OCTOPUS™

by Opus Technologies

Octopus Multi-Room Entertainment System

Installation Guide

FR

La version francaise de ce manual est disponible sur le site **www.opus-technologies/octopus/manuals**

DE

Eine deutsche version des installations-handbuches ist verfugbar unter **www.opus-technologies.co.uk/octopus/manuals**

ES

La version en espanol de este manual esta disponible en **www.opus-technologies.co.uk/octopus/manuals**

IT

La versione in lingua italiana di questo manuale e disponibile sul sito **www.opus-technologies.co.uk/octopus/manuals**

NL

Een nederlandse versie van deze gebruiksaanwijzing is beschikbaar via via **www.opus-technologies.co.uk/octopus/manuals**

DK

Den danske version af denne manual er tilgængelig på vores hjemmeside **www.opus-technologies.co.uk/octopus/manuals**

RU

Русская версия инструкции размещена в Интернет на сайте **www.opus-technologies.co.uk/octopus/manuals**

CONGRATULATIONS ON YOUR PURCHASE!

Octopus Multi-Room is a distributed, multi-room home entertainment system capable of delivering high quality audio and video* to multiple rooms in your home.

Once installed, all your centrally located audio and video equipment will be accessible from individual rooms using discreet wall-mounted control panels, and stylish system remote controls. Sound and vision is then delivered through high quality flush ceiling-mounted or wall-mounted speakers (or conventional speakers, should you prefer) and appropriately connected televisions or monitors.

Enjoy!

Matthew Bramble
Technical Director

*When a VSU300 Video Switching Unit is installed

Contents

Note - All diagrams and instructions in this guide refer to the EU version of the WCU310

Important safety information

Before laying cable or installing an Octopus system it is important that you check and comply with all building regulations or building code applicable to your country, state or area. If you are in any doubt contact your local building regulations/code officer and/or seek professional advice from a suitably qualified person.

Read instructions - All the safety and operating instructions should be read before the product is operated.

Retain instructions - The safety and operating instructions should be retained for future reference.

Heed warnings - All warnings on the product and the operating instructions should be adhered to.

Follow instructions - All operating and use instructions should be followed.

Cleaning - Unplug all system components from the wall outlet before cleaning any part of the system. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

Attachments - Do not use attachments which are not recommended by the manufacturer as they may cause hazards.

Water and moisture - Do not install the system hub/PSU near water - for example, near a bath tub, wash bowl or kitchen sink; in a wet basement, or near a swimming pool etc.

Wall or ceiling mounted loudspeakers - should be mounted to a wall or ceiling only as recommended by the manufacturer. Installers should also ensure that all building regulations are strictly adhered to as cutting a hole for a loudspeaker may affect the fire rating of a ceiling or wall.

Accessories - Do not install any part of the system on an unstable surface, stand, bracket or table. The product may fall, causing serious injury to child or adult, and serious damage to the product. Use only a surface, stand bracket or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

A product and stand combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the combination to overturn.

Ventilation - Slots and openings in the cabinets/enclosures are provided for ventilation and to ensure reliable operation of the product and to protect them from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the product on a soft surface. The MCU should not be placed in a built-in installation such as a bookcase

or rack unless proper ventilation is provided and the manufacturer's instructions have been adhered to. For all components, the manufacturers instructions on ventilation must be adhered to.

Power Sources - The PSU should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company.

Grounding or Polarization - In some countries the PSU may be eqiupped with a polarized alternating-current line plug (a plug having one pin wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug into the outlet, try reversing the plug. If the plug still does not fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

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, paying particular attention to cords at plugs, mains sockets/outlets, and the point where they exit from the product.

Protective Attachment Plug - In some countries product may be equipped with a plug having overload protection (fuse). This is a safety feature. If replacement of the plug is required, be sure the service technician has used a replacement plug specified by the manufacturer that has the same overload protection as the original plug.

Lightning - For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet. This will prevent damage to the product due to lightning and power-line surges.

Overloading - Do not overload wall outlets, extension cords, or integral mains sockets/outlets as this can result in a risk of fire or electric shock.

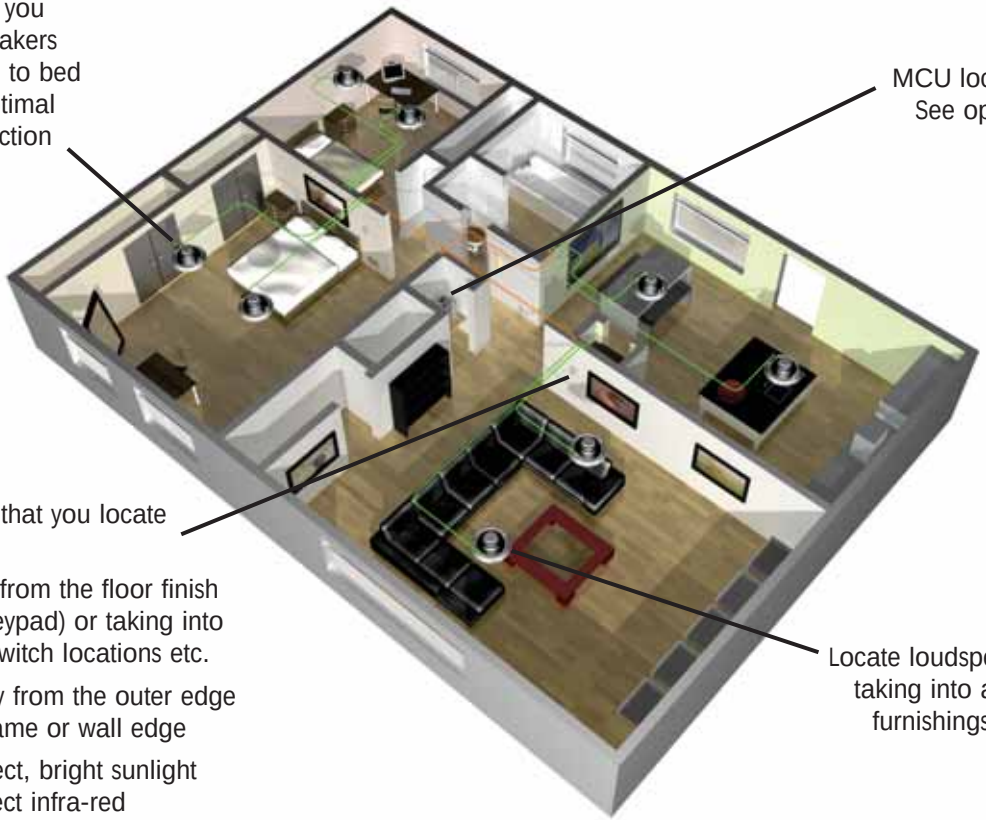
Object and Liquid Entry - Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

Servicing - Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to an authorised service agent.

