378 0382
Melectronic	0030 0067
Memorex	0134 0030 0067 0078 0378 0270
Memphis	0102
Metronic	0111
Metz	1592 0377 0866 0111 0256 0067
MGA	0073 0270
MGN Technology	0270
Micormay	0378
Micromaxx	0378
Migros	0030
Minolta	0072
Mitsubishi	0073 0097 0078 0111 0510 0030 0672
Motorola	0078
MTC	0270 0030
Multitec	0067
Multitech	0030 0102 0134
Murphy	0030
Myryad	0111
NAD	0134
Naiko	0672 0378
National	0256 1592
NEC	0097 0070 0134 0067 0308 1167
Neckermann	0111
Nesco	0102 0030 0382
Neufunk	0067
Nikkai	0102 0308
Nikko	0067
Noblex	0270
Nokia	0134 0136 0345 0308 0270 0078 0072 0111
Nordmende	0350 0097
NU-TEC	0378
Oceanic	0030 0078 0136 0111 0134
Okano	0345 0378 0102 0308
Olympus	0256
Onimax	0672
Optimus	0067 0078 0134 0462
Orbit	0102
Orion	0382 0378 0772
Orson	0030
Osaki	0030 0067 0102

Osume	0102
Otto Versand	0111
Pace	0382
Pacific	0030
Palladium	0102 0345 0067 0270 0378 0462
Palsonic	0102 0030 0672
Panasonic	0256 1592 0866
Pathe Cinema	0073
Penney	0067 0070 0072 0270
Pentax	0072
Perdio	0030
Philco	0102
Philips	0111
Phoenix	0308
Phonola	0111
Pilot	0067
Pioneer	0097 0111 0072
Portland	0308 0667
Prinz	0030
Profitronic	0111 0270
Proline	0030 0308 0350 0672
Prosco	0308
Prosonic	0308 0030
Protech	0102 0111 0308
Provision	0308
Pye	0111 0030
Quasar	0308
Quelle	0111
Radialva	0067 0102 0111 0078
Radiola	0111
Radionette	1167 0067
RadioShack	0030
Radix	0067
Randex	0067
RCA	0136 0072 0078 0350 0270
Realistic	0030 0067 0078 0134
Reoc	0378 0667 0308
RFT	0102
Roadstar	0270 0102 0067 0308 0772 0111
Royal	0102
Saba	0350 0308
Saisho	0378
Salora	0073 0136 0134
Samsung	0270 0462 0075
Sanky	0078
Sansei	0078
Sansui	0097 0030 0136 0102 0378
Sanyo	0134 0270 0078 0097 0378
Saville	0382 0308 0270
SBR	0111
ScanSonic	0270
Schaub Lorenz	0134 0030 0136 0345
Schneider	0102 0030 0067 0111 0308 0270 1167 0072 0382 0672
Scott	0073 0075
Sears	0030 0067 0072 0134
Seaway	0308
SEG	0102 0270 0308 0672 0111 0667
SEI	0111

Sei-Sinudyne	0111
Seleco	0067
Semivox	0075
Semp	0075
Sentra	0102
Setron	0102
Sharp	0078 0067 0599
Shintom	0102 0134
Shivaki	0067
Shogun	0270
Siemens	0067 0134 0111 0350 0377
Siera	0111
Silva	0067
Silver	0308
SilverCrest	0672
Singer	0378 0075 0102
Sinudyne	0111 0382
Smaragd	0378
Sonneclair	0102
Sonoko	0308
Sonolor	0078
Sontec	0067 0308
Sonwa	0672
Sony	0062 0030 0136
Soundwave	0067 0378
Ssangyong	0102
Standard	0308
Starlite	0067 0134
Stern	0308
STS	0072
Sunkai	0378 0308
Sunstar	0030
Suntronic	0030
Sunwood	0102
Supra	0067 0270 0378 0308
Sylvania	0030 0073 0111
Symphonic	0030 0102
T+A	0256
Tandberg	0308
Tandy	0030 0134
Tashiko	0030 0078 0270 0111 0067
Tatung	0030 0111 0078 0073 0378 0382
Tchibo	0378
TCM	0378
Teac	0102 0030 0308 0672 0067 0111 0667
TEC	0308 0102
Tech Line	0102
Technics	0256
TechniSat	0378
Tedelex	0067 0378 0672
Teknika	0030 0067
Telefunken	0672 0350 0308
Telestar	0067
Teletech	0102 0308 0030
Tenosal	0102
Tensai	0030 0067 0102 0308
Tevion	0378 0672
Texet	0308
Thomas	0030
Thomson	0350 0097 0308
Thorn	0134 0067
Thorn-Ferguson	0350
TMK	0270
Tokai	0102 0067 0134

