

MERIDIAN MULTIROOM TECHNICAL REFERENCE MANUAL

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The information contained in this document is provided for the express purpose of specifying, installing and repairing:

Meridian Multiroom™ installations.

Any other use is strictly forbidden.

Appendix A

A.1 Colours in multicore cabling

Where possible assign cable cores sequentially, and give the same meaning to each colour throughout the whole installation.

The preferred colour convention is DIN47412. The following table shows the DIN and B.S. assignments to help you with alternatives.

	DIN	BSI
1	White	Red
2	Brown	Blue
3	Green	Green
4	Yellow	White
5	Grey	Black
6	Pink	Brown
7	Blue	Violet
8	Red	Orange
9	Black	Pink
10	Violet	

We suggest the following assignments on three-core cable:

	DIN	BSI
1	White	Red
2	Brown	Blue
3	Green	Green

We suggest the following assignments on six-core cable:

	DIN	Non-BSI
1	White	White
2	Brown	Blue
3	Green	Green
4	Yellow	Yellow
5	Grey	Black
6	Pink	Red

We suggest the following assignments on eight-core cable:

	DIN	Non-BSI
1	White	White
2	Brown	Brown
3	Green	Green
4	Yellow	Yellow
5	Grey	Black
6	Pink	Violet
7	Blue	Blue
8	Red	Red

A.2 Colours in audio cabling

Where possible incorporate the conventional audio colour codes that assign:

Left white and blue
Right red and green

NOTE: Screened twisted pairs may be assigned in the DIN or BS sequence. Cable intended for audio will have the following colour code which is that of *Meridian System Audio Cable* for which there are two standards:

- S1-LA system1 left hot (Blue) (White)
- S1-LG system1 left cold (Brown) (Black)

- S1-LD system1 left drain (Black) (Red)
- S1-RG system1 right cold (Brown) (Black)
- S1-RD system1 right drain (Cu)
- S2-LA system2 left hot (Blue) (Blue)
- S2-LG system2 left cold (Black) (Black)
- S2-LD system2 left drain (Cu)
- S2-RA system2 right hot (Green) (Green)
- S2-RG system2 right cold (Black) (Black)
- S2-RD system2 right drain (Cu)

Depending upon the transmission system, see section 9, the cold cores will be ground return or the — phase of a balanced signal. Hot means + phase or signal hot.

A.3 Meridian Command cable

Standard connections are as follows:

- S1-C System 1 command (White)
 - S2-C System 2 command (Brown)
 - +10 10V DC supply (Yellow)
 - +18 +18V DC supply (Pink)
 - -18 -18V DC supply (Grey)
 - COM common returns (Green)
- and (Screens)

A.4 Command cable specifications

The command cable must use at least six cores.

- two screened cores of less than 120pF/m
- two insulated cores of 0.5A current rating (± 18)
- two insulated cores of 1.5A current rating (+10, COM)

Notwithstanding these specifications the installer must ensure that in the lengths required for a particular job the cables used do not drop more than 2VDC on any of the ± 18 V, or +10V supplies. In some cases where the 223 is unfortunately situated this may involve running additional thicker cable in parallel with the command cable.

A.5 Meridian digital cable

The preferred cable for digital audio distribution is *Meridian Digital Cable*. This cable has the following features:

- Double-screened coaxial construction for minimum interference and best sound.
- Small diameter — only 3.5mm
- Accurate for pulses, low loss of 3dB/km and 75R $\pm 5\%$.

Appendix B Using 201/202

B.1 Why use 201/2?

202 is the designation given to a 201 which is fitted with:

- a system-2 module 210 and
- an EPROM version [201.4] or later. (See 201 service manual).

201 is an extremely important *Meridian* Multiroom component for the following reasons:

- As the 200-Series Control unit it is the prime Multiroom controller.
- 201 has full remote control of its functions from a 209 system handset.
- 201 can supervise the remote control of a 204.
- 201 can be used as a remote sensor for 207, or 204 in a distributed-product installation.
- The prime functions of source selection, volume, standby and mute are available to all *Meridian* Multiroom products.
- Certain display information is available to 222 and D600 including source, volume *STANDBY* and *MUTED* conditions.
- Each variable output is switchable between CD, Radio, LP, Tape1, Tape2 and Video. In a Multiroom installation these inputs have a unique identity and are not confused with the inputs of a 207.
- Mute facility
- Full *Meridian* Multiroom controller status. A 201 can be set to a *NOT-CONTROLLER* state by grounding the *NOT-CONTROLLER* pin on the 200-Comms socket.
- 200-Comms socket has a limited +5V output for powering one only 212/A or 220/A.

In addition to being the major controller product for a Multiroom system, the 201 can be upgraded to a 202 as described above, then it has the following features:

- Two separate independently controllable outputs for Multiroom systems.
- The two systems have 'Open' and 'Closed' protocols, see section 15 of this manual and the 201/2 user manual, a copy of which is included with this manual.
- The two systems can have independent *STANDBY* conditions.
- The headphone output can be connected to **System 1** or **System 2**.

The 201 and 202 have some unique features designed to enhance the Multiroom system including:

- The ability to limit the maximum volume number independently on either system.
- The ability to make either or both of the system outputs fixed, so-called external volume control mode for use in fixed-level distribution systems.
- System independent 'Open' and 'Closed' flags for user convenience.

- The ability to store an initial out-of-standby condition for the installation.
- The ability to store and act on a stored timer condition.
- The ability for either system to be in *STANDBY* and for the sources to be managed in this regard.

B.2 Options

- Phono module 215
- Test plug 201 to allow external volume control, i.e. fixed level distribution of audio. Fit this plug to the RS232 socket.
- EPROM number F01.X for permanent disabling of the variable output at volume number 48. (For use in fixed-level distribution).

B.3 Restrictions

- You should not use more than one 201 or 202 in the same room.
- You cannot use more than one 201 or 202 connected to the same systems (**System 1**, **System 2** or **Local**) without loss of remote functionality.
- If 207 is in the same room as a 201 or 202 system controller, then it must be set to *NOT-CONTROLLER* state.

B.4 Power requirement

According to the local supply 201 uses AC power between 100V and 250V rms. The product is rated for 50–60Hz and at 20VA. The correct fuse ratings are:

- 250mA slo-blo for 220–250V
- 500mA slo-blo for 100–120V

Refer to the 201 Service manual for details of voltage selection.

B.4.1 Installation safety

WARNING: The 201 is an appliance and **MUST** under all circumstances be powered from a conventional switched fused power outlet using the AC cord supplied.

NEVER NEVER must the 201 be attached directly to the permanent AC power wiring of the house.

WARNING: Under all circumstances the chassis of the 201 must be returned to a good reliable ground connection. As supplied this is done via the power cord.

B.5 Connecting to 201

B.5.1 Audio connections

- Connect other sources in the usual way to the inputs of the 201.

- Make audio connections from the variable outputs to the junction box, if the junction box is a 223 use **R1-lead** and/or **R2-lead**. (These also connects **Comms**. The **R2-lead** has an additional **Red** core which accesses a low-current +5V supply suitable for operating one only 212/A or 220/A. Never connect the **Red** core of an **R2-lead** if you have a 223 in the system, make the spare core safe).
- Make the audio and command connections to other junction boxes also using **R-leads**, you may have to cut off the plugs at the junction end and make connections to a barrier strip.

NOTE in fixed-level distribution systems then you could use either:

- The variable output, set **EXTERNAL VOLUME** state (N.B. you need to fit a Test Plug, see B2) and adjust the volume number to 48 on the fixed-level systems from the front panel.
- The **Tape** out sockets with the loss of **Tape1** and **Tape2** as a distributable input, and providing there is a buffer module in a 223 starting the network.

If the 201 is local to a 222:

- Disconnect the 201's internal infrared sensor, see Appendix P.
- Connect the variable outputs to the 222 **Local** phono inputs.

B.5.2 Comms connections and location

Ensure that the unit is connected for **Comms** to the network. Depending on the installation a 201 can be connected to:

- **System 1 Comms** (S1-C)
- **System 2 Comms** (S2-C)
- **System Local Comms** (SL-C in a 222)

Check the following rules:

- Normally the first 201 in an installation will be connected to **System 1 Comms** and a 202 will also connect to **System 2 Comms**. If the network starts with a 223 then use **R1-lead** for **System 1** and **R2-lead** for **System 2**, see section B5.2.
- If the 201 is to be local to a 222 then connect the **Comms** of the 201 to **SL-C** in the 222.

See the following section.

B.6 200-Series Comms interconnection

NOTE All remotely-controllable products in a *Meridian* Multiroom installation must eventually be connected together from a communication point of view if the installation is to work properly. This interconnection we call **Comms** and there are in the *Meridian* Multiroom system four different identifiable connections or nets. Each connection or net is joined up using a screened coaxial cable, details of this are covered in section 12 of this manual. The four connections are:

- **System 1 Comms** or S1-C. This is the normal default connection used in a simple 200-Series installation and is often managed by using **P-lead** and **Q-lead** connections between 201, 204 and 207.
- **System 2 Comms** or S2-C. This is a second distributed connection for controlling the second output of a 202 OR for controlling a second source of a type found also on **System 1**, OR for controlling a source that belongs only to **System 2**.
- **Local Comms** or SL-C in a 222. A product can be a local source or controller to a 222 and this is the connection used between them.
- **Local bus** in a D600 installation ONLY connects between D600s.

The diagrams on page B4 show the connections to the various comms-related sockets of the 200-Series products. In some installations you will have to make connections using the correct DIN plug and screened cable. In some cases you will also have to make a shorting-link in the DIN plug to pull to ground one of the following:

- **201-SENSE** in a 207. Puts 207 in **NOT-CONTROLLER**, volume is no longer remotely controllable, other functions remain.
- **207-SENSE** in a 201. Assumes when grounded that a 207 is present and can 'see' all remote commands. Causes 201 to stop controlling a 204.
- **NOT-CONTROLLER** in a 201. Makes 201 subservient to another controller. Prevents remote-control of volume and stops the 'echo' of commands not used by the 201.

B.6.1 201/202 comms connections

Multiroom installations using a 201 or 202 are relatively simple to connect, particularly if the network begins with a 223 Power Supply and junction box.

- **Connect the System 1** socket of the 201 to the **System 1** audio (phono) and **CommsA** (DIN) sockets of the 223 using an **R1-lead**.
- Connect the **System 2** socket of a 202 to the **System 2** audio and **CommsB** sockets of the 223 using an **R2-lead**.

Otherwise if you do not have a 223:

- Connect **System 1** (and **System 2** if appropriate) sockets of the 201/2 to the **System 1** and **System 2** audio inputs (phono) of a 222 or 225.
- OR connect them to another junction box using the barrier-strip connections after removing the phono plugs provided on the **R-lead**. Connect to **System 1** and **System 2** left, right, common and drain.
- AND remove the DIN plug from the junction-box end of the **R-lead** and connect this **Comms** lead to S1-C and/or S2-C and COM.

NOTE If the installation uses a 207 and/or 204 adjacent to the 201 or 202 then their Comms are normally dealt with using the **P-lead** and **Q-lead** supplied with the products. Using these leads makes the 207 and 204 belong to **System 1 Comms**.

B.6.2 207 and 204 Comms connections

If a 207 is being used as the system controller or as a source on a distributed products installation then you can use a **C-lead** to connect it to any junction box.

- Connect the **Blue** bare-wire end of the **C-lead** to the barrier-strip connections of the junction box. Choose **S1-C**, **S2-C** or **SL-C** and the screen to **COM**. (Make the **Red** core safe).
- Connect the other (DIN-plug) end of the **C-lead** to the Comms socket on the 207.