Damage requiring serive - Refer any part of this system requiring repair to an authorised Opus/Octopus serice agent only.

Heat - The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

In a bedroom it is suggested that you locate loudspeakers above or close to bed location for optimal stereo reproduction



MCU location is critical. See opposite page for details

It is suggested that you locate keypads:

- 138cm height from the floor finish (to centre of keypad) or taking into account light switch locations etc.
- 25-35cm away from the outer edge of any door frame or wall edge
- Away from direct, bright sunlight which may affect infra-red performance

Locate loudspeakers in all rooms taking into account location of furnishings for optimal stereo reproduction

Planning your system

When installing your Octopus Multi-Room entertainment system, consideration should be given to detailed advance planning. We strongly suggest you read this entire manual before commencing any work.

MCU100/300 Master Control Unit

The Master Control Unit is located alongside source components which means you have two MCU location options:

1. Locate MCU and source components in any convenient discrete location with adequate ventilation within the home (such as an under-stair cupboard, service room or cabinet), or ...

2. It is possible to route source equipment through the MCU for output through existing hi-fi or home cinema amplifiers and loudspeakers (in your lounge, for example) while also distributing the signal to the rest of your home.

Should this be required, your existing audio source equipment may be routed from the six Loop Out sockets on the MCU to the amplifier/receiver in your system via high quality audio interconnect cable terminated at each end by phono/RCA plugs.

Similarily video source equipment may be routed from the six Loop Out sockets on the VSU300 to the AV receiver in a home cinema setup using phono/RCA cables designed for video use.

For this configuration the MCU should be located behind your existing system.

The MCU is compact and can be mounted either horizontally, or vertically, such as on a wall, and is powered by a dedicated power supply (Octopus PSA65U).

Try to ensure that the MCU and it's source components are powered from the same set of mains outlets.

VSU300 Video Switching Unit

The VSU300 video switching unit works in conjunction with the MCU to provide video signals to all connected zones, via RG6/CT100 co-axial cabling. Up to 6 video input sources and a CCTV input may be connected and distributed, with their corresponding audio signals routed through the MCU as one of it's dedicated 6 inputs.

The VSU300 may be mounted either horizontally or vertically in the same manner as the MCU, and power is provided by the MCU via a Cat5e patch cable, so no extra power supply or mains socket is required.

Additionally, both MCU and VSU units have loop outputs enabling any connected source equipment signals to be routed directly to separate hi-fi or audio/visual setups. This means that the MCU and VSU units may be added directly into an existing audio/video system to distribute the signals from that equipment around your home.

When deciding upon a location for the MCU and VSU units consideration should be given to space constraints, and power points for the source equipment and MCU, as well as integration into any existing setups.

WCU310 Wall Control Unit

Simple and intuitive control is provided by the WCU310 Wall Control Units.

Housed in a stylishly designed casing, the WCU310 fits into any wall and is available with different finishes to compliment various decorative schemes. Control of your source equipment, volume, bass, treble and other functions can be found on the minimalist front panel.

Each WCU310 may be used as a main zone or sub-zone controller, with the only difference being that the sub-zone must listen to / watch the same source as the main zone.

Should extra amplification power, or an active subwoofer be required (to provide more bass), a line level pre-amp output is provided on the back of the WCU. See page 31.

CS165CC Loudspeakers

When placing the ceiling-mounted speakers, thought should be given to positions which give the best desired sound coverage throughout a room, while not interfering with existing or planned light fittings or joists.

It is advisable to plan all aspects of installation in advance of work beginning, preferably with the house/flat building schematics if available.

CCTV System Connection

It is possible to connect a CCTV camera to your Multi-Room system. Refer to page 31 for details. Please note that extra cabling will be required in addition to that explained in First Fix Instructions.

First fix instructions

INSTALLATION NOTES

Please read all of these installation notes before commencing.

MCU100/300 Master Control Unit

Fix to a hard surface such as a cupboard surface, not to carpet or a soft-lined surface, as this will inhibit airflow through the unit.

Do not situate in close proximity to any installation which will produce excessive electrical noise such as dimmer racks etc; these may interfere with the unit.

Situate within 3 metres of Power Socket.

VSU300 Video Switching Unit (where specified)

Locate in close proximity to the MCU (maximum of 5 metres away).

Fix to a hard surface such as a cupboard surface, not to carpet or a soft-lined surface, as this will inhibit airflow through the unit.

Do not situate in close proximity to any installation which will produce excessive electrical noise such as dimmer racks etc; these may interfere with the unit.

Wiring to zones

Run a Cat5e cable from the MCU to each wall control unit.

Fit a single-gang 47mm (or deeper) back box for each WCU310. Use a fixed backbox as drywall backboxes are not recommended.

Run two standard speaker cables from the WCU310 to mounted loudspeakers.

If video is required, run CT100/RG6 Co-axial cable from the VSU300 main zone connection either directly to the video display, or to a wall-mounted panel fitted with a suitable co-axial connector.

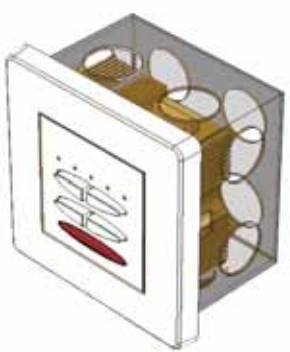
Cabling Tips

Cat5e cable should be run through the installation in electrical conduit, either metal, non-metallic, rigid or intermediate, wherever possible.