Tokiwa	0102
Topline	0378
Toshiba	0073 0075 0111 0772 0382
Totevision	0067 0270
Towada	0102
Tradex	0111
Tredex	0308
Triad	0308
Uher	0067 0270
Ultravox	0308
Unitech	0270
United	0378 0772
United Quick Star	0308
Universum	0030 0111 0270 0067 0136 0378 0134
Vector	0075
Vector Research	0070
Victor	0097
Video Concepts	0070 0075
Video Technic	0030
Videosonic	0270
Wards	0030 0072 0078 0102 0111 0270
Watson	0111 0382 0308 0672
Weltblick	0067
Wharfedale	0672
White Westinghouse	0102 0308
World	0378
XR-1000	0030 0102
Yamishi	0102 0308
Yokan	0102
Yoko	0067 0102 0270
Yoshita	0102
Zenith	0030 0667 1167
ZX	0378 0382

CBL

ADB	1260	1299
Amstrad	1252	
Auna	1299	1260
Austar	0306	
Canal Plus	0473	
Comcrypt	0473	
Comtec	0049	
Contec	0049	
Daeryung	0507	
Fastweb	1660	
Filmnet	0473	
Foxtel	1252	
France Telecom	0847	1764
freebox	1512	
Funai	0049	
General Instrument	0306	
Jerrold	0306	0049
Macab	0847	
Madritel	1260	
MNet	0473	0049
Motorola	0306 1136	1513
Multichoice	0049	0473
Nokia	1599	
Noos	0847	1654
NTL	1090	1098
Oak	0049	
Ono	1098	
Optus	0306	1090
Pace	1098 1607	1090
Philips	0847	
Sagem	0847	1654
Samsung	1696	
Scientific Atlanta	0507	
Tele+1	0473	
Telepiu	0473	
Telewest	1098	1090
Telsey	1660	
Thomson	1764	1612
Trans PX	0306	
UPC	1612	
US Electronics	0306	
Visiopass	0847	

VIDAC

Gateway	1302
Hewlett Packard	1302
Microsoft	1302
Pinnacle Systems	1477
Sony	1302

CD

Advantage	0062		
Aiwa	0187		
Arcam	0187	2010	
Audio Research	0187		
Audiolab	0187		
Audiomeca	0187		
Audioton	0187		
Balanced Audio Technology	0187		
Cairn	0187		
California Audio Labs	0059	0333	
Cambridge Audio	0187		
Carver	0187		
CCE	0187		
Copland	0423		
Cyrus	0187		
Denon	0033 0796	0656	
DKK	0030		
Dual	0033		
Dynaco	0187		
Elektra	0423		
Garrard	0423		
Genexxa	0030	0062	
Goldmund	0187		
Grundig	0187		
Harman/Kardon	0187		
Hitachi	0062		
JVC	0102		
Kenwood	0220 0656	0066	
Krell	0187		
Linn	0187		
Loewe	0187		
Magnavox	0187		
Marantz	0187 0656	0059	
Matsui	0187		
MCS	0059		
Memorex	0062		
Meridian	0187		
Micromega	0187		
Mission	0187		
Musical Fidelity	0423		
Myryad	0187		
NAD	0751	0030	
Naim	0187		
NSM	0187		
Onkyo	0131		
Optimus	0030	0062	
Orion	0423		
Panasonic	0333	0059	
Philips	0187	0656	
Pioneer	0062		
Primare	0187		
Proton	0187		
QED	0187		
Quad	0187		
Quasar	0059		
Radiola	0187		
Restek	0187		
Revox	0187		
Rotel	0187		
SAE	0187		
Sansui	0187		
Siemens	0187		
Simaudio	0187		
Sony	0030 0520	0187	
Tag McLaren	0187		
Tandy	0062		
Teac	0423		
Technics	0333	0059	
Thorens	0187		
Thule Audio	0187		
Traxdata	0656		
Universum	0187		
Victor	0102		
Wards	0187		
Yamaha	0066 0520	0062	
Zonda	0187		