NOTE If there is a 204 adjacent to a 207 controller (no 201) then use the **P-lead** provided to connect 207 to the 204, and use a **T-lead** from the 204 to the junction box in an identical manner to the **C-lead**.

Similarly **C-lead** can be used to connect a 207 to a local 222.

B.6.3 Using one 212/A or 220/A with 207

To use a 212/A or 220/A with a 207 make the following connections:

- **Screen** of 212/A cable to 207 Comms pin 2.
- **RC5 Blue** of 212/A cable to 207 Comms pin 5.
- **+5V Red** of 212/A cable to 207 Comms pin 1.

B.6.4 Using one 212/A or 220/A with 201

To use a 212/A or 220/A with a 201 make the following connections:

- **Screen** of 212/A cable to 201 Comms pin 2.
- **RC5 Blue** of 212/A cable to 201 **System 1** Comms pin 00 or **System 2** Comms pin 6.
- **+5V Red** of 212/A cable to **System 2** Comms pin 7.

B.7 Installation and service aids

- **C-lead**
- **T-lead**
- **R1-lead**
- **R2-lead**
- **Test plug**

A service manual is available.

B.8 Setting up procedures

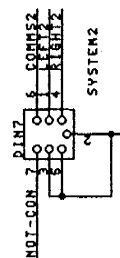
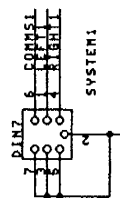
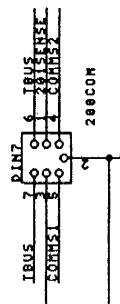
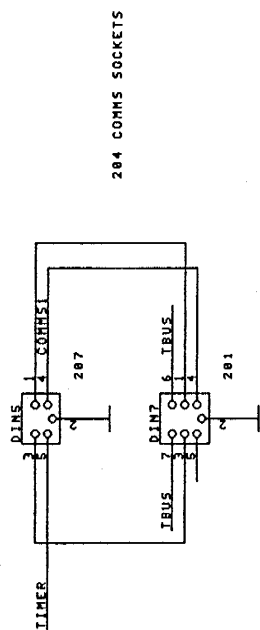
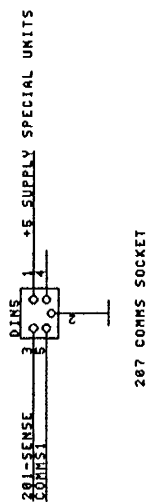
A 201 or 202 has several adjustments including:

- Input offset adjustments
- Out of standby selection and volume for both systems.
- 'Open' and 'Closed' protocols
- Max volume setting
- Mute level
- Internal or external volume control

Use the 201/2 user manual to set these up. If there is an associated 204 then store these conditions using **Mode * Standby**.

B.9 User instructions

A full user manual is supplied with the 201 and a copy is included with this manual.



Appendix C Using 204

C.1 Why use 204?

204 is the 200-Series FM Tuner/Timer and as such is ideally suited to *Meridian* Multiroom installations. Particular advantages of the 204 are:

- It can be controlled remotely to go to one of its 18 preset stations.
- It can be controlled from a 222 to go to any of its presets or to the next preset.
- 204 contains a battery-backed memory which is used for storing 201 and 202 setup information.
- frequency or preset number display information is available for 222 or D600 type products.
- 204 has a timer facility which can be used to activate a 201, 202 or 207. It can be used to activate a complete Naive system.

NOTE The 204 cannot function to activate remote rooms on a Smart system. 222 and D600 do not respond to it.

C.2 Restrictions

204 does not have an infrared sensor, instead it receives control information from a 201, or if present, a 207. It is possible to install a 204 in a room separate from the 201 or 207, however the following restrictions apply:

- You cannot use this 204 to backup 201 settings since the Q-lead is not readily extendible and is a custom 201-204 interface. (Tuner bus).
- If possible use a 207 sensor to convey infrared commands to the 204, you do this by pulling 207-sense on a 201 to ground. (See 201 service manual and the details in Appendix B).

C.3 Power requirement

According to the local supply 204 uses AC power between 100V and 250V rms. The product is rated for 50-60Hz and at 20VA. The correct fuse ratings are:

- 250mA slo-blo for 220-250V
- 500mA slo-blo for 100-120V

Refer to the 204 Service manual for details of voltage selection.

C.3.1 Installation safety

WARNING: The 204 is an appliance and **MUST** under all circumstances be powered from a conventional switched fused power outlet using the AC cord supplied.

NEVER NEVER must the 204 be attached directly to the permanent AC power wiring of the house.

WARNING: Under all circumstances the chassis of the 204 must be returned to a good reliable ground connection. As supplied this is done via the power cord.

C.4 Connecting to 204

C.4.1 Audio connections

Make audio connections in the usual way to the preamplifier or junction box. Remember that 204 can be used as a local source or even as the only source for one of the systems (**System 2** for example).

C.4.2 Comms connections and location

Ensure that the unit is connected for Comms to the network. Depending on the installation a 204 can be connected to:

- **System 1 Comms (S1-C)**
- **System 2 Comms (S2-C)**
- **System Local Comms (SL-C in a 222)**

Check the following rules:

- Normally the first 204 in an installation will be connected to **System 1 Comms**. This may be possible, depending on the other equipment, using the standard P-lead or Q-lead supplied.
- If the installation is Naive then the 204 will be adjacent to a 207 or 201 controller and a P-lead or Q-lead may be used.
- If the system is Smart, the 204 can be located anywhere but it will help if it is next to a 201/202 so that it can store setup information. In this case always use the Q-lead supplied with the 204.
- If the 204 is to be local to a 222 then connect the Comms of the 204 to SL-C in the 222 using a T-lead.
- If the 204 is to belong to **System 2** then connect the Comms of the 204 to the network **System 2 Comms**, e.g. S2-C in a 222 or 225, using a T-lead.

NOTE To connect to the 204 Comms refer to the section in Appendix B which deals with 200-Series Comms interconnection.

C.5 Installation and service aids

A Q-lead is provided.

A service manual is available.

C.6 Setting up procedures

There is no Multiroom-specific set up procedure. The adjustments and setup of a 204 are adequately covered in its user manual, and include:

- Tuning and storing presets
- Setting 'Stop Strength'
- Setting the clock
- Storing system **STANDBY** conditions.

C.7 User instructions

A full user manual is supplied with the 204 and can be bought from *Meridian*.

Appendix D Using 205

D.1 Why use 205?

The *Meridian 205* is a stand-alone mono 100W power amplifier. It is ideally suited to Multiroom installations for the following reasons:

- 205 operates in non-switching class AA mode and has a very low quiescent power dissipation, hence it uses little energy in idle and runs nearly cold.
- 205 features music-sensing. This feature causes the amplifier to go into *STANDBY* about six minutes after the end of a piece of music.
- 205 is constructed in an all-metal case which is grounded to the utility ground. It is therefore inherently safe for locating out of sight provided sufficient cooling is available.

D.2 Options

There are no options with 205.

D.3 Restrictions

Adequate cooling must be provided for any power amplifier.

Do not connect more than two 8ohm rated loudspeaker loads to the output of a 205.

D.4 Power requirement

According to the local supply 205 uses AC power between 100V and 250V rms. The product is rated for 50–60Hz and at 200VA. The correct fuse ratings are:

- 3.15A slo-blo for 220–250V
- 5A slo-blo for 100–120V

Refer to the 205 Service manual for details of voltage selection.

D.4.1 Installation safety

WARNING: The 205 is an appliance and **MUST** under all circumstances be powered from a conventional appliance switched fused power outlet using the AC cord supplied.

NEVER NEVER must the 205 be attached directly to the permanent AC power wiring of the house.

WARNING: Under all circumstances the chassis of the 205 must be returned to a good reliable ground connection. As supplied the 205 expects this to be done via the power cord.

D.5 Connecting to 205

- Loudspeaker connections are made in the usual way.
- Audio input to the 205 is by phono-plug and normal audio hook-up wire.
- For details of connecting 205 to 222 see Appendix I.

The 205 electronics are connected to its case (and hence AC ground) by an EMC linking capacitor of 100nF. At low frequencies this means that essentially the 205 electronics float free.

D.6 Installation and service aids

There are no installation aids.

A service manual is available for 205.

D.7 User instructions

205 is supplied with a full user manual.

Appendix E Using 207

E.1 Why use 207?

207 is an extremely important *Meridian* Multiroom component for the following reasons:

- As the 200-Series CD player it is the prime source.
- 207 has full remote control of its functions from a 209 system handset.
- 207 can supervise the remote control of a 204.
- 207 can be used as a remote sensor for 201, 202 or 204 in a distributed-product installation.
- 207 has a digital output for use with D600 and other digital audio products.
- The prime functions of track selection, play, stop, and pause are available via smart Multiroom products like 222 or D600.
- Certain display information is available to 222 and D600 including Max tracks, current track, *STOPPED*, *PAUSED* and *MUTED* conditions. (N.B. D600 takes current track from the digital audio).

In addition to being the major source for a Multiroom system, the 207 has a comprehensive preamplifier facility and can be used as the only controller for a Multiroom installation. It has the following important facilities:

- Fixed output for CD — this could drive one system direct or be distributed to another controller.
- Variable output which is switchable between CD, LP, Tape3 and Line. In a Multiroom installation these inputs have a unique identity and are not confused with the inputs of a 201.
- Mute facility
- Full *Meridian* Multiroom controller status. A 207 can be set to a *NOT-CONTROLLER* state by grounding the 201-SENSE pin on the 200-Comms socket.
- Comms socket has a limited +5V output for powering one only 212/A or 220/A.

E.2 Options

207 has the following options:

- 215 phono module to allow the LP input to play MM or MC cartridges.
- Link module to allow the LP input to be used as a high-level input.
- EPROM number F07.X for permanent disabling of the variable output at volume number 48. (For use in fixed-level distribution).
- **Test plug 207.** This is normally for test purposes, but it has a particular use in Distributed systems. A 207 fitted with the **207 Test Plug** is permitted to pass on the infrared commands LP and CD to a 201 or 202 in another room.

E.3 Restrictions

- You should not use more than one 207 in the same room without some loss of remote functionality.

- You cannot use more than one 207 connected to the same system (**System 1**, **System 2** or **Local**) without loss of remote functionality.
- If 207 is in the same room as a 201 or 202 system controller, then it must be set to *NOT-CONTROLLER* state.

E.4 Power requirement

According to the local supply 207 uses AC power between 100V and 250V rms. The product is rated for 50–60Hz and at 20VA. The correct fuse ratings are:

- 250mA slo-blo for 220–250V
- 500mA slo-blo for 100–120V

Refer to the 207 Service manual for details of voltage selection.

E.4.1 Installation safety

WARNING: The 207 is an appliance and **MUST** under all circumstances be powered from a conventional switched fused power outlet using the AC cord supplied.

NEVER NEVER must the 207 be attached directly to the permanent AC power wiring of the house.

WARNING: Under all circumstances the chassis of the 207 must be returned to a good reliable ground connection. As supplied this is done via the power cord and by having the rear-panel ground switch set in the 'grounded' position.

E.5 Connecting to 207

E.5.1 Audio connections

If the 207 is not being used as a controller:

- Make audio connections in the usual way from the fixed output to the preamplifier.

Remember that 207 can be used as the only source for one of the systems (**System 2** for example). If the 207 is being used as a single fixed source for a system or is part of a distributed-products installation:

- Make audio connections in the usual way from the fixed output to the junction box.

NOTE in the above instances set the 207 to *NOT-CONTROLLER*.

NOTE in the above instances the variable output can be used independently (controlled by the front-panel keys) to drive a local pair of actives, power amplifier or headphones.

If the 207 is being used as the system controller then:

- Connect other sources in the usual way to the inputs of the 207.
- Connect the variable outputs to the junction box.