Should conduit not be available or impractical, cabling running through frames or beams must be a minimum of 25mm/1" from the nearest edge of that structure. If the frame or beam is metallic, then the cable should be protected by a bush or grommet.

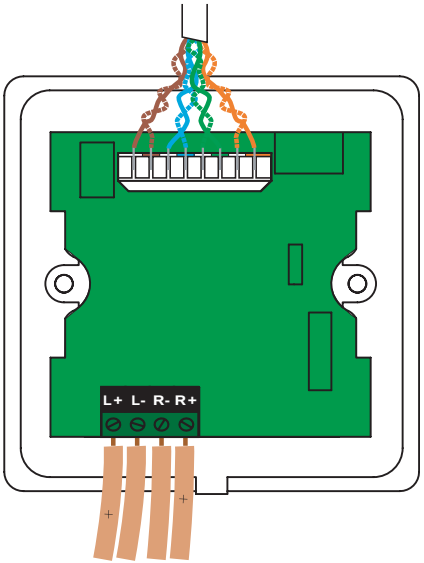
When routing cables around the installation, care must be taken to prevent kinking and trapping. Any cable ties used must not be tightened any more than is necessary to hold the cable in place.

Always re-check the colour code of the Cat5e cable connections to ensure they are correct.



WC310 EU Version

Cat5e
cable



Loudspeaker
cable

WCU310 Wall Control Unit

The WCU310-EU-WH should be fitted into a standard single UK (square) 47mm deep back-box.

The WCU310-EU-ST should be fitted into an Opus BB60 (60mm) deep back-box

The WCU310-CU should be fitted into a standard single US J-box.

The Cat5 cable running from the Master Control Unit is terminated at the 8-way colour-coded punch down connection on the rear face of the WCU310.

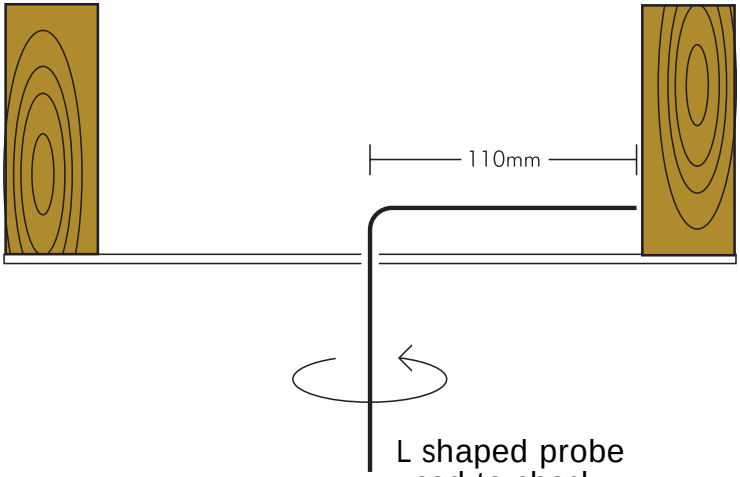
Speaker cable is connected via screw terminals on the rear of the WCU310.

The WCU310 should be positioned at a height of 138cm from the floor finish (to centre of keypad) or taking into account light switch locations etc.

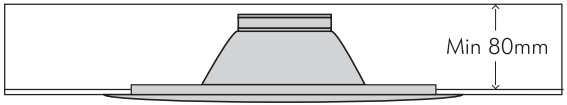
It should also be placed 25-35cm away from the outer edge of any door frame or wall edge.

Locate away from direct, bright sunlight which may affect infra-red performance.

Full instructions for installing your WCU310 are supplied with the keypad.



L shaped probe used to check available void space before cutting loudspeaker holes



CS165CC In-ceiling Loudspeakers

Standard installation would specify CS165-CC ceiling mounted speakers which are matched to the Octopus system for optimum audio performance. However, virtually any customer-specified speaker units may be used.

Where ceiling or wall-mounted speakers are used, care should be taken to ensure that all building regulations are followed.

When mounting speakers flush to a ceiling or wall, ensure that enough depth/clearance is available in the respective cavity. A clearance of at least 80mm is necessary when mounting a CS165CC.

When deciding upon a ceiling or wall placement, care should be taken to avoid joists, load bearing beams etc

Before cutting ceiling loudspeaker holes it is suggested that the area is tested for clearance by making an L-shaped probe from strong wire (eg a coat hanger), drilling a small hole in the target area, inserting the probe and slowly turning. Any obstructions will be immediately obvious, so that the target area can be moved to a more suitable position.

Also, locate loudspeakers taking into account location of furnishings for optimal stereo reproduction.