TUNER

AEG	1420		
AFK	1419		
Aiwa	0151 0219 1088	1188 1288 1652	
Akai	0639 1250	1420	
All-Tel	1420		
Anam	0639		
Arcam	0219 1119 1219	1299 1319 2009	
ASCOMTEC	1419		
Audiolab	1119 1219 1299	1319 0219	
Audiosonic	1419		
Audiovox	1420		
Audioworld	1419		
Balanced Audio Technology	1119 1219 1299	1319 0219	
Bang & Olufsen	0829		
Basic Line	1584		
Belson	1419		
Blue Sky	1420		
Bose	1259	1385	
Bush	1119 1219 1299	1319	
Cairn	0219		
Cambridge Audio	0219	1219	
Carver	0219 1119	1219	
CCE	1382		
Centrum	1250 1584	1419	
Classic	1382		
Clatronic	1250		
Copland	1119 1219 1299	1319	
Denon	1390	1134	
Denver	1419		
Diamond	1420		
DK digital	1450		
DMTECH	1420		
Dual	1250 1420	1450	
Electrocompaniet	1219		
Elta	1420		
Fisher	1831		
Genexxa	0216		
Goldmund	0219 1119 1219	1299 1319	
Goodmans	0639 1229 1450	1641 1419	
Grundig	1119 1219 1299	1319 0219	
Hanseatic	1420		
Harman/Kardon	1334 1119 1219	1299 1319 0219	
HCM	1420		
HE	1419		
Hitachi	1831 1250	1584	
Hiteker	1419		
Integra	0165	1350	
JVC	0104 1404 1229	1525	
Kenwood	1057 1343 1599	0216	
KLH	1420		
KXD	1419		
Lenoxx	1641		
Lenoxx Sound	1641		
LG	1323		
Linn	0219 1119 1219	1299 1319	
Loewe	1119 1219 1299	1319 0219	
Magnavox	0219 1119 1219	1299	
Magnum	1641		
Marantz	0219 1119 1219	1299 1319	
Mark	1119 1219 1299	1319	
MBO	1382		
Medion	1450		
MEI	1420		
Melectronic	0639		
Meridian	1119 1219 1299	1319	
Metz	1584		
Micromaxx	1450		
Micromega	1119 1219 1299	1319 0219	
Mitsubishi	0206		
Mustek	1382		
Myryad	1219 1119 1299	1319 0219	
NAD	0350	0639	
Naim	1119 1219 1299	1319	
Nikkai	1419		
Nikko	0639		
Norcent	1419		
Okano	0639		
Onkyo	0165	1350	
Optimus	0216	1053	
Palladium	1250		
Panasonic	1548 1338 1339	1793 1809 1795	
Philco	1420		
Philips	0219 1219 1299	1119 1319	
Pioneer	1053 0216 1119	1219 1299 1319 1489	
Polk Audio	1319		
Proline	1420		
Proson	0639		
Provision	1419		
QONIX	1450		
Quad	1119 1219 1299	1319	
Radiola	1119 1219 1299	1319 0219	
Radionette	1664	1323	
RCA	1184 1420	1489	
Red Star	1419		
Restek	0219		
Revox	1119 1219 1299	1319 0219 0216	
Revoy	1119 1219 1299	1319	
Roadstar	1641		
Rotel	0823		
Saba	1184		
Samsung	1325	1229	
Sansui	0219 1119	0639	
Sanyo	1831		
Schneider	1420 1229	1250	
SEG	1584		
Sharp	0216 1664	1644	
Sherwood	0683		
Siemens	0639		
Silva Schneider	1323		
Sony	1188 1288 1888	1789 1088 1688 1752 1652 1142	
Soundwave	0639		
Sunfire	1343		
Sunstech	1450		
Tag McLaren	1219		
Teac	1229 0639	1420	
Technics	1338 1339 1793	1548 1795	
Techwood	0639	1584	
Telefunken	1419		
Tevion	1641		
Thomson	1184	1384	
Thorens	1219 1119 1299	1319 0219	
Toshiba	1602		
United	1420		
Universum	1250 0639 1420	1119 1219 1299 1319 0219	
Venturer	1420		
Victor	0104		
Voxson	1450		
Waitec	1382		
Wards	0219		
Wharfedale	0639	1420	
Yamaha	0206 1361 1306	0216 0742	
Yukai	1382		

DVD

3D LAB	0569		
4Kus	1188		
A-Trend	0744		
Acoustic Solutions	0760 0743	1258	
AEG	0818 0800	0820	
AFK	1258	1182	
Aim	0808	0702	
Airis	1254 1351 0702	1035 1375	
Aiwa	0725 0899	0563	
Akai	0820 0809 0800	0818 0725 1145 0928 0746 0743 0882 0735 1725 1263	
Akashi	0868		
AKI	1035		
Akira	0808	1351	
Akura	1201 0928 1081	1170	
Alba	0747 0743 0753	0725 0760 0569 0702 1170 1081 1560 1725	
Alize	1181		
All-Tel	0820 1481	0865	
Amitech	0800	0880	
Amoi	0882		
Amoisonic	0865		
Amstrad	0743 1145 1181	1601	
AMW	0902		
Ansonic	0789	0861	
Apex Digital	0702 0747	1034	
Arcam	0762		
Arena	0882		
Asono	1254		
ATACOM	1254		
Audiovox	0820	0747	
Audioworld	0820		
Audix	1134	1182	
Autovox	0743		
Auvio	0873		
Avious	1195		
AWA	0760	0902	
Axion	0760		
Base	1481		
Basic Line	0743		
Baze	1195 0928	0702	
BBK	0892	1254	
Bel Canto Design	1601		
Bellagio	0902		
Best Buy	0887		
Black Diamond	0743	0863	
Blaupunkt	0747		
Blu:sens	1263		
Blue Parade	0601		
Blue Sky	0743 0725 0702	0873 0808 0681 0820	
BNI	1351		
Boghe	1034		
Boman	0818 0928	1035	
Brainwave	0800	1145	
Brandt	0681 0581	0533	
Broksonic	0725	1449	