NOTE in fixed-level distribution systems then you could use either:

- The variable output, set **NOT-CONTROLLER** state to stop the volume setting changing and adjust the volume number to 48 on the front panel.
- The **Tape out** sockets with the loss of **Tape3** as a distributable input, providing there is a buffer module in a 223 starting the network.

If the 207 is local to a 222:

- Disconnect the 207's internal infrared sensor, see Appendix P.
- Connect the fixed or variable outputs to the 222 **Local** phono inputs.

E.5.2 Comms connections and location

Ensure that the unit is connected for **Comms** to the network. Depending on the installation a 207 can be connected to:

- **System 1 Comms (S1-C)**
- **System 2 Comms (S2-C)**
- **System Local Comms (SL-C in a 222)**

Check the following rules:

- Normally the first 207 in an installation will be connected to **System 1 Comms**. This may be possible, depending on the other equipment, using the standard **P-lead** and **Q-lead** supplied.
- If the installation is naive then the 207 will either be a controller or adjacent to a 201 controller and a **P-lead** or **Q-lead** may be used.
- If the system is smart, the 207 can be located anywhere.
- If the 207 is to be local to a 222 then connect the **Comms** of the 207 to **SL-C** in the 222.
- If the 207 is to belong to **System 2** then connect the **Comms** of the 207 to the network **System 2 Comms**, e.g. **S2-C** in a 222 or 225.

NOTE To connect to the 207 **Comms** refer to the section in Appendix B which deals with 200-Series **Comms** interconnection.

E.6 Installation and service aids

- A **P-lead** is provided to assist installation.
- A service manual is available.
- **207 Test Plug**.

E.7 Setting up procedures

There are no setting-up procedures for a 207.

E.8 User instructions

A full user manual is supplied with the 207 and can be bought from *Meridian*.

Appendix F Using 209 or 609

F.1 Why use 209?

209 is the *Meridian* Multiroom system handset. It combines enough keys to allow complete control of the system by infrared.

A 209 is used in conjunction with 200-Series products including the Multiroom sensors 212, 213 and 221.

609 is a dedicated handset for D600 Digital Active Loudspeakers. A D600 installation can be used as a Multiroom controller and in this case 609 will control the network.

F.2 Restrictions

A 609 cannot be used to control a multiroom system if there is not a pair of D600s in the room.

A 209 will not drive a D600 installation.

F.3 Power requirement

Both 209 and 609 are battery powered. Use alkaline batteries for longer life and better output.

F.4 User instructions

209 and 609 are supplied with complete user manuals.

F.5 Service aids

Service manuals are available for 209 and 609.

Appendix G Using 212

G.1 Why use 212?

212 is an infrared pickup device. Signals corresponding to the RC5 format are collected and conveyed by cable to other parts of the system. Normally the 212 is used to convey commands from the 209 system handset.

A 212 can be used in a variety of different ways including:

- Returning infrared commands to a central equipment location in a naive system. Several 212s can be connected in parallel, they are powered from a 223.
- One only 212/A returning commands to a central location in a low budget two-room installation where a 202 or 207 is used to power the sensor.
- 212 or 212/A as an infrared input device to a 222.
- 212/A as an external 'eye' for a product such as 201 or 207 when they are housed or not in view.

G.2 Options

There are two forms of 212:

- 212 standard requires +10V supply at 5mA
- 212/A requires +5V at 5mA.

NOTE the 212 service manual shows how to convert a 212 to 212/A.

G.3 Restrictions

- Only one 212/A may be powered from a 202 or 207.
- When using 212s on a Naive network take care to account for the **Command Cable** loading as described in section 12 of this manual.
- No more than 20 212s or equivalent should be used on a network without a 214 buffer.

G.4 Power requirement

- 212 standard requires +10V supply at 5mA
- 212/A requires +5V at 5mA.

G.5 Connecting to 212

The 212 comes complete with a 4m length of two-core overall screened cable. More can be bought from *Meridian*, please ask for **212 Cable**. The connections are:

- Screen 0V, ground or common COM.
- **Red**, power supply +10V. (+5V for 212/A)
- **Blue**, signal to connect to S1-C, S2-C or RC5-FP.

212 can be connected:

- Directly by cable to a 201 or 207, see Appendices B and E.
- To a junction box such as 224 or 225, see Appendices K and L.

- To a 222, see Appendix I.
- To a 223, see appendix J.

G.6 Installation and service aids

- The 212 is supplied with a wall-mounting bracket.
- A template is provided to assist with fitting and a copy is included in this appendix.
- **212 Cable**
- A service manual is available for 212.

Appendix H Using 221 or 213

H.1 Why use 221?

221 is the most comprehensive of the input devices that can be connected to a 222 Control Box. It has 16 keys and a large display area.

- The display will read from the current source.
- Convenience control allows the keys to drive controllers like 201 or 202 and to drive sources.
- 221 is fitted with an infrared transmitter that will allow control of other products in the future.

H.2 Why use 213?

213 provides all the facilities of a 222 but they are accessed by remote control using a 209. 213 offers all the display capability of a 221 and is very similar to connect.

H.3 Options

You have the option to connect:

- One or two 221s to each 222. Remember a 222 controls a room or zone. Adding a second 221 could extend a zone to two rooms or allow control and display at opposite ends of a large or L-shaped room.
- One or two 213s to each 222.
- Up to three 213s can be connected in parallel with one 221 or 213 connected to a 222.
- One 221 and one 213 can be connected in parallel to a 222.

H.4 Restrictions

- Must be used with 222.
- No more than two to the same 222.

H.5 Power requirement

Power is taken from a host 222. Each 221 or 213 can require:

- 300mA from the +10V supply.

NOTE The power is drawn from the +10V supply but it is regulated to +5V in the 222.

H.6 Connecting a 221

221 is connected to the host 222 using a cable which has seven cores plus an overall screen. The cores should have at least a 0.5A rating.

- A suitable cable (221 cable) is available from *Meridian*.
- The supplied cable has eight cores, the extra is used as a green in parallel with the screen to improve the ground connection.

Make the connections as shown on page I-6.

H.7 Connecting a 213

213 is connected to the host 222 using a cable which has six cores plus an overall screen. The cores should have at least a 0.5A rating.

- If possible connect with 221 Cable.

Make the connections as shown on page I-6.

H.8 Installation and service aids

- A template is supplied with the product to assist in wall mounting.
- **221 Cable.**
- There are no service aids for a 221 or 213
- A service manual is available for 221 and 213.

H.9 Setting up procedures

There are no setting-up procedures for a 221 or 213, however the host 222 needs to be programmed. See Appendix I.

H.10 User instructions

Refer to Appendix I and the user instructions for the 222.

Appendix I Using 222

I.1 Why use 222?

222 is a Smart Control Box which is used to connect the components associated with a zone in a Smart system. It allows you to drive a local active speaker system or power amplifier from either of the distributed **System 1** or **System 2** signals or from a local source or preamplifier with several sources — e.g. 207.

222 incorporates a comprehensive selection of phono, antenna and barrier-strip connections so that it can be used for installation cable management. Its features are summarised below:

- 222 is constructed in an elegant metal case which is intended primarily for wall mounting. It can be placed at any convenient location for the room or zone it serves.
- If desired the unit may be painted or finished in any suitable finish to match decor.
- Power to operate the 222 is fed to it along the Command Cable.
- Uses 212, 213 or 221 input devices
- Handles digital audio signals
- Handles video/RF signals
- Three audio inputs, normally **System 1**, **System 2** and **Local**.
- Switched audio output with mute.
- Optional local volume control.
- Microprocessor control
- Non-volatile memory for settings
- Full two-way communicator with network.
- Extensive cable management.
- Low-voltage operation and power consumption makes it inherently safe and lie outside safety and code controls.
- Voltage sensor IC automatically resets 222 and reverts to **STANDBY** in the event of 'brown-out'.
- Internal reset switch allows recovery from interference without powering-down the network.

I.2 Options

The 222 is a very versatile component in the *Meridian* Multiroom system. According to how it is wired it can be used in the following ways:

- Destination smart local controller and junction box for Smart systems.
- Source connection for the network. (222 does not have to be the start of the network).
- Destination controller for one system, e.g. **System 1** and source for the network of the other system, e.g. **System 2**.
- Outlet and splitter for video/RF cable. (Source or destination).
- Source or destination for digital audio signal.

Each 222 can be used to control a room or zone (number of rooms doing the same thing). 222 takes user control inputs from either 212, 213, 220 or 221.

Optional modules for the 222 plug in and are as follows:

- 211 is a local balanced-input volume control which operates independently of the main system.
- 216 is a balanced—unbalanced converter without volume for the lowest background noise when using power amplifiers with unbalanced inputs. (Not strictly necessary with any *Meridian* active speakers, but useful in installations with adverse cable pick-up).

NOTE when you fit a 211 or 216 you must remove the two socketed ICs type 4052. These are indicated on the top layer of the PCB.

222 has an optional ground-link which is normally:

- In place if the 222 is the start of a network
- Removed if the 222 is in its normal mode of destination.

NOTE an EMC link is provided and should not normally be removed.

I.3 Restrictions

222 can only be used in Smart systems, see section 5 of this manual. This means that:

- 212 or 220 may not be connected in any room directly to either **Comms1** or **Comms2** (S1-C or S2-C).

Each 222 serves a room or zone and requires at least one user input device. A 222 can receive control input from the following:

- One or two 221 Wall Panels
- One or two 213 sensor/display
- Up to six 212 sensors or 220 keypads.

The basic restrictions are 6 inputs and two displays, so you could for example use the following combinations:

- 221 + 213
- 221 + 213 + 212
- two 221s + four 212s
- 221 + 213 + two 220s + two 212s

I.4 Power requirement

Power supply to a 222 is via the Command Cable and is as follows:

- +10V at 200mA
- ±18V at 10mA

NOTE to this you have to add the total consumption of input devices as follows:

- Each 221, +10V at 300mA
- Each 220, +10V at 5mA
- Each 213, +10V at 300mA
- Each 212, +10V at 5mA

NOTE to this you have to add the consumption of a module. For 211 or 216 this is ±18V at 20mA.

1.5 Connecting to 222

See page I-11 for a schematic diagram of the 222. Connections to the 222 are made either by demountable phono connections or by more permanent screw connection for cables in barrier-strips.

1.5.1 Audio connections

Audio inputs to the 222 are as follows:

- **System 1** and **System 2** by cable. Normally this will be via the **Audio Cable**. For both systems there is the choice of connecting with phono plugs or barrier-strip connectors.
- **Local L & R** phono and barrier-strip connectors both provided.

Audio output can be connected by:

- Barrier-strip or phono plugs.

1.5.2 Audio grounding connections

222 anticipates an output device (power amplifier or active loudspeaker) with a balanced or semi-balanced input. All *Meridian* active speakers fall into this category and should be adjustable using their balanced/unbalanced, grounded/ungrounded adjustments to give extremely low levels of background hum. The obvious setting for M20, M30 or M100 is:

- balanced + grounded. Try this first.

Connect the 222 as shown in the diagram on page I-6.

NOTE Unless this 222 is the start of a network, remove the ground link shown on the PCB.

NOTE If the output device is a 205 or OEM power amplifier with unbalanced input AND the 222 does not have a 211 or 216 then it will probably be necessary to add a wire link between **S1L-C** (Black) or **S1L-D** (Cu) and **OUT-COM**. (Or System 2). This link will reduce hum significantly but can introduce a system ground-loop with some power amplifiers. If that happens you will need to fit a 216 or 211.

1.5.3 Digital audio connections

A digital signal can be connected either:

- Between two phono connectors
- Between one of the phono connectors and a barrier-strip cable connection.