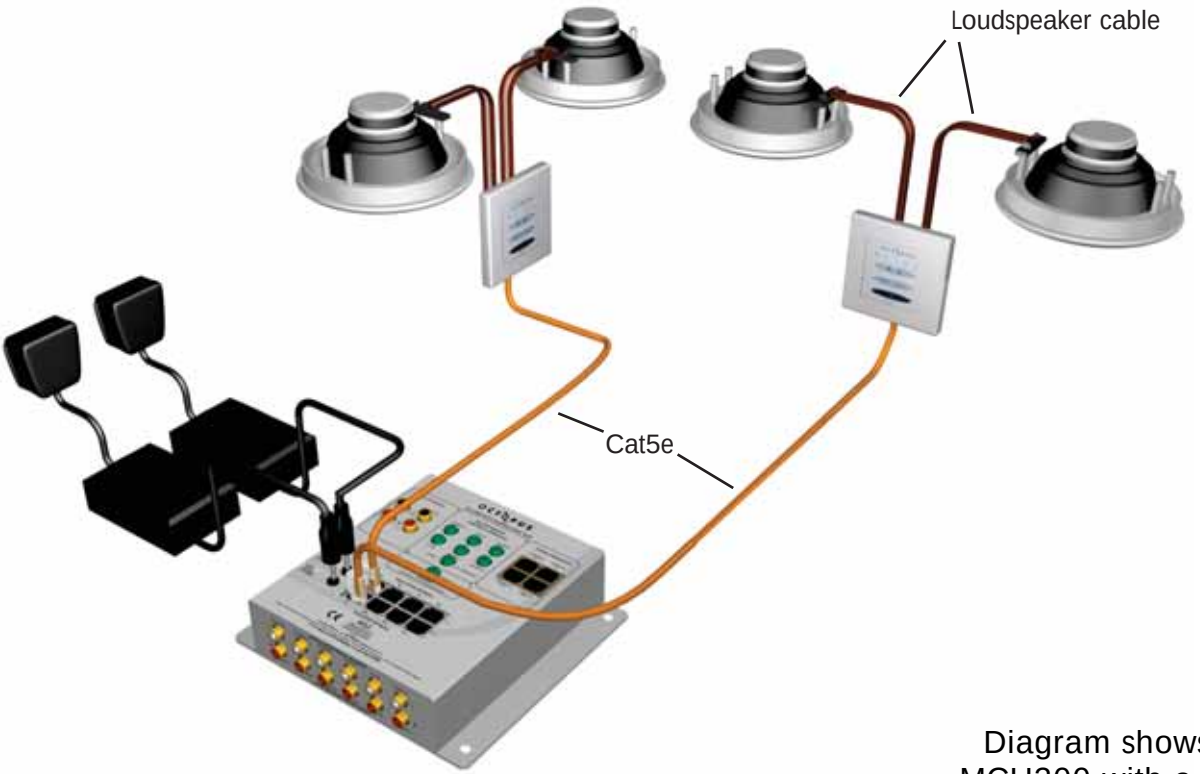


Diagram shows one MCU300 with a main zone and sub-zone attached

System connection

AUDIO CONNECTIONS

PSA65U Power Supply to MCU

For an MCU100 only one PSA65U is required.

For each MCU300 with only four main zones connected (AND NO SUB-ZONES) one PSA65U is required.

For each MCU300 (WITH SUB-ZONES CONNECTED) two PSA65U power supplies are required.

MCU to WCU310

Using a single Cat5e cable, connect each WCU310 to the MCU100/300 via an RJ45 plug at the Master Control Unit, and a 8-way colour-coded punch down connection at the Wall-mounted Control Unit.

The Cat5 connection from MCU to WCU should not exceed 30 metres / 100 feet.

Sub-zones connections are made in the same way as main zone connections but from the sub-zone sockets.

WCU310 to CS165CC or other loudspeakers

Connect the WCU310 to a pair of speakers with two runs of standard high-quality speaker cable.

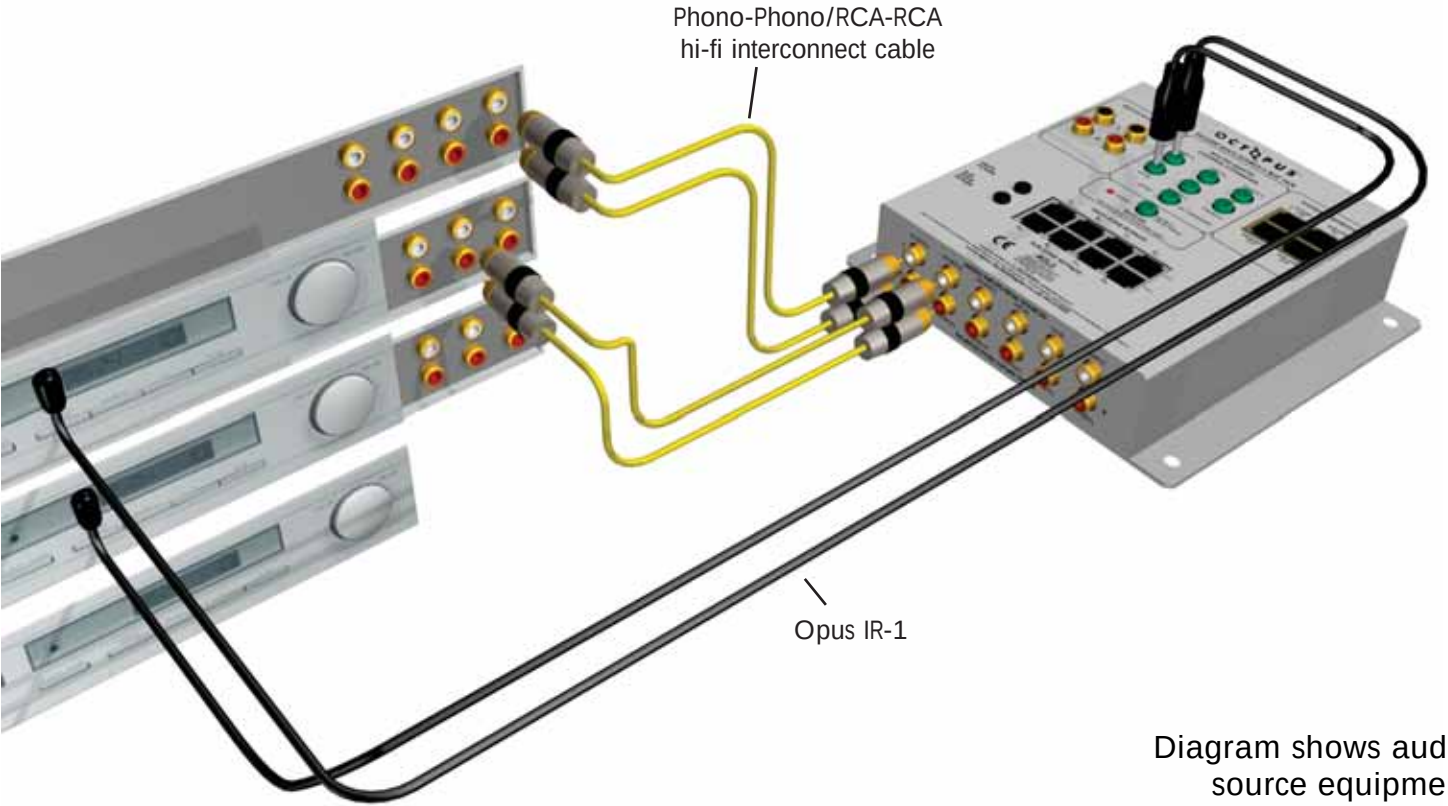


Diagram shows audio source equipment connections

AUDIO CONNECTIONS

Audio Source Equipment Connections

Up to six pieces of audio source equipment can be connected to an MCU. Connections are made from the source equipments' audio outputs to the inputs on the MCU via RCA connections.