Brand	Codes
Bush	0743 0725 0863 1725 0760 0861 0747 0808 0546 0848 0753 1195 1466 1449 1513 1170
C-Tech	0798 1182
Cambridge Audio	1139 0781
Campomatic Digital	1081
CAT	0819
Celestial	0702
cello	1760
Centrex	0702 1034
Centrum	0743 0819 0809 1035
CGV	0800 0781
Cinea	0871
Cineral	0760
Cinetec	0743 0902
CineVision	0899 0863
Classic	0760 1760
Clatronic	0818 0809 0848 0702 1195 0705
Clayton	0743
Coby	0808 1137 0760 1195 0882
Codex	1263
Conia	0702 0882 0546 0865 1351
Contel	0818
Continental Edison	0902 0861
Craig	0861
Crown	0800 0681
Crypto	1258
Cybercom	0861
CyberHome	0744 0846
Cytron	0746 0681 0735 0861 1377
D-Vision	1145
Daenyx	0902
Daewoo	0800 0863 0899 1513 0735 0744 1466 0902 0808
Dalton	1066
Dansai	0800 1145 1725
Dantax	0753 0725
Daytek	0902 1035
Dayton	0902
DCE	0861
DEC	0808 0848
Decca	0800
Denon	0520 0664 1664
Denver	0808 0818 0928 0848 1137 1351 0702
Denzel	0695
Diamond	0681 0798 0781 0808 0753 0820
Digihome	0743
DigiLogic	0743
digiRED	0747
Digitor	1035
Digitrex	0702 1034
DiK	0861
Dinamic	0818
DiViDo	0735
DK digital	0861
DMTECH	0820 1301
Dragon	0861
DSE	1760 0863 1182
Dual	0861 0743 0695 0681 0760 0809 0820
Durabrand	0861 0743
DVX	0798
E-Boda	0753
E-Dem	1254
e:max	1263 1351
EagleTec	0744
eBench	1182
Eclipse	0753 0781
Electrohome	0800
Elfunk	0880 0743
Elin	0800
Ellion	0880 1451
Elta	0800 0818 0820 1145 1181 1263 1081
Eltax	1351
Emerson	0621 0705 0735 0899
ENG	1601
Enterprise	0621
Enzer	0695
EuroLine	0818 1145 1263 0705
Ferguson	0681 1760 0928 0743
Finlux	0771 0800 0621 0702 0781 1195
Fintec	0743
Firstline	0899 0681 1560
Fisher	0700
Funai	0725 0705
Gateway	1188
GE	0747
General Electric	0747
Germatic	1081
Global Link	1254
Global Solutions	0798
Global Sphère	0798
Go Video	0774 1188 0899 0863
GoldStar	0621 0771
Goodmans	0743 1034 0753 0781 0760 0681 0820 0848 0863 1170 1760
GP Audio	1170
GPX	0681 0771
Gradiente	0681
Graetz	0695
Gran Prix	0861
Grandin	0746 0702
Greenhill	0747
Grundig	0725 0735 0805 0569 0681 0820 0743 0700 0753 1725 1034 1760 1466 1513
Grunkel	0800 0861
H&B	0848 0743 0871 0880 1263 1451
Haaz	0798 0781
Haier	0873
Hanseatic	0771 0820
Harman/Kardon	0732
HCM	0818
HDT	0735
HE	0760
Henß	0743
HiMAX	0887 0873
Hitachi	0694 0725 0809 0695 0603 0887 0743
Hiteker	0702
Höher	0861 1034 1254
Home Electronics	0760 0800
Home Tech Industries	1254
Hyundai	0880 1258
Iekei	1137
Ingelen	0818
Inno Hit	0743
Integra	0657
Irradio	0771 1145 1254 1263 0899 0800
ISP	0725
Jaton	0695
JBL	0732
JDB	0760
JDV	1258
Jeken	0808
Jepssen	1213
JMB	0725
JNC	0702 1301
JVC	0653 0588 1194 0569 0533 0897
jWIN	1081
Kansai	1137
Kansas Technologies	1263 1560
Kendo	0743 0861 0702 1377
Kennex	0800 0743 0928
Kenwood	0564 0520
KeyPlug	0800
Kiiro	0800
Kingavon	0848
Kiss	0871 0695
KLH	0820
KLH Digital	0747
Kodak	0848
Koss	0681
Kreisen	1451
KXD	0887 1137 1351
Lawson	0735 0746 0798
Leiker	0902
Lenco	0681 0800 0808 0848 0743 0861 1195
Lenoir	1258
Lenoxx	0868
LG	0771 0601 0621 1936 0899
Lifetec	0681 0861 1377
Limit	0746 0798
LiteOn	1188
Lodos	0743
Loewe	0569 0771
LogicLab	0798
Logik	0743
Logix	0735
Lumatron	0735 1145 0771 0863 1351 0743 0760 0928
Luxman	0603
Luxor	1034 0743 1760 0760
Magnasonic	0681
Magnavox	0533 0705 0848 1170 0569 0743
Magnex	0753 1195
Magnum	1466
Majestic	1137 1375
Manhattan	0735 0743
Marantz	0569
Mark	0743 0725 1725
Marquant	0800 1481
Mastec	1036
Matsui	0681 0743 0702 0725 1760
Maxdorf	0818
Maxent	1377
Maxim	0743
Maya	1375
MBO	0760
MDS	0808
Mecotek	0800
Medion	0861 1377 0681 0746 1375 0660 1195 1036
MEI	0820
Memorex	0861
Memory	0760 1081
Metz	0601 0555 0743
MiCO	0753 0781 1253
Micromaxx	1725 0725 1377
Micromedia	0533 0569
Micromega	0569
Microsoft	0552
Microstar	0861
Minax	0743
Minerva	0735
Minoka	0800 1145
Minowa	1195
Mintek	0747
Mitsubishi	0743
Mizuda	0848 0887 1481
Monyka	0695
MPX	0873
Mustek	0760 1760
Mx Onda	0681 0781 0753 1253