1.5.4 Video/RF connections

A video/RF signal has an on-board splitter for a 75R system and connects:

- Two antenna connectors (PAL)
- One carrier-strip cable connector.

NOTE the installer could bypass the splitter if it is not required.

1.5.5 Input device connection

The other side of the 222 has the following connections:

- Four-way header K132 for module connection only.
- Eight-way barrier-strip for connecting user input devices; 212, 213, 220, 221.

Control data from the input device (front-panel) is on the bus called **RC5/FP** and connects to the RC5 output of 212, 213, 220 or 221.

NOTE 221 and 213 always use +5V regulated power supply and this is available on pin 6 of the panel-input barrier strip. (Red)

NOTE 212 and 220 require a +10V supply (or internal modification to bypass the regulator). Connect their supply to +10. This is most convenient on pin 1 of the local-comms barrier-strip.

NOTE 212/A and 220/A require a +5V supply and should be connected as 221 or 213.

- Make the connections as shown in the diagrams on pages I-6, I-7 and I-10.

1.5.6 Local-comms connections

- Four-way barrier strip for connecting local-comms to a local controllable product – e.g. 201, 202, 204 or 207. Normally pin 1 (+10V) is not required.

Make the connections as shown in the diagrams on pages I-8 and I-9.

1.5.7 Command Cable connection

- Eight-way barrier-strip for connecting one or two **Command Cables** to the 222. (Two command cables would be used if this were a node on the network and cable ran on to another 222.)

Make the connections as shown in the diagram on page I-6.

If necessary refer to the schematic of the 222 shown on page I-11. Note the following equivalences:

- **Comms1** is **S1-C** is **S1I/O**
- **Comms2** is **S2-C** is **S2I/O**
- **Local-comms** is **L-C** is **LOCI/O**

1.6 Installation and service aids

- A template is provided to assist in locating cable cut-outs and mounting screws for the 222. A copy is included.
- There is a service EPROM which can be obtained from *Meridian*. The advantage of this EPROM is that it bypasses the non-volatile memory and allows you to check out the hardware of a 222 simply without having to either:

- reprogram the 222
- having a working network connected

A service manual is available for 222.

I.7 Setting up procedures

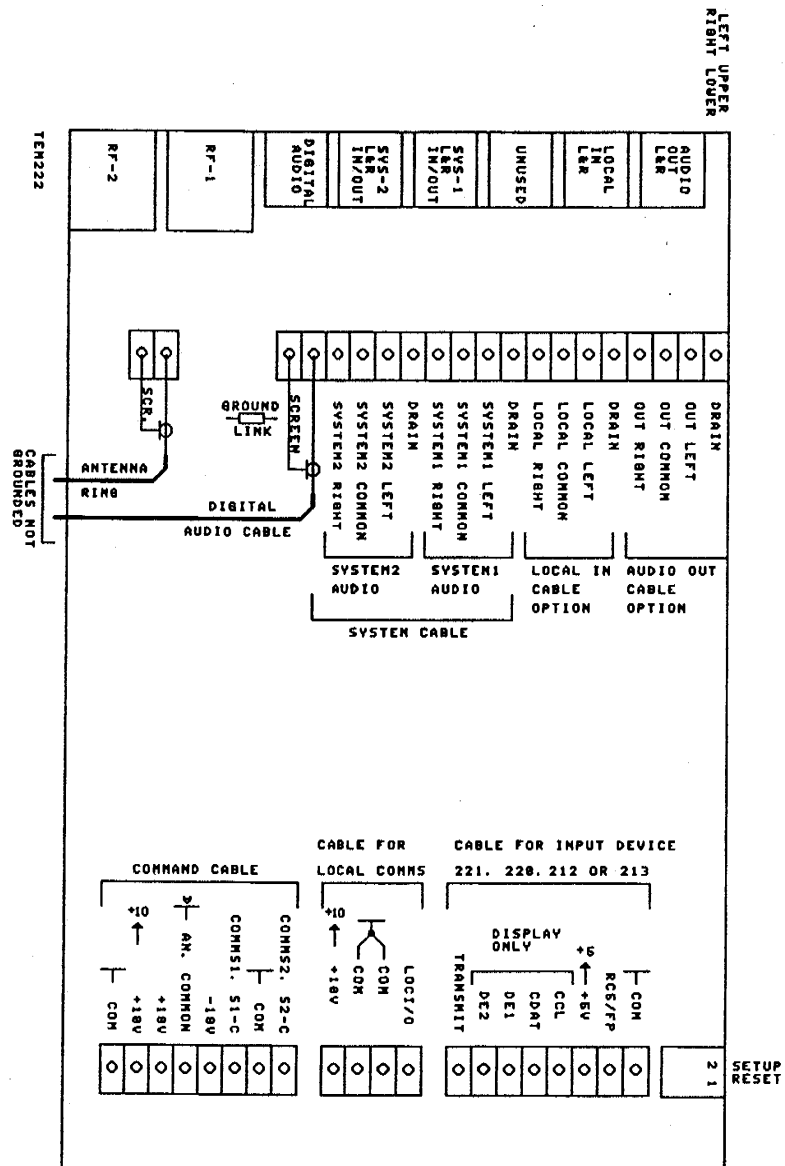
It is essential that the 222 be setup for it to work correctly, or to the requirements of an installation. Each 222 is supplied with a programming manual. A copy is included with this manual, but note that there may be updates to the manual and if in doubt check the manual supplied.

NOTE It is much easier to setup a 222 using a 221 wall panel. Even if the 222 is not going to be used with a 221 in the end you must temporarily connect one for setting-up purposes. (Alternatively you can programme the EEPROM for a 222 in another 222).

I.8 User Instructions

Full user instructions are supplied with the 222 and a copy is included.