Remote control of source equipment through the WCU310

For remote control of the source equipment, 6 routed IR outputs are provided. Individual IR emitters are plugged into the appropriate IR output (corresponding to the respective Audio input) the other end is stuck to the IR receiving window of the source equipment.

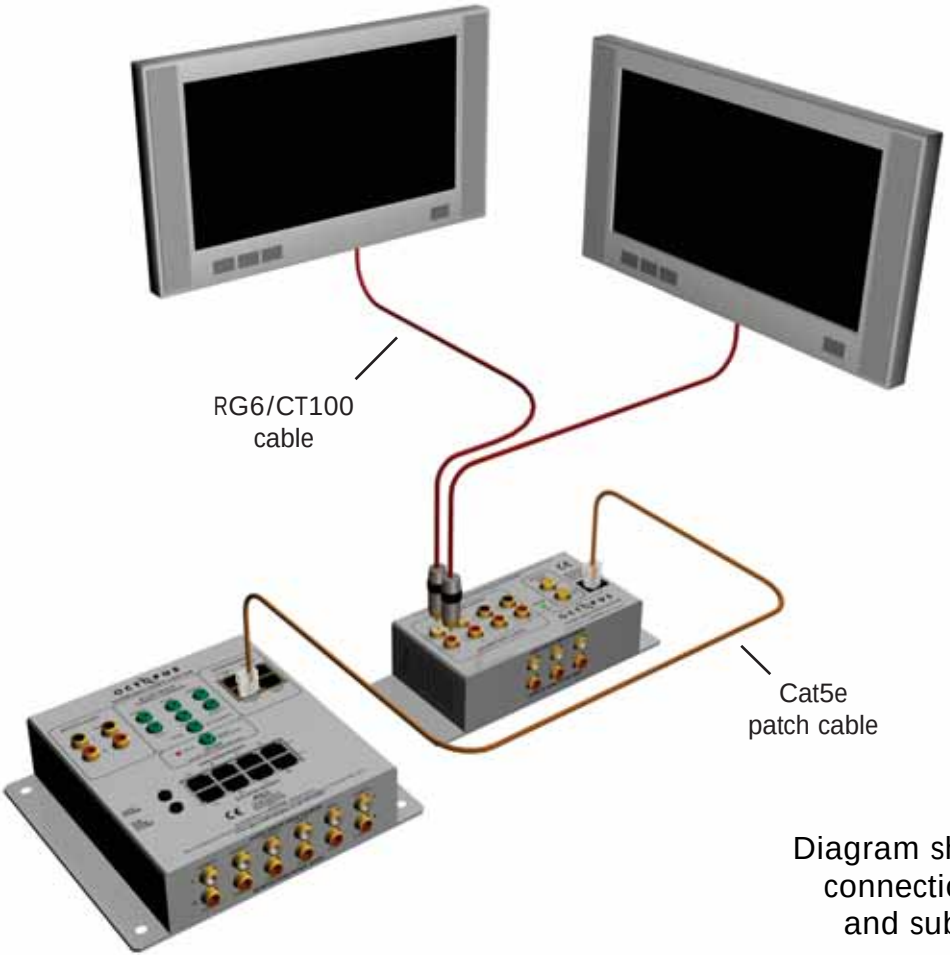


Diagram shows VSU300 connections to a main and sub-zone screen

VIDEO CONNECTIONS

(where a VSU300 video switcher has been specified)

The VSU300 is linked to the MCU300 via a Cat5e patch cable terminated at each end by an RJ45 plug and connected to the Expansion sockets on both units. This provides power, and input switching commands direct from the system remote control or WCU310.

Main video displays are connected to the VSU300 at the "Main Zone" sockets via high quality RG6/CT100 co-axial cable terminated at the VSU300 by a phono/RCA plug.

Sub-zone video displays are connected in the same way, but to the 4 sub-zone sockets on the VSU300.