Mystral	0861
NAD	0771
Naiko	0800 1034
NEC	0899 0621 0771
Neovia	1301
Nesa	0747
Neufunk	0695
Nevir	0861 0800
Nintaus	1081
Nordmende	0861
Nowa	0873
NU-TEC	0546 1258
Omni	0808 0863 1134 1258
Onix	0868
Onkyo	0657 0533
Oopla	1188
Oppo	1254
Optim	0873
Optimus	0601 0555
Orava	0848
Orbit	0902
Orion	0725 1725 1036 1263 1449 0928
Oritron	0681
P&B	0848 1481
Pacific	0798 0820 0789 0743 0861
Packard Bell	0861
Palladium	0725 0809
Palsonic	0865 0702 0882
Panasonic	0520 1864 1938
Panda	0747 1137
Papouw	0563
peeKTON	1254 0928
Philco	0753 0892 0818 0820
Philips	0569 0676 1370 0705 0533 1188
Philo	1375
Phonotrend	1195
Pioneer	0601 0661 1995 0555 1601
Plu2	0880
Pointer	0800
Polk Audio	0569
Portland	0800
Powerpoint	0902 1035
Presidian	0705
Prima	1258
Prinz	0861
Prism	1036 0861
Pro2	1375
ProCaster	1034
Proline	0681 0702 0820 1034 1513 0863
Proscan	0552
Proson	0743
Prosonic	1137
Provision	0848 1351 1137 0760
Pye	0676 0569
QONIX	0808 1081
Qwestar	0681
Radionette	0771 0899 1936
Raite	0695
RCA	0552 0681 0820 1995
REC	0520
Red Star	0789 0793 0800 0818 0928 1137 1375
Relisys	1377
Reoc	0798
Revoy	0871
Rex	0868
Richmond	1263
Rimax	1181
Rio Audio	0899
Roadstar	0743 0848 0760 1081 0928 0863 1257
Rocksonic	0819
Ronin	0902
Rotel	0653 0588
Rowa	0789 1034 0546 0555 0747
Rownsonic	0819 0753
Saba	0681 0581
Sabaki	0798
Saivod	0789 0861 0800
Salora	0771
Sampo	1377
Samsung	0603 0774 1962 0520
Sansui	0725 0746 0798 0753 0800 0781 1258 1725
Sanyo	0700 0903 0725 0820 0743
Scan	0735 0865 0880
ScanMagic	0760 1760
ScanSonic	0887
SCE	0819
Schaub Lorenz	0818 1195 0800
Schneider	0861 0809 0569 0735 0818 0743 0681 0899 0820 0676
Scientific Labs	0798 1182
Scott	0681 0702 1066 1263
Seeltech	1254 1481
SEG	0743 0695 0798 0902 0793 1560
Semp	0533
Shanghai	0702
Sharp	0660 1286 0743 0725 1449
Sherwood	0747 0771
Shinco	0747
Siemssen	1412
Sigmatek	0887 1254
Silva	0818 0928 0861
Silva Schneider	0861 1936
SilverCrest	1182
Singer	0746 0753 0781 0798
Sinudyne	1170
Sistemas	0702
Skymaster	0760 0798
Skyworth	0928
Sliding	1145
Slim Art	0800
Slim Devices	0653 0563
SM Electronic	0760 0798
Smart	0735 0743
Sonashi	0746 0861
Sonic Blue	0899
Soniko	0818
Sony	0563 0894 1663 0802 1100 2011 1463 0603
Sound Color	1263
Soundmaster	0798
Soundmax	0798
Spectra	0902
Standard	0681 0798 0818 0861 0928
Star Clusters	0798 1257 1182
StarLogic	1035
Starmedia	0848 1254 1035
Strong	0743
Sunfly	0887
Sunkai	0800 0880
Sunstech	0861
Sunwood	0818
SuperDigital	1217
Supervision	0760 0798
SVA	0702 0747
Sylvania	0705 0660
Symphonic	0705
Synn	0798
Tandberg	0743 1725
Tangent	1351
Targa	0771 1188 1257
Tatung	0800
Tchibo	0771
TCM	0771
Teac	0747 0771 0546 0601 0798 0621 0789 1036 0820 1227 0863 1257 1195 0705
TEC	0928
Technics	0520 1938
Technika	0800 1145 0861 1195
Technosonic	1081 1145
Techwood	0743 1560 0569
Tedelex	1258
Telefunken	0820 0819 0818 1258
Teletech	0743
Tensai	0681 0800
Tevion	0681 1066 1412 0798 1257 0863 1377 1760
Theta Digital	0601
Thomson	0581 0552
Tokai	0695 0928 0818
Tokiwa	0735 0746
Tom-Tec	0819
Top Suxess	1254
Toshiba	0533 0725 1075 1540
TRANS-continents	0902 0861 1195
Transonic	0702 1195
Tredex	0873
Trio	0800
TruVision	0887 1481
TSM	1254
TYT	0735
Umax	1181
United	0818 0760 0820 1258 0702 1195 0725 1145 0798 1263 0743 1182 0705
Universal Multimedia	0798
Universum	0771 0743 0621 0809 1257 0820 1560
Uptek	0793
upXus	1375
Urban Concepts	0533
Venturer	0820
Vestel	0743 1560
Vieta	0735
Viewmaster	0892 1254
Voxson	0760 0861
VTrek	1258
Waitec	1254
Walkvision	0747
Waltham	1560
Welkin	0861
Wellington	0743
Weltstar	0743
Wharfedale	0798 0753 0781
Wilson	0861 1263
Windy Sam	0603
Wintech	1217
Woxter	1181 1254
XBox	0552
XLogic	0800 0798 1258
XMS	0818 0800
Xoro	1213
Yakumo	1034
Yamada	1034 0902 1181 1188
Yamaha	0569 0520 0676
Yamakawa	0695 0902 1134
Yukai	0760
Zenith	0533 0899 0621 0771