Connections to a 222

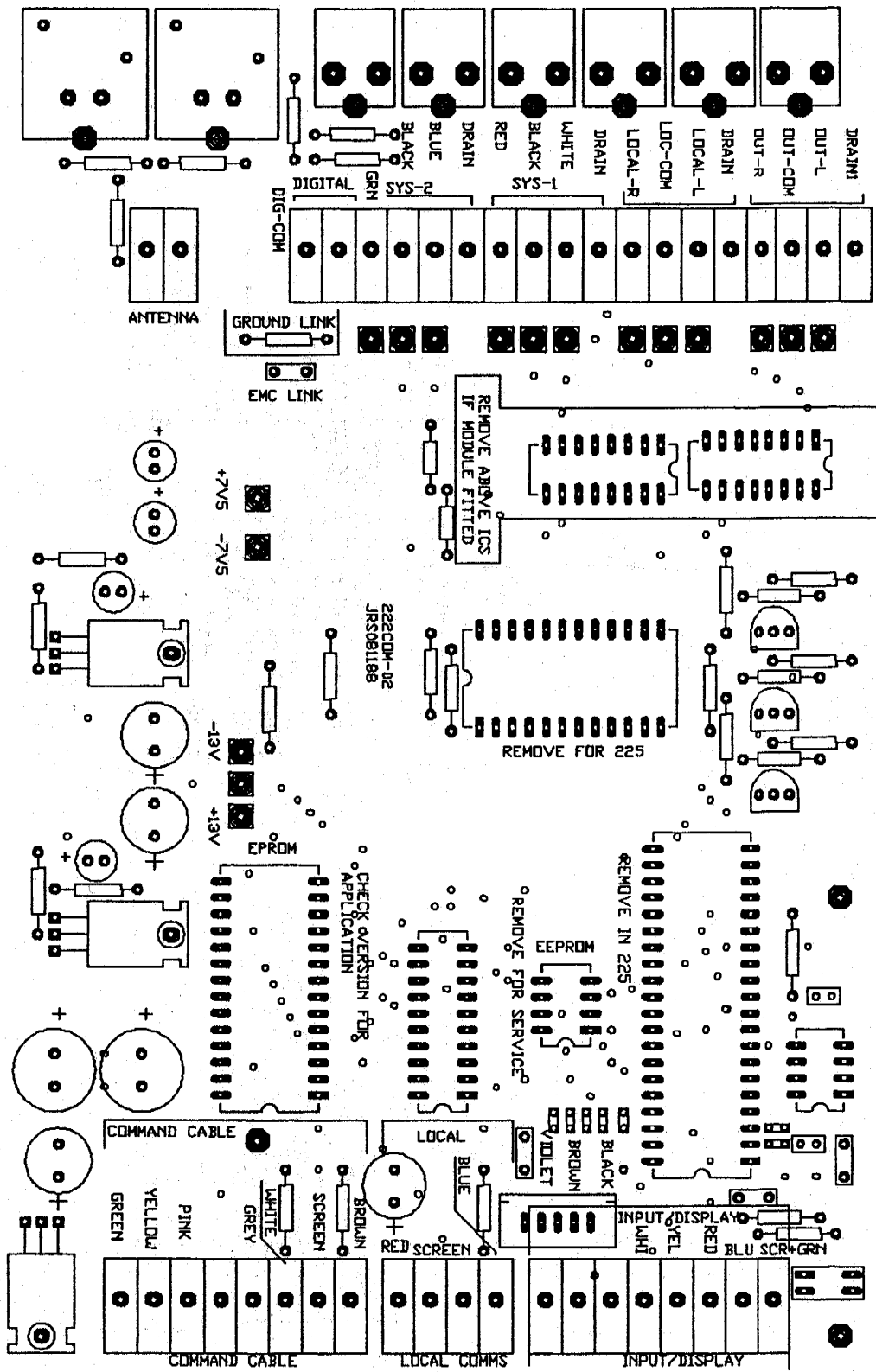


Overlay of 222 PCB

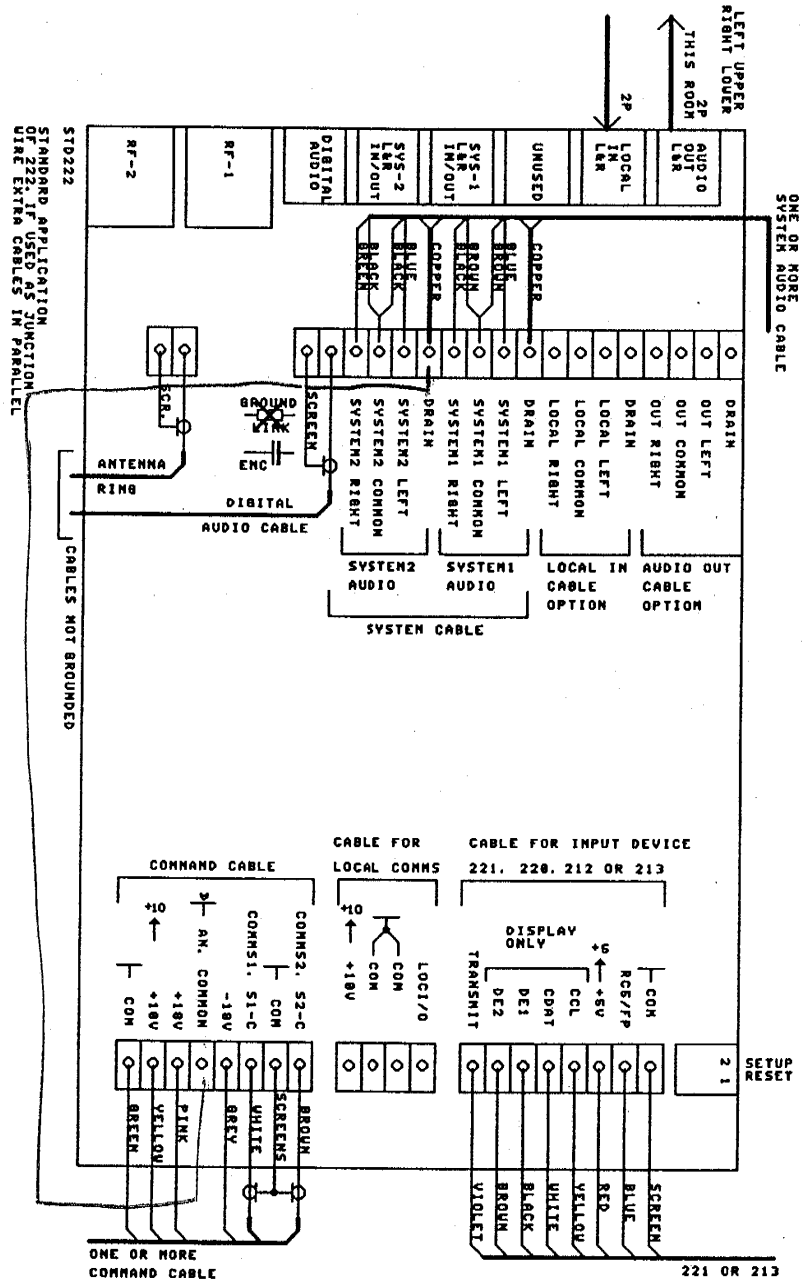
RF222CDM.PCB 008 22-DEC-1988

Holes : 499 OVERLAY PLOT

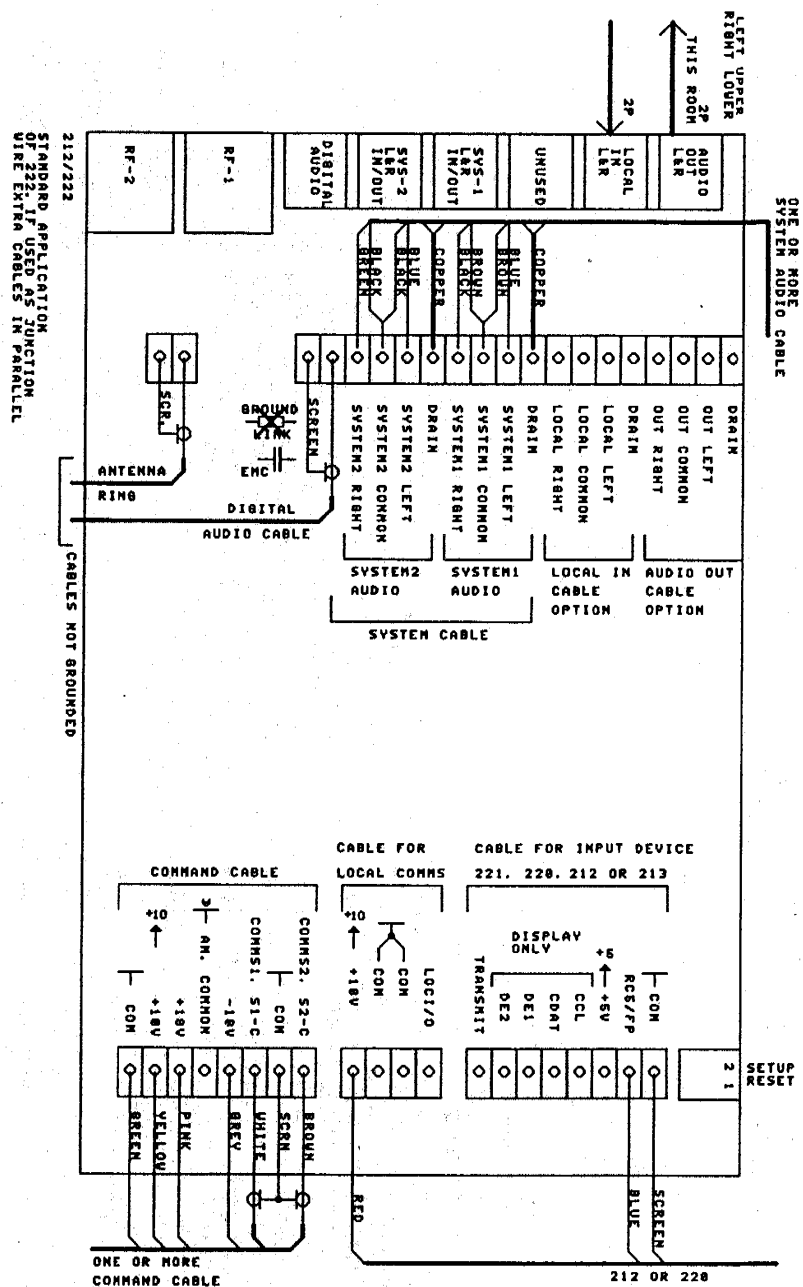
SIZE : 8.325 x 5.350 Inch

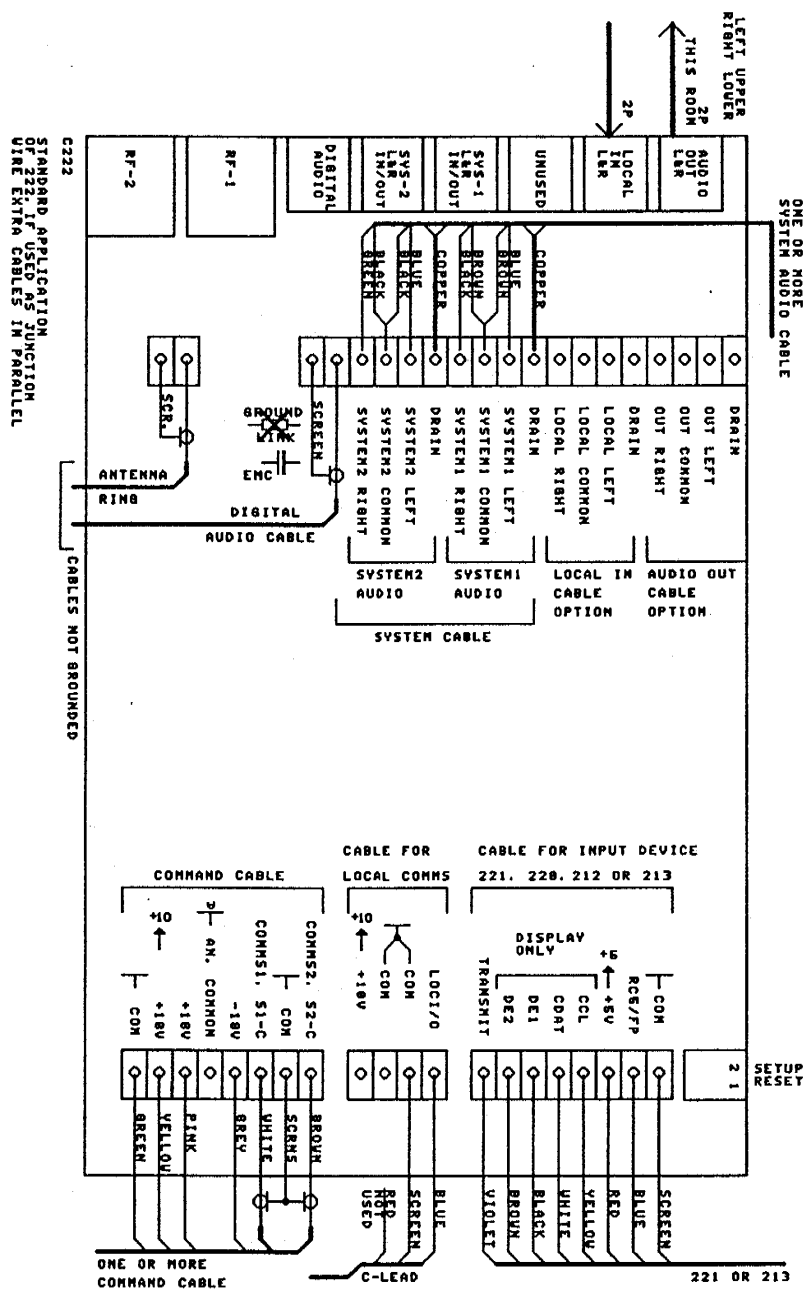


Standard application of 222

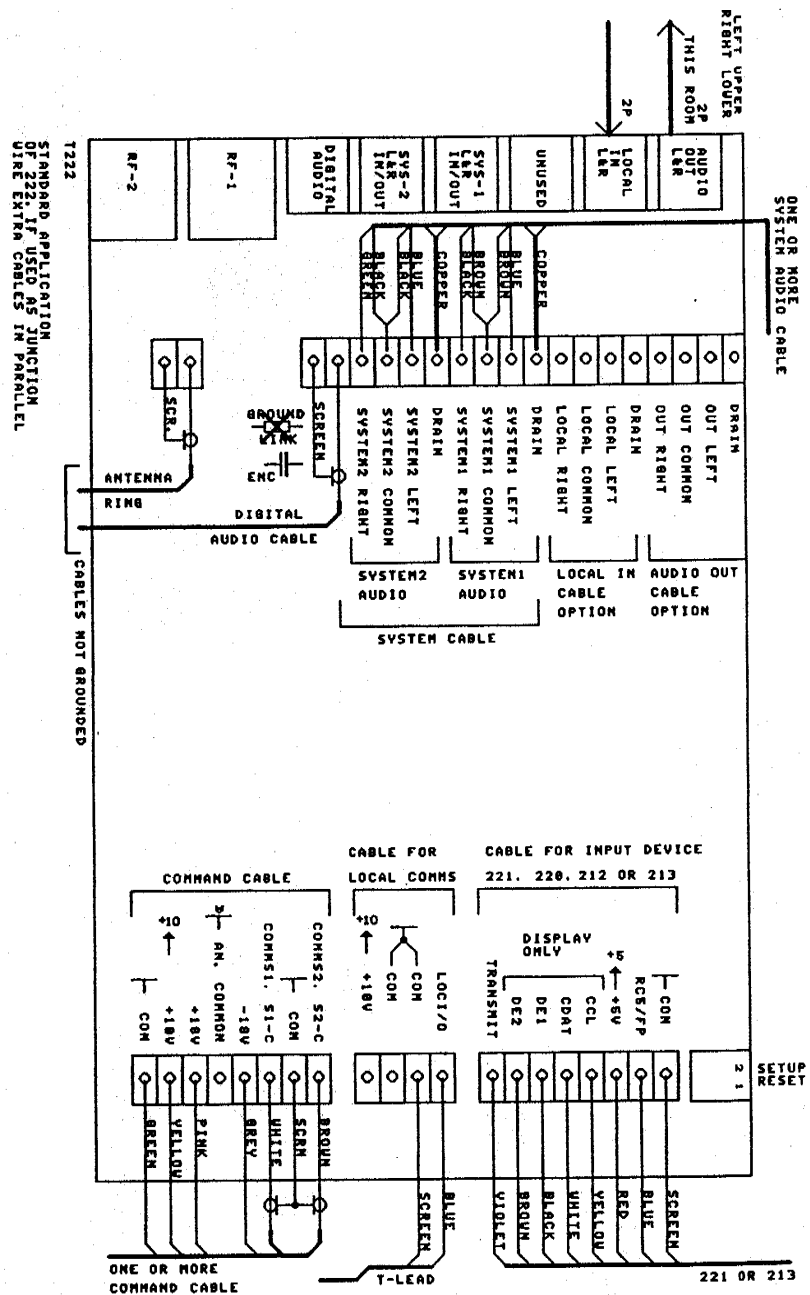


Connecting 212 or 220 to a 222

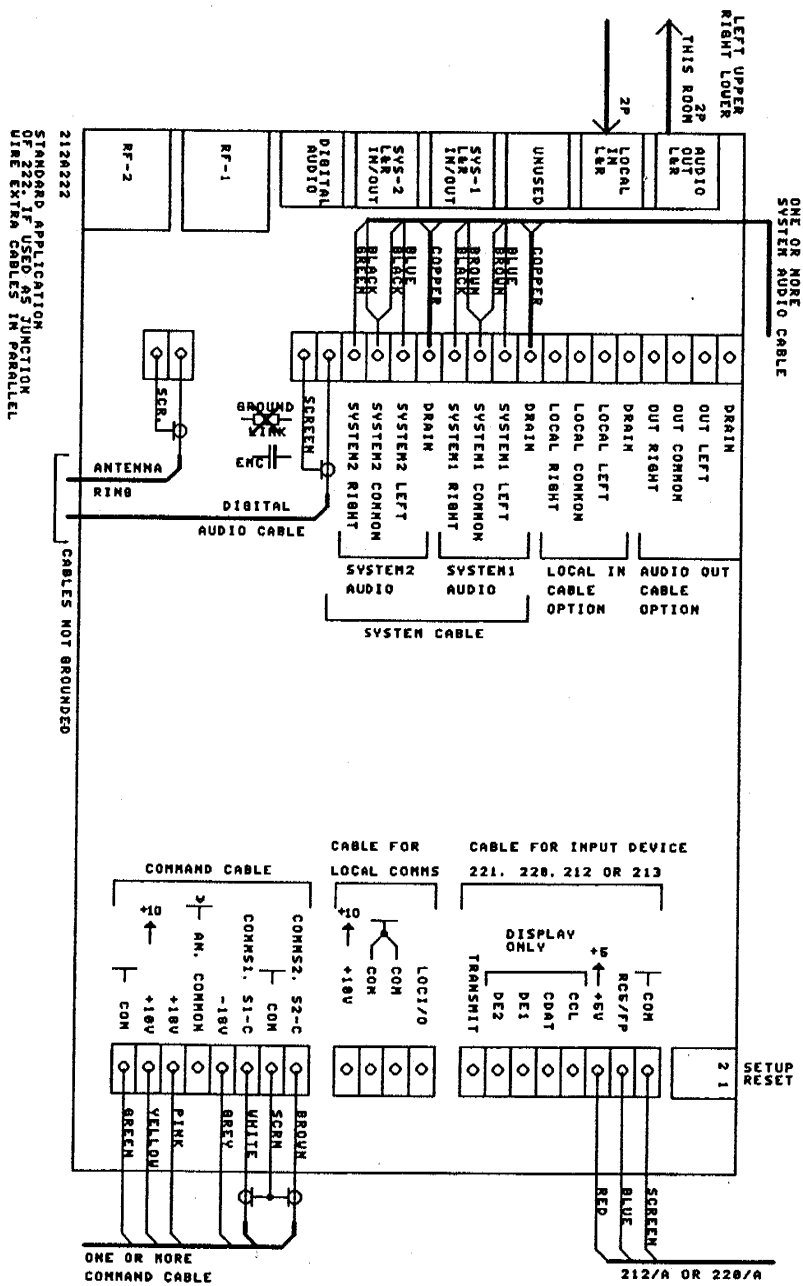


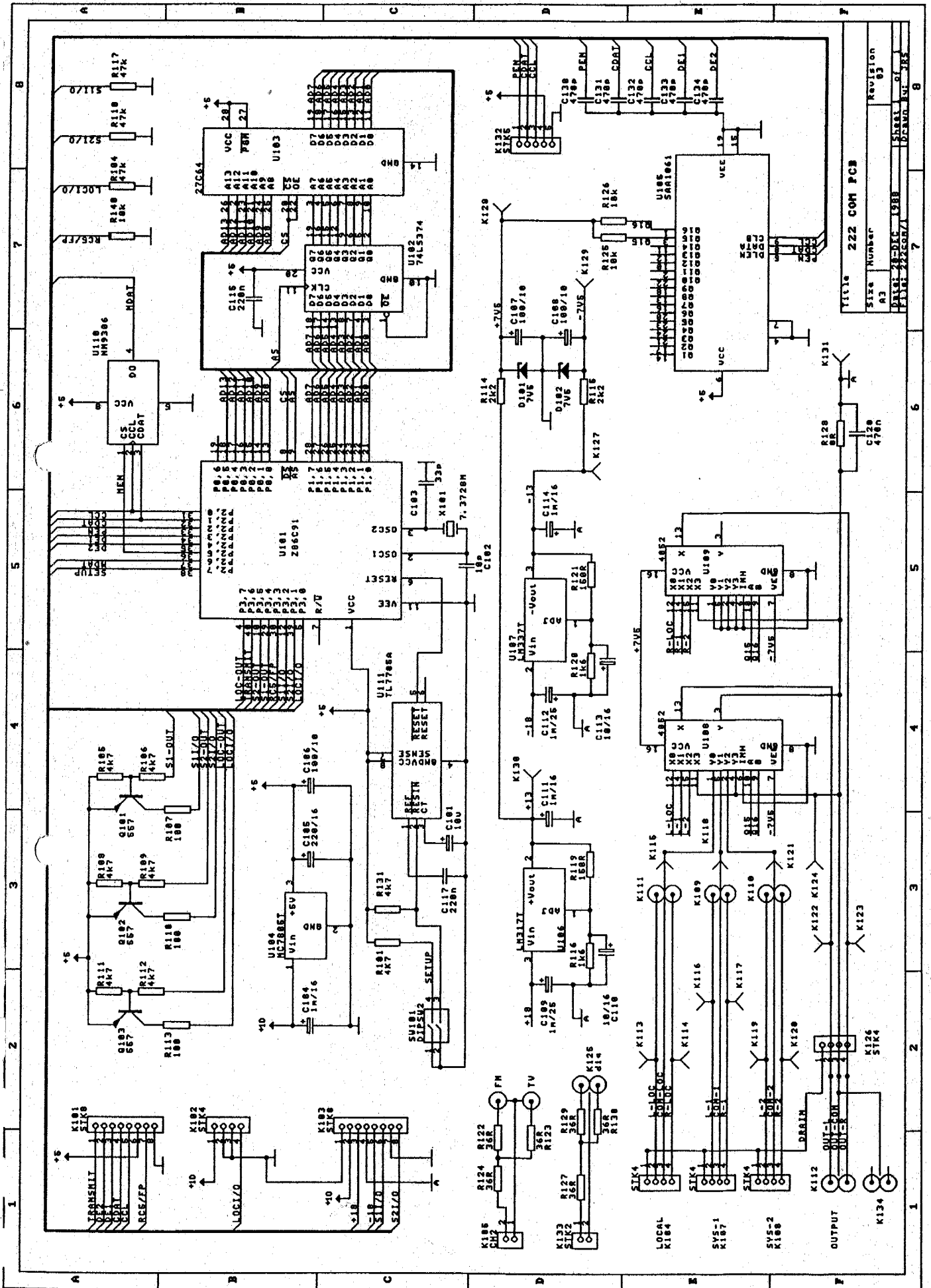


Connecting a T-lead (204) to a 222



Connecting 212/A or 220/A to a 222





Appendix J Using 223

J.1 Why use 223?

223 is a power supply and a junction box. At least one will be necessary in nearly every *Meridian* Multiroom installation.

A 223 is NOT required in the following systems:

- Simple systems (See section 5 of this manual for definitions).
- Distributed products only on the network.
- Naive installation using only one additional input device such as 212/A or 220/A powered directly from a 202 or 207.

Normally a 223 is the start of a network and the system audio and command signals are connected to it by plug-in cables from the 202 or 207 controller. Cables then convey the signals to other rooms or zones.

In larger networks, such as those using more than five or six display devices (221 or 213), a second or even more 223 will be needed to provide the power. Read section 8 of this manual carefully to understand the procedures and limits. Its features include:

- 223 is constructed in an elegant metal case which is intended primarily for wall mounting. It can be placed at any convenient location for the room or zone it serves.
- If desired the unit may be painted or finished in any suitable finish to match decor.
- Handles digital audio signals
- Handles video/RF signals
- Two audio inputs, normally **System 1** and **System 2**.
- Unswitched audio outputs for both inputs.
- Extensive cable management.

J.2 Options

The 223 is a very versatile component in the *Meridian* Multiroom system. According to how it is wired it can be used in the following ways:

- Power supply, junction box and source connection at the start of a network.
- Destination junction box for a zone combined with additional power and signal boosting to extend the network.
- Outlet or input for video/RF cable.
- Source or destination for digital audio signal.
- Connection for 212 or 220 in naive system.

Each 223 can be used to supply power to a number of multiroom components, the limits and procedures are described in section 8 and in this appendix.

223 has an optional buffer module 214 which does the following:

- Buffers and isolates the audio output of the system controller. This helps drive long audio cables, >20m. See section 13 of this manual.
- Improves the sound of the main system. By buffering the network from the main controller, the network load cannot deteriorate the sound of the main system.

- Buffers and isolates sections of the **Command Cable**.

- When used in an auxiliary 223 the 214 buffer allows the network to be extended beyond 40m.

NOTE When a 214 module is fitted 12 links have to be cut away on the PCB. These are designated on the PCB.

J.3 Restrictions