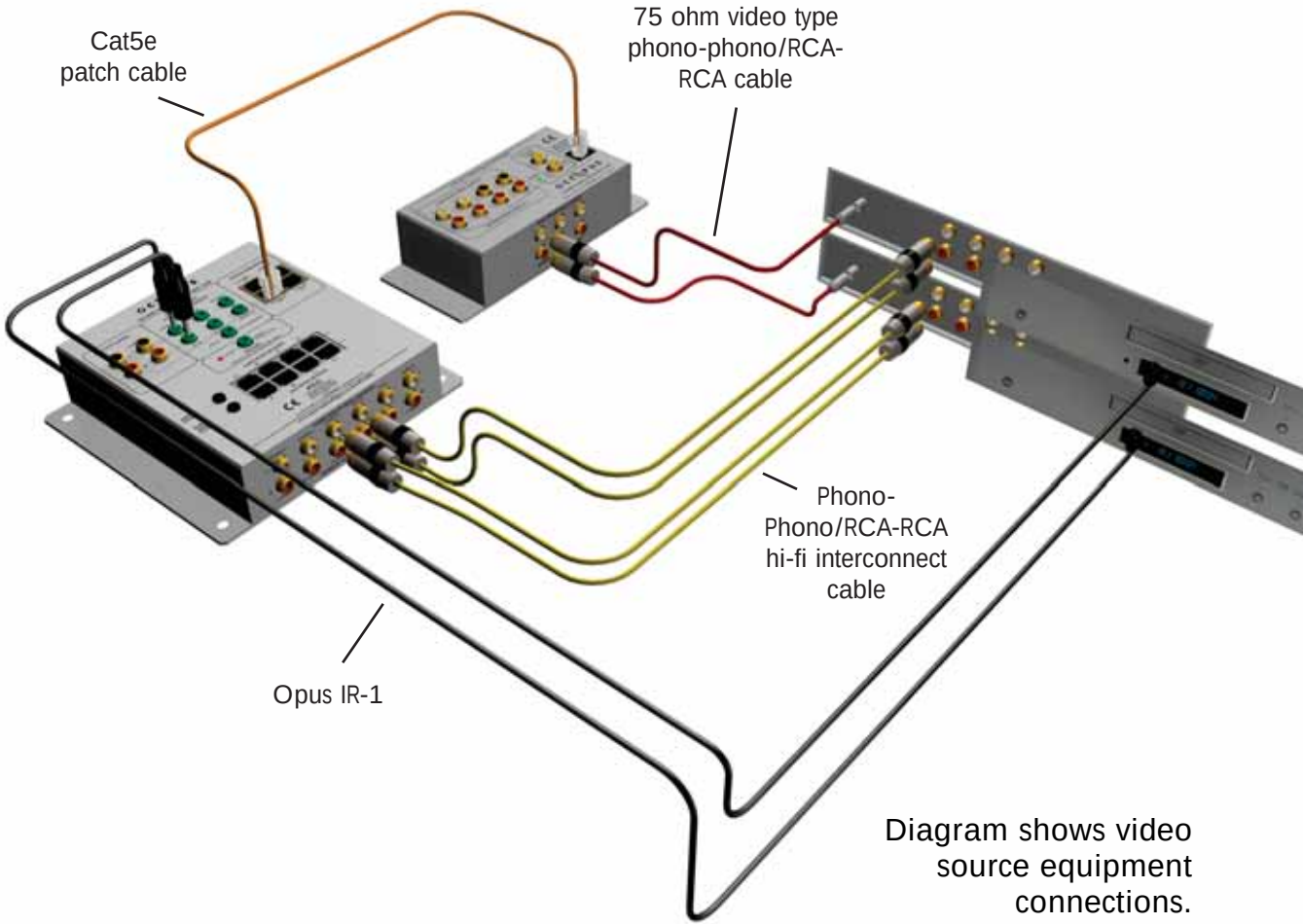


Diagram shows video source equipment connections.

VIDEO CONNECTIONS

Video source equipment connections

Up to 6 video sources may be connected to the Video Switching Unit at any time.

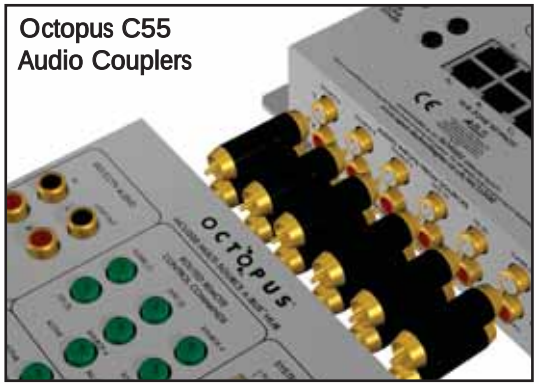
Audio and video connections are made separately. Audio connections are described on page 21

Video connections are made via good quality 75 ohm video cables to the phono RCA sockets marked Video Input 1-6.

Control signals are fed to the VSU from the Master Control unit via a Cat5e patch lead connected to the corresponding Expansion ports.

Remote control of video source equipment through the WCU310

Connections are described on page 21



Cat5e
patch cable

Phono-
Phono/RCA-RCA
hi-fi interconnect
cable

Diagram shows two
MCU300's linked

LINKING UNITS

MCU Linking

For large installations which require more than 4 main zones and 4 sub-zones, an MCU "linking" facility is provided. The linking facility is applicable to both MCU100 and MCU300.

Units are linked via a Cat5e patch cable to the "Hub Link" in and out sockets on the top right hand corner of each MCU.

In order to share audio input sources with the first MCU, the second may be joined using Octopus C55 audio couplers (see diagram detail). These double-ended phono plugs simply connect the "Loop out" sockets of the first MCU, to the "Audio input" sockets of the second, allowing both to access the same sources and distribute them to all available zones.

Up to 4 MCU's may be linked together in this way, providing audio for a maximum of 16 main zones for the MCU100, or 16 main zones and 16 sub-zones for the MCU300.