PVR

Brand	Code
@sat	1330
@Sky	1364
Amstrad	1205
Arnion	1330
ASCI	1364
Astro	1130
Aurora	1463
Austar	1206
B@ytronic	1442
Brainwave	1244
British Sky Broadcasting	1205
BSkyB	1205
Bush	1675
CanalSatellite	1369
Chess	1364
CityCom	1206
Comag	1442
DigiFusion	1675
DigiQuest	1330
Dream Multimedia	1267
eMTech	1244
Foxtel	1206 1386
Galaxis	1206
GbSAT	1244
Gecco	1442
General Satellite	1206
Globo	1364 1442
Hanseatic	1130
HB	1244
HDT	1189
Hirschmann	1442
Homecast	1244
Humax	1206 1457 1705
Hyundai	1189
ID Digital	1206
Imperial	1130 1364
Interstar	1244
Jaeger	1364
Jepssen	1244
Kathrein	1591
Kongque	1330
L&S Electronic	1364
Maximum	1364
Mediacom	1236
Medion	1364 1442
Multichoice	1463
Neotion	1364
Opentel	1442
Orbis	1364 1442
Orbitech	1130
Pace	1205 1386 1453 1880
Panasonic	1334
Pilotime	1369
Pino	1364
Premiere	1130 1206
Rebox	1244
Sagem	1283
Samsung	1236
Sat Control	1330
Satplus	1130
Schaub Lorenz	1244
Schneider	1236
Schwaiger	1364 1442
Siemens	1364
Sky	1205
SKY Italia	1878 1880
Sky XL	1442
SKY+	1205
Skymaster	1364
skyplus	1364 1442
Stream	1878
Strong	1189 1330
Sunny	1330
Systec	1364
TechniSat	1130
Technosat	1236
Telestar	1130 1364
Televes	1244 1330 1364
Tevion	1364
Thomson	1205 1930
Topfield	1236 1575 1813
TPS	1283
UEC	1386
Worldsat	1244
XSat	1244
Xtreme	1330
Zehnder	1364 1442
Zinwell	1206