NEVER use the 223 outside its specifications. **NEVER** over-load a 223. If more than one 223 is required they must separately power sections of the network and each section must be within the limits.

NEVER connect the DC outputs of two or more 223s in parallel, this is NOT how you should extend the output. It is dangerous!

J.3.1 DC power

Many of the Multiroom components receive their power in low-voltage DC form along a connecting cable.

These voltages and powers have been selected to lie outside the regulations of:

- Low-Voltage Directive of IEC 222
- CSA 22
- Known USA building codes.

Power is normally supplied by one or more 223 power-supply junction boxes.

A 223 provides two raw supplies which are:

- +10V nominal for processor and digital circuits.
- ±18V nominal for audio and control circuits.

Regulation of the supplies is performed locally in other products, or in plug-in modules in the 223.

When designing a system you must add up the power consumption of the units connected.

When deciding how many 223's to fit you add up the +10V and ±18V consumption separately and ensure that both fit within the limits specified for 223.

NOTE: It is not really beneficial to operate the 223 close to its rating since this will not result in the best sound quality at all parts of the installation. We would recommend that where an installation reached 60–70% loading for a 223 that you consider adding a second 223 in a strategic position. Usually this can be achieved with little extra cost by using subsequent 223s as room junction boxes.

A single 223 is designed to supply power to *Meridian* Multiroom components only. You **MUST** calculate the total consumption for each of the outputs.

- Refer to the specification of each Multiroom component in the appropriate appendix.
- Add up the loads for the installation connected to each 223.
- Compare the result to the rating of the 223.
- If the load is between 60% and 70% of the 223 rating consider adding another 223 somewhere strategic in the installation. See section 13 of this manual.
- Remember to plan **Command Cables** so that any one cable never carries more than 50% of the capacity load of a 223. (If possible star **Command Cables** from a 223 if a high load is calculated).

The maximum rating for a 223 is:

- +10V at 2.5A
- $\pm 18V$ at 250mA

J.4 Power requirement

According to the local supply 223 uses AC power between 100V and 250V rms. The product is rated for 50–60Hz and at 30VA. The correct fuse ratings are:

- 250mA slo-blo for 220–250V
- 500mA slo-blo for 100–120V

Refer to the 223 Service manual for details of voltage selection.

J.4.1 Installation safety

WARNING: The 223 is an appliance and **MUST** under all circumstances be powered from a conventional appliance switched fused power outlet using the AC cord supplied.

NEVER NEVER must the 223 be attached directly to the permanent AC power wiring of the house.

WARNING: Under all circumstances the chassis of the 223 must be returned to a good reliable ground connection. As supplied the 223 expects this to be done via the power cord.

J.5 Connecting to 223

Connections to the 223 are made either by demountable DIN and phono connections or by more permanent screw connection for cables in barrier-strips.