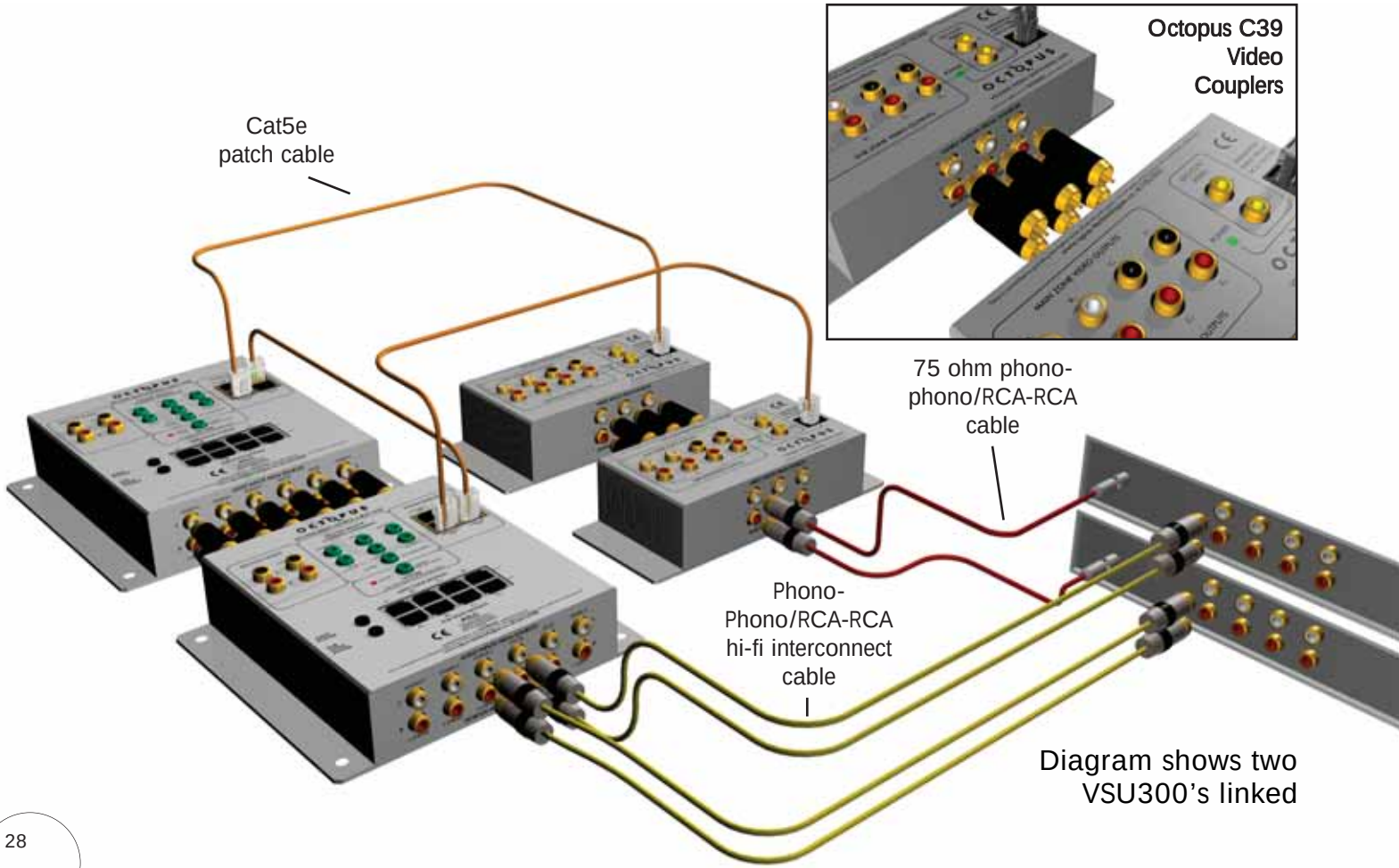


Diagram shows two
VSU300's linked

LINKING UNITS

VSU300 Linking

Should video also be required in more than the 4 main zones and 4 sub-zones provided by the VSU300, then these units may also be linked.

Each VSU300 must be connected to a corresponding MCU via the Cat5e patch cable, in order to provide power and switching commands.

Video input sources may then be shared between both VSU300 units by using Octopus C39 video couplers (See diagram detail). These double-ended phono plugs simply connect the "Loop out" sockets of the first VSU300 to the "Video input" sockets of the second, allowing both to access the same sources and distribute them to all available zones.

Up to 4 VSU300's may be linked together with the corresponding 4 MCU's in this way, providing video for a maximum of 16 main zones for the MCU100, or 16 main zones and 16 sub-zones for the MCU300.

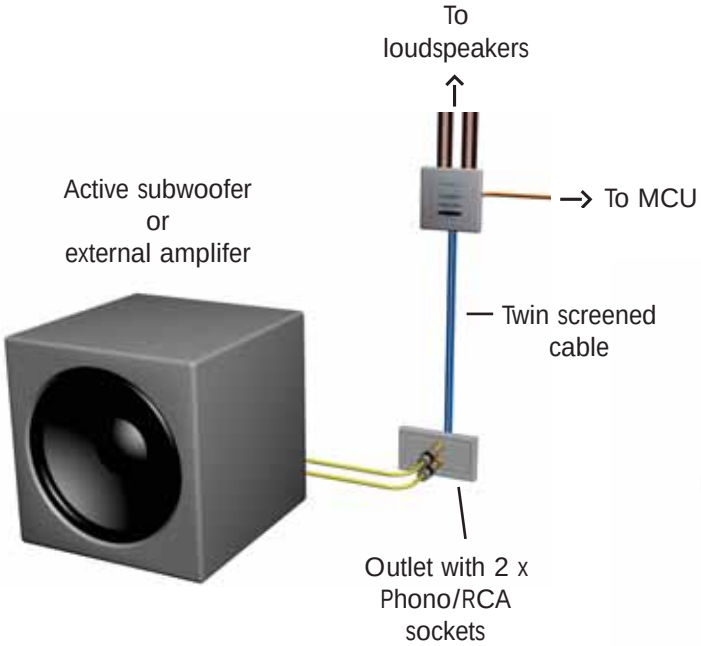


Diagram shows an active subwoofer added to system

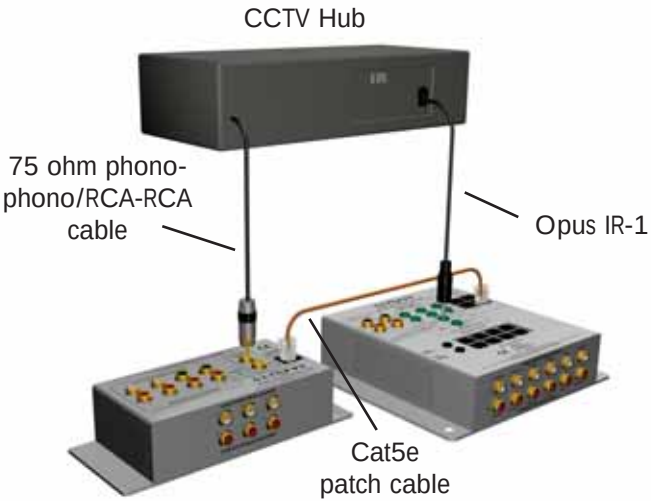


Diagram shows a CCTV added to system

Advanced system options

Connecting an external amplifier/active subwoofer to your system

Should extra amplification power, or an active subwoofer be required (to provide more bass), a line level pre-amp output is provided on the back of the WCU.

Using high-quality audio interconnect cable, an external power amplifier may be connected to the WCU310 pre-amp output screw terminals. This enables a local stereo or home cinema system to reproduce/amplify any source signal selected by the WCU310 in that room.

A fader function on the WCU310 can be used to adjust the in-built amplification effort between the ceiling-mounted speakers and the external amplifier/active sub-woofer, so that the balance between the two can be adjusted.

CCTV link

A CCTV camera may be connected to the Octopus Multi-Room system.

Connect the monitor/TV video signal output to the VSU300 at the CCTV IN socket located on the top surface of the unit allowing the live video feed to be viewed in all connected zones.

If sound is also required, the audio signal output of the CCTV system may be connected to the EXT/CCTV inputs on the MCU.