SAT

Brand	Code
@sat	1330
@Sky	1364
ABsat	1353 0743
ADB	0672 0917 1289 1397 1503 1521
Adcom	0230
Akai	0230
Alba	0743 1314
Allsat	0230 1047
Allsonic	0399
Alltech	0743
Allvision	1262
Alpha	0230
Amitronica	0743
Ampere	0162
Amstrad	0877 1205 0743 0162 1143
Anglo	0743
Ankaro	0399 0743 1309
AntSat	1047
Arcon	1309 0162 1105
Armstrong	0230
Arnion	1330
ASA	0329
Asat	0230
ASCI	1364
ASLF	0743
AssCom	0883
Aston	1159 1291
Astra	0743
Astratec	1773
Astro	0163 0203 0399 0688 1143 1129 1130 0230
Audioline	1459
Aurora	0909 0672 1463
Austar	1289 0672 0909 1206
Axil	1487
Axis	1141 0399
B@ytronic	1442
Bentley Walker	1047
Best	0399
Big Sat	1487
Black Diamond	1314
Blaupunkt	0203
Blue Sky	0743
Blue Star	1309
Boca	0162 1396 0743 1262
Boston	0162
Brainwave	1244 0688 1702
British Sky Broadcasting	0877 1205
Broco	0743
BSkyB	0877 1205
BT	1326
Bubu Sat	0743
Bush	1501 1702 1675 1773
Canal Digital	1883 0883 0197 1076
Canal+	0883 1883
CanalSatellite	0883 1369 1883
Centrex	1577
CGV	1443
Cherokee	1353
Chesley	1577
Chess	1364 0743 1656
CityCom	1206 1262 0329 0848 0534 1105
Clatronic	1443
CNS	1397
Colombia	0162
Columbia	0162
Comag	0162 1396 1443 1262 1442
Condor	0399
Connexions	0399
Conrad	0399 0162
Coship	1487
Crown	1314
Cyrus	0230
D-box	1144 0753
Daewoo	1326 0743 1773 1141
Deltasat	1105
DGTEC	1272 1572
Digatron	1324
Digenius	0329 1191
DigiFusion	1675 1773
Diginet	1577
DigiQuest	1487 1330
DigiSat	1262
Digisky	1487
Digital+	1883
DigitAll World	1257
DiPro	1577 1503 1397
DirecTV	0129 0886
Distratel	1313
Distrisat	0230
DMT	1105
DNT	0230
Dream Multimedia	1267
DStv	0672 0909
Dune	0399
Durabrand	1314
Echostar	1230 0640 0197 0883 0743 1353 1503 1439 1797
Einhell	0162 0743
Elap	0743 1159 1597
Elsat	0743
Elta	0230 0399
Emme Esse	0399
eMTech	1244
Engel	1047 0743 1281
EuroLine	1281
Europa	0230
Europhon	0329 0162
Eurosat	1597
Eurosky	0162 0329 0399
Eurostar	0848
Eutelsat	0743
Eycos	1309
Fenner	0743 0399
Ferguson	1321 0741 1773
Flair Mate	0743
FMD	1281 1487 1443
Force	1224
Fortec Star	1047
Foxtel	1386 0909 0750 1206 1192
Fracarro	0155
Freecom	0203
FTEmaximal	0399 0743
Fuba	1831 0399 0203 1191 0329 1281
Fugionkyo	0155
Galaxis	1141 1206 0883 0399 0909
Gardiner	0848
Garnet	1105
GbSAT	1244
Gecco	1442 1303
General Satellite	1206
Globo	1281 1656 1442 1459 1364
GOD Digital	0230
Gold Box	0883
Gold Vision	1047
Golden Interstar	1313
Goodmans	1314
Gradiente	0917
Grundig	0203 0877 1321 0909 0883
H&B	1577
Hanseatic	1129 1130
Hänsel & Gretel	0162
Hauppauge	1324 1702
HB	1244
HDT	1189
HE@D	1309
Hills	1262
Hirschmann	1141 1143 0203 0329 1262 0399 0155 1442
Hitachi	1314
HNE	1262 0162
Homecast	1244
Humax	1206 1457 1705 1255 1773
Huth	0162 1047 1105
Hyundai	1189 1105
iCan	1397
ID Digital	1206
Imperial	1459 1364 1129 1130 1225 1227 0230 1702
International	0162
Interstar	1047 1244
iotronic	0162
ITT Nokia	0753
Jadeworld	0672
Jaeger	1364
Jepssen	1244
K-SAT	0743
Kamm	0743
Kaon	1330
KaTelco	1141
Kathrein	0534 1597 0510 1591 0688 0203 0230 0848 1353 1446
Kennex	0155
Kenwood	0883
Key West	0162
Kongque	1330
Kreiling	0688
Kreiselmeyer	0203
Kyostar	0162
L&S Electronic	0399 0162 1364
Labgear	1326
LaSAT	0399 0162 0329
Lenco	0743 0399
Lennox	0399
Lenoxx	1641
Lexus	0230
LG	1444 1105
Lifesat	0162 0399 0329 0743
Lodos	1314
Logik	1314
Logix	1047 1105
Lorenzen	0329 1324 1191 0162
Lupus	0399
Macab	0883
Madritel	0672
Manata	0743 0162
Manhattan	1047
Marantz	0230
Maspro	0743 0203
Matsui	0203 1773
Maximum	1105 1364
MDS	1255
Mediabox	0883
Mediacom	1236
MediaSat	0883
Medion	1262 0329 0743 0162 1105 1442 1656 1364 0399
Medison	0743
Mega	0230
Melectronic	0848
Metronic	0743 1309 1313 0848 0162
Metz	0203
Micro	0743 1324
Micro electronic	0743
Micro Technology	0743
Micromaxx	0329 0399
Microstar	1105
Microtec	0743
Morgan's	0230 0743 0162 1439
Motorola	0886
Multichoice	0672 0909 1463
Myryad	0230
Mysat	0743
Neotion	1364
Netgem	1352
Netsat	0917 0129
Neuf TV	1352
Neuhaus	0743
Neuling	1262
Neusat	0743 1309
Neveling	1191
NextWave	1047
Nikko	0743 0753 0230
Nokia	1144 1253 1053 0753 0883 1753
Nordmende	1641
Nova	0909
OctalTV	1324
Opentel	1262 1442
Optex	1313 0743 1641
Optus	0909 0883
Orbis	1364 1442
Orbitech	1129 1130 0230
P/Sat	1262
Pace	0877 0917 1205 1386 1880 0271 1353 0821 0750 0230 0883 1453
Pacific	1314
Packard Bell	1141
Palcom	0329 1191 1439
Panasat	0909
Panasonic	0877 1334 1434
Panda	0203
Patriot	0162
peeKTON	1487
Philips	0230 1144 0883 0129 0163 0848 1702 0203 1459
Phoenix	1303
Phonotrend	1047 1230
Pilotime	1369
Pino	1364
Pioneer	0883 1338 0382
Portland	1326
Power Sky	1309
Preisner	0162 1143 1396
Premiere	0883 1144 0753 1141 1206 1225 1130 0688
Primacom	1141
QNS	1397 1434
Quadral	0399 1353
Quelle	0329
Radiola	0230
Radix	1143
RCA	1321
Rebox	1244
Red Star	0399
Regal	1281
RFT	0230
Roadstar	0743 0883
Rover	0743 0399
Rownsonic	1597
S-ZWO	1237
SAB	1281
Sagem	1144 1283 1720
Samsung	1273 1600 1488 1047 1236 0883
Sat Control	1330
Sat Team	0743
SAT+	1439
Satec	0743
Satelco	0399
Satplus	1130
Schaub Lorenz	1244
Schneider	1281 1236
Schwaiger	0534 1364 1487 1442 1141 0162 1105
SCS	0329
Sedea Electronique	0155 0162 1313 1656 1309
SEG	1281 0399 1656 1105
Serino	0640
Servimat	1641
ServiSat	1281 0743
Sherwood	1641
Siemens	0203 1459 1364
Silva	0329
Skantin	0743
SKR	0743
Sky	0129 0877 0886 0917 1205 0741
SKY Brasil	0672 0917
SKY Italia	1878 1880
Sky XL	1442 1281
SKY+	1205
Skymaster	0743 1439 1230 1105 1641 1364
Skymax	0230
skyplus	1262 1364 1442
SkySat	0743
SL	0162 1702
SM Electronic	0743 1230 1105