AC power is connected via an IEC line socket, there is a power switch adjacent to the inlet. A fuse can also be accessed from the outside, see previous section.

J.5.1 Audio connections

Audio inputs to the 223 are as follows:

- **System 1** and **System 2** by cable to a barrier strip or by phono plug. If this 223 is the start of a network then normally the phono connectors will be used.

Audio output can be connected by:

- Cable barrier-strip or phono plugs to either **System 1** or **System 2**.

NOTE the transformer side of the 223 PCB has barrier-strip connectors which duplicate those on the other side.

- With no module fitted these connectors can be used identically and give more space for connecting cables.
- When a 214 module is fitted this becomes the output side of the 223 and the down-stream cables are connected here. See the diagram on page J-6.

J.5.2 Audio grounding connections

If the 223 is at the start of a network then the following grounds are usually commoned in the controller (201, 202 or 207):

- **System 1** audio common, (S1L-C, S1R-C, S1-D)
- **System 2** audio common, (S2L-C, S2R-C, S2-D)
- **COM**, that is the reference ground for the command signals.

In this situation the 223 also connects **COM** to the common of the $\pm 18V$ supply which is referred to as *Analogue Common*. This connection is made by the ground link designated on the top of the PCB.

- Normally the installer will have to connect a link between S1-D or S2-D and the audio input reference ground, or *Analogue Common*.
- In some situations *Analogue Common* might be fed forward using some of the the drain wires of the audio cable.

Connect the 223 as shown in the diagram on page J-6.

NOTE If the 223 is not the start of a network, remove the ground link shown on the PCB and connect *Analogue Common* to the audio drain connections as shown in the diagram on page J-10.

If at all possible leave in place the chassis earth connection that connects **COM** to utility (mains) ground. In some circumstances this may be difficult to achieve without introducing a ground loop. The disadvantage of returning the network to safety ground through a controller product is that the controller can be disconnected, leaving the network exposed to ground-leakage faults in any component connected to it.

NOTE This is the correct procedure:

- Leave the earth safety link in place.
- Leave the controller (e.g. 202) connected also to the utility ground by maintaining the 3-wire AC cord.
- Connect the controller and 223 to adjacent outlets on the same ring and phase.
- If a hum-loop results try dissociating it with a 214 module in the 223.
- Experiment with connecting the audio drain system to audio in grounds, COM or chassis.

J.5.3 Digital audio connections

A digital signal can be connected either:

- Between two phono connectors
- Between one of the phono connectors and a barrier-strip cable connection.

J.5.4 Video/RF connections

A video/RF signal connects between:

- An antenna connectors (PAL) and a barrier-strip cable connector.

J.5.5 Command Cable connection

- Two Eight-way barrier-strips are provided for connecting one or more **Command Cables** to the 223.

Make the connections as shown in the diagram on page J-6.

If necessary refer to the schematic of the 223 shown on page J-11. Note the following equivalences:

- Comms1 is S1-C is S1I/O is RC51
- Comms2 is S2-C is S2I/O is RC52

NOTE If a 214 module is fitted then the connections on the transformer side of the 223 are the output or downstream connections.

J.5.6 Input device connection

An input device like 212 or 220 could be directly connected to the **Command Cable** connectors *IF* the installation is Naive i.e. not Smart or Distributed.

NOTE 212 and 220 require a +10V supply (or internal modification to bypass the regulator). Connect their supply to +10. This is most convenient on pin 2 of the **Command Cable** barrier strip.

NOTE 212/A and 220/A require a +5V supply and *cannot* be connected to a 223.

- Make the connections as shown in the diagram on page J-7.

J.6 Installation and service aids

- A template is provided to assist in locating cable cut-outs and mounting screws for the 223. A copy is included.

A service manual is available for 223.

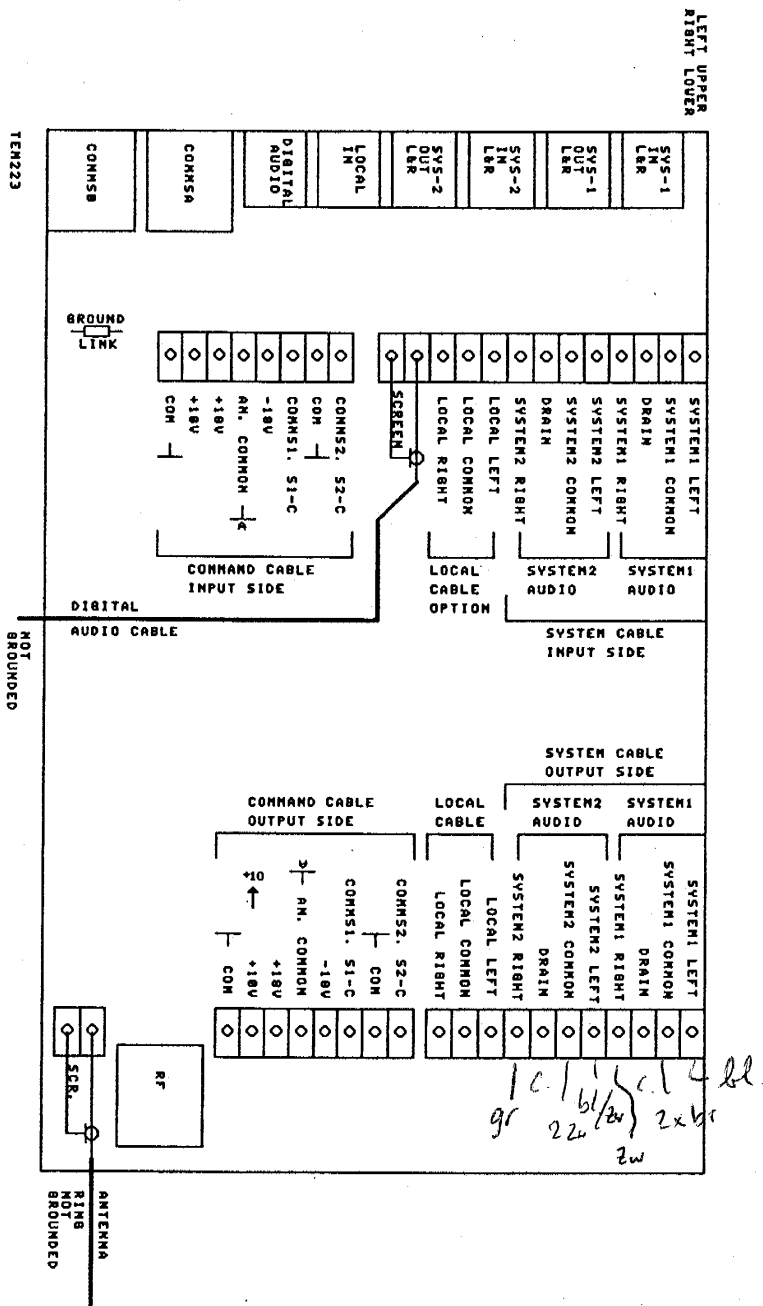
J.7 Setting up procedures

There are no setting-up procedures.

J.8 User Instructions

The user instructions are implied in this appendix and safety-related aspects must be conveyed to the owner.