If the CCTV system is to be remote controlled connect an IR-1 infra-red emitter to the ALL COMMANDS output on the MCU and stick the emitter over the IR receiver of the CCTV system. This will allow the user to control the CCTV system from any room in the house.

System Specifications

MCU

	MCU100	MCU300
No. of source inputs:	6	6
No. of loop outputs:	6	6
No. of external inputs/loop outputs:	1	1
No. of zones per hub:	4 main	4 main + 4 sub
System zone maximum (4 chained MCU's):	16 main	16 main + 16 sub
Frequency Response:	20Hz - 20kHz	20Hz - 20kHz
Trigger Output:	12V @ 100mA	12V @ 100mA
Required Power Input:	24V dc	24V dc
Dimensions (WxDxH) mm:	165 x 172 x 48	165 x 172 x 48
Weight (Net)	1.14Kg / 2.5Lbs	1.14Kg / 2.5Lbs

VSU300

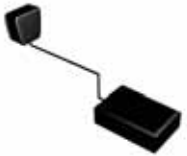
Source Inputs	7 (6 + CCTV)
Source input specification	75 Ohm, composite video
Video bandwidth	10MHz
Maximum cable run to zone	50 metres / 150 Feet
Recommended cable type to zone	RG6 / CT100 75 Ohm co-axial
Required power	Powered by MCU
Dimensions (WxHxD)	165 x 74 x 44 mm
Weight	0.6Kg

WCU310

Frequency Response	20Hz - 20kHz
Volume Control Range	-80dB 32 steps
Bass Control Range	+/- 16dB 2dB steps
Treble Control Range	+/- 16dB 2dB steps
Balance Control Range	+/- 40dB 9 steps both ways
IR Pass-through	34 - 40kHz and 54 - 58kHz modulation
Power	powered from MCU via Cat5 cable

CS165CC LOUDSPEAKERS (EACH)

Frequency Response	58Hz - 20kHz +/- 3dB
Sensitivity	90dB SPL @ 1Watt/1 metre
Nominal Impedance	4 ohms
Power Handling	15 - 80 Watts
Enclosure type	In-ceiling infinite baffle
Drive Components	One 1.3cm tweeter, One 16.5cm woofer
Crossover Frequency	4.5kHz
Mounting Depth Required (Min)	75mm
Cutout Dimensions	207mm
Recommended back air volume	22 litres
Weight	1.5Kg



PSA65U POWER SUPPLY

Input:	100-240V AC 50/60Hz
Output:	24V DC @ 2.5A
Efficiency:	80%
Line/Load Regulation:	5%
Approvals:	UL, CE, T Mark, TUV, FCC Class B, EN 55022B, EN 50081-1: 1997, EN 61000-4-2/3/4/5/6, Level 2, EN 61000-4-11

C55/C39 COUPLERS

Unit Length	C55 Audio Coupler - 55mm C39 Video Coupler - 39mm

REMOTE HANDSETS

	SRC300	LRC300
Battery	2 AA/LR6 alkaline batteries	4 AAA/LR03 alkaline batteries
Dimensions (WxHxD)	43 x 18 x 182mm (approx.)	65 x 25 x 190 mm (approx.)
Weight	112g (inc. batteries)	200 g (inc. batteries)

FAQs

1.What is the difference between multi-source and single-source hubs/ MCUs?

A single source hub will only allow you to listen to one audio source at a time throughout the home. A multi source hub will allow you to listen to different audio sources in each zone simultaneously.

2.What entertainment equipment can I connect?

The Octopus system is compatible with almost any type of hi-fi or video separate.

3.What is the difference between a main zone and a sub-zone?

A sub-zone can only listen to the same audio source as is being listened to in the main zone. The sub-zone has independent power, volume and tone controls from the main zone.

4.How many rooms can a system serve?

Each MCU100 can serve 4 main zones whilst the MCU300 supports 4 main + 4 sub-zones. 4 MCU's can be chained together supporting up to a maximum of 16 main zones and 16 sub-zones. If a larger system is required it is possible to have two or more separate systems running independently giving unlimited expandability.

5.Can I use any Cat5e cable or must I use the orange Octopus Cat5e cable?

Any type of Cat5e can be used.

6.Do I have to use Octopus speakers?

No, but it is highly recommended as the Octopus speakers are optimised and impedance matched to the keypad amplifiers.

7.How many remote controls can the system have?

There is no limit to the amount of remotes you can have. If required you can have a remote in each room.

8.What advice can you give for keypad location?

When locating a keypad you should avoid putting in direct sunlight or in close proximity to Plasma screens. Care should also be taken locating it near to devices that produce electrical noise such as mechanical dimmers. See planning section on page 17.

9.Is there a maximum cable run from MCU to each WCU?

Yes, the maximum cable run is 30 metres / 100 feet.

Limited warranty

Opus Technologies warrants this product to be free from defects in materials and workmanship (subject to the terms set forth below). Opus Technologies will repair or replace (at Opus Technologies' option) this product or any defective parts in this product. Warranty periods may vary from country to country. If in doubt consult your dealer and ensure that you retain proof of purchase.

To obtain warranty service, please contact the Opus Technologies authorised dealer from which you purchased this product. If your dealer is not equipped to perform the repair of your Opus Technologies product, it can be returned by your dealer to Opus Technologies or an authorised Opus Technologies service agent. You will need to ship this product in either its original packaging or packaging affording an equal degree of protection.

Proof of purchase in the form of a bill of sale or receipted invoice, which is evidence that this product is within the warranty period, must be presented to obtain warranty service.

This Warranty is invalid if (a) the factory-applied serial number has been altered or removed from this product or (b) this product was not purchased from an Opus Technologies authorised dealer. You may call Opus Technologies or your local country Opus Technologies distributor to confirm that you have an unaltered serial number and/or you purchased from a Opus Technologies authorised dealer.

This Warranty does not cover cosmetic damage or damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or modification of, or to any part of, the product. This Warranty does not cover damage due to improper operation, maintenance or installation, or attempted repair by anyone other than Opus Technologies or an Opus Technologies dealer, or authorised service agent which is authorised to do Opus Technologies warranty work. Any unauthorised repairs will void this Warranty. This Warranty does not cover products sold AS IS or WITH ALL FAULTS.

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