Smart	1303 0162 0329 1143 1262 0743 1443
Soniq	1597
Sony	0877 1588 0312 0883
SR	0162
Star Sat	0162
Starland	0743
Stream	1878
Strong	0155 1397 1439 1656 0399 0909 0883 1189 1330 1503 1314
Sunny	1330
Sunny Sound	0399
Sunsat	0743
Sunstar	0399 0162 0672
Supermax	1313
Systec	0162 1364
Tarbs	1255
TBoston	1487
Teac	1257 1255 1352
Tecatel	1230
TechniSat	1129 1130 1225 1227 0230 1352
Technomate	1313
Technosat	1236
Technosonic	1702
Technotrend	1459
Technowelt	0162
Techsan	1047
Techwood	1314 1656
tekComm	1047
Tele System	1281 1439 1641 1831
Tele System Electronic	1641
TeleClub	1397
Telecom	0743
Telestar	1129 1130 0230 1281 1364 1656
Televes	0162 1244 1330 1364 1439
Televisa	0917
Telewire	1262
Tevion	1364 1702 0743 1439 1597
Thomson	0741 0877 1321 1930 0743 1205 0883 1076
Tiny	1702
Tioko	0162
Tokai	0230
Tonna	1641 0743
Topfield	1236 1237 1575 1813
TPS	1283
Triax	0230 0743 0883 1281 1326 1321 0162 1129 1143 1257 1656
Trio	1105
TT-micro	1459
Turnsat	0743
Twinner	0162 0743
UEC	0909 1192 1386
Unimax	1577
Unisat	0230 0162
United	1281
Universum	0203 0329 1129
Van Hunen	1191 0329
Variosat	0203

Vega	0399
Ventana	0230
Vestel	1281
VH-Sat	1191 0329
Viasat	1353 1053
Visionic	0155 1309
Visiosat	0743 1159 1487
Vivid	1192
VTech	0848
Wavelength	1262 1443
Wharfedale	1314
Winbox	1831
Wisi	0203 0329 0162
Worldsat	1503 1244 1281
XMS	1105
Xrypton	0399
XSat	0743 1244 0877 1353
Xtreme	1330
YES	0917
Yess	1577
Zehnder	1281 1262 1364 1442 1105 1443 0534 0848 0399
Zenith	0886
Zeta Technology	0230
Zinwell	1206
Zodiac	1831

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