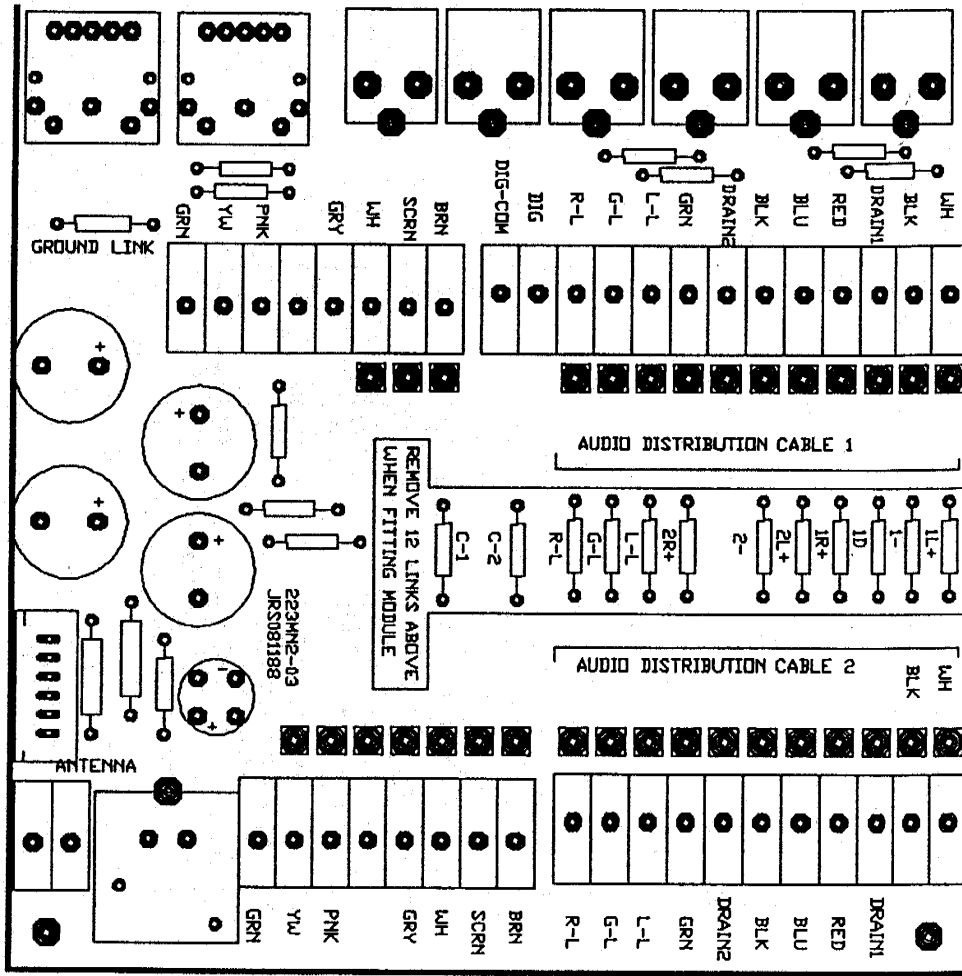
Connections to a 223



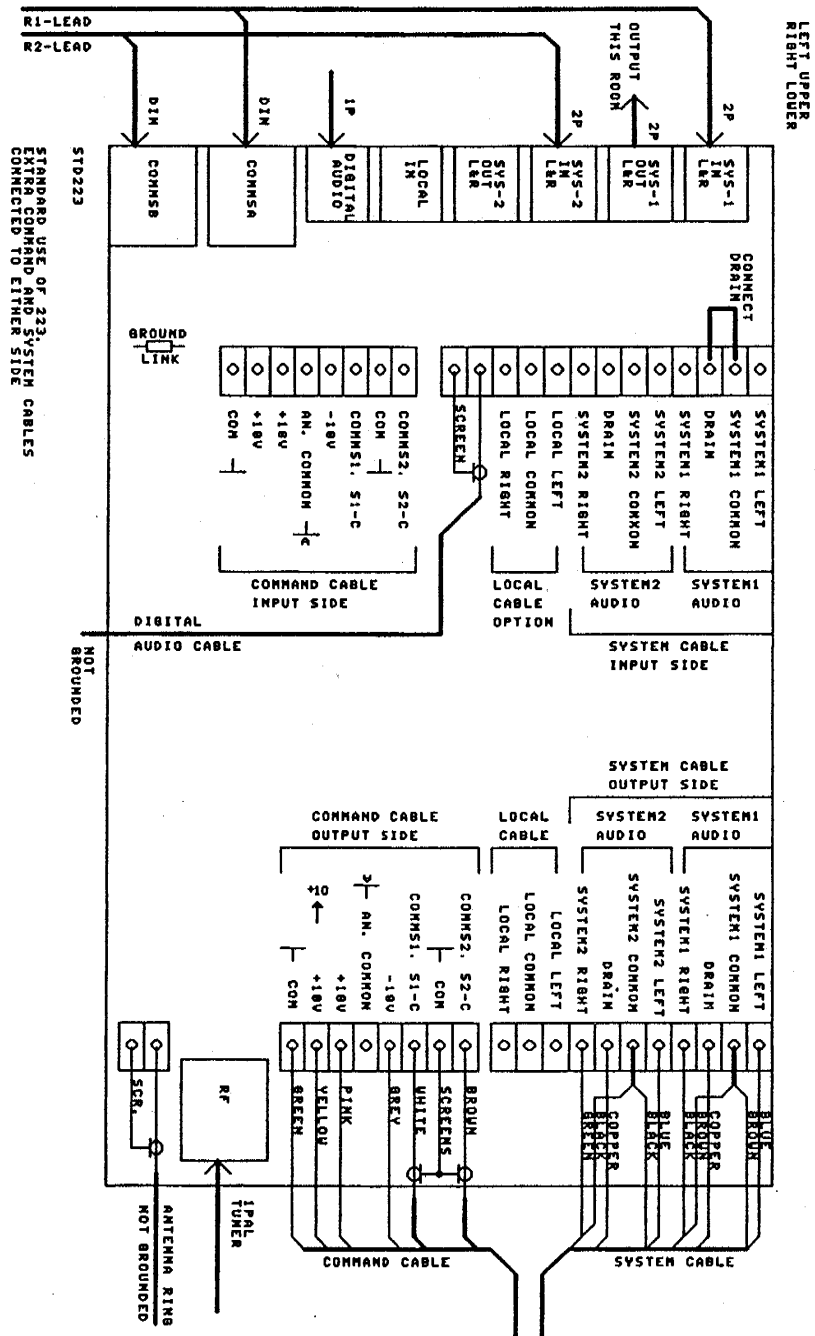
Overlay of 223 PCB

223MNE2.PCB 009 22-DEC-1988 Holes : 191 OVERLAY PLDT

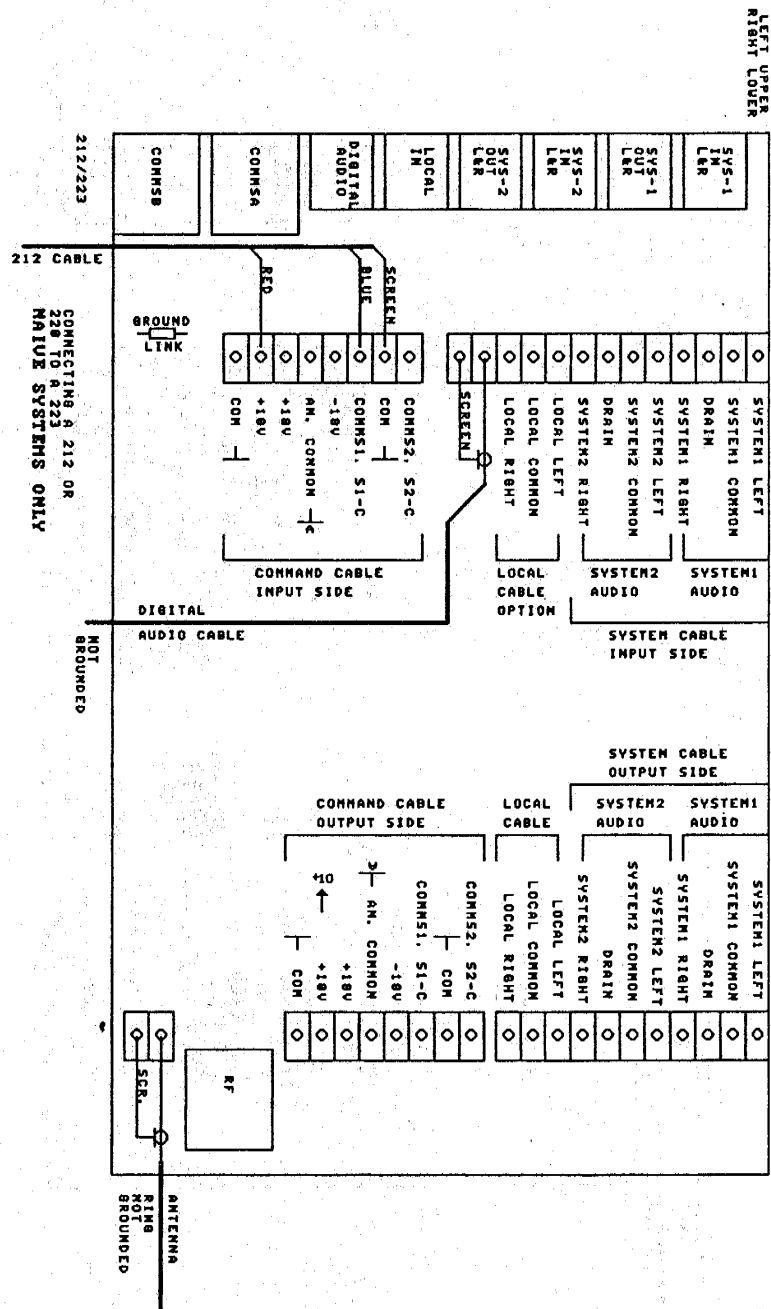
SIZE : 6,915 x 5,300 Inch



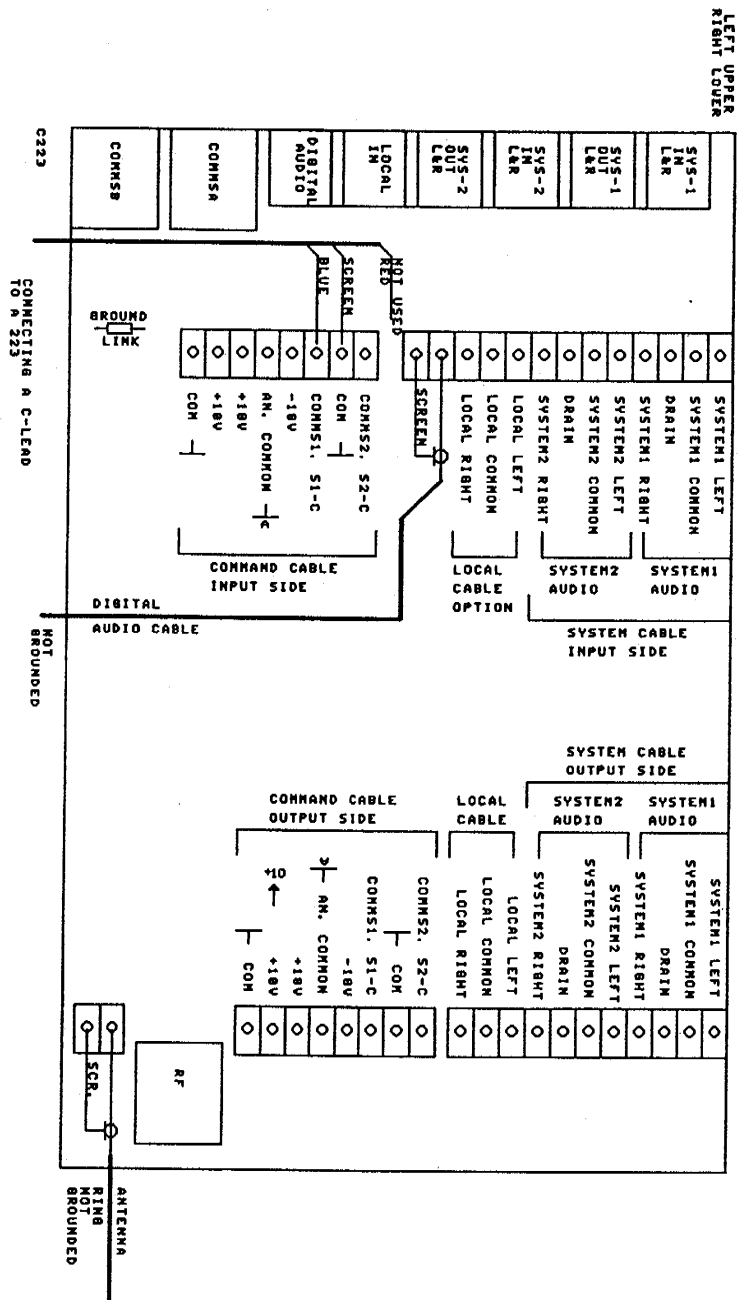
Standard application of 223



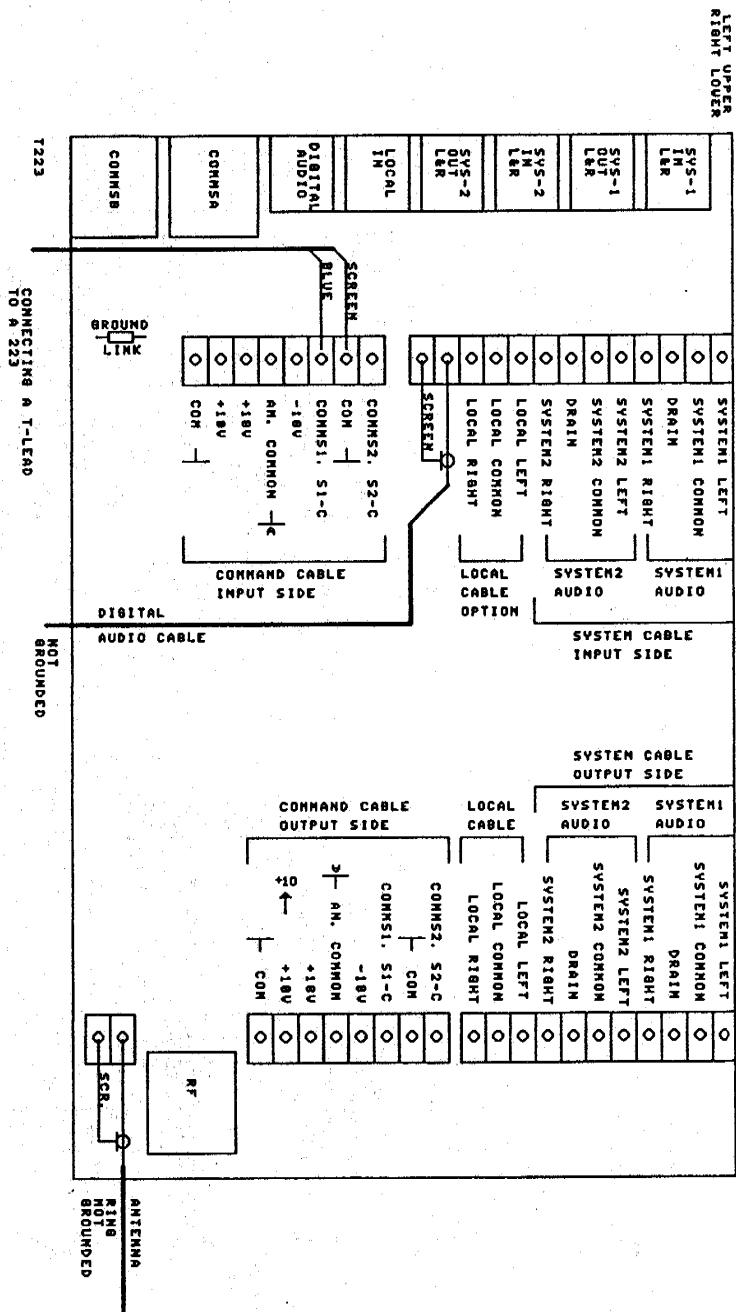
Connecting 212 or 220 to a 223, Naive system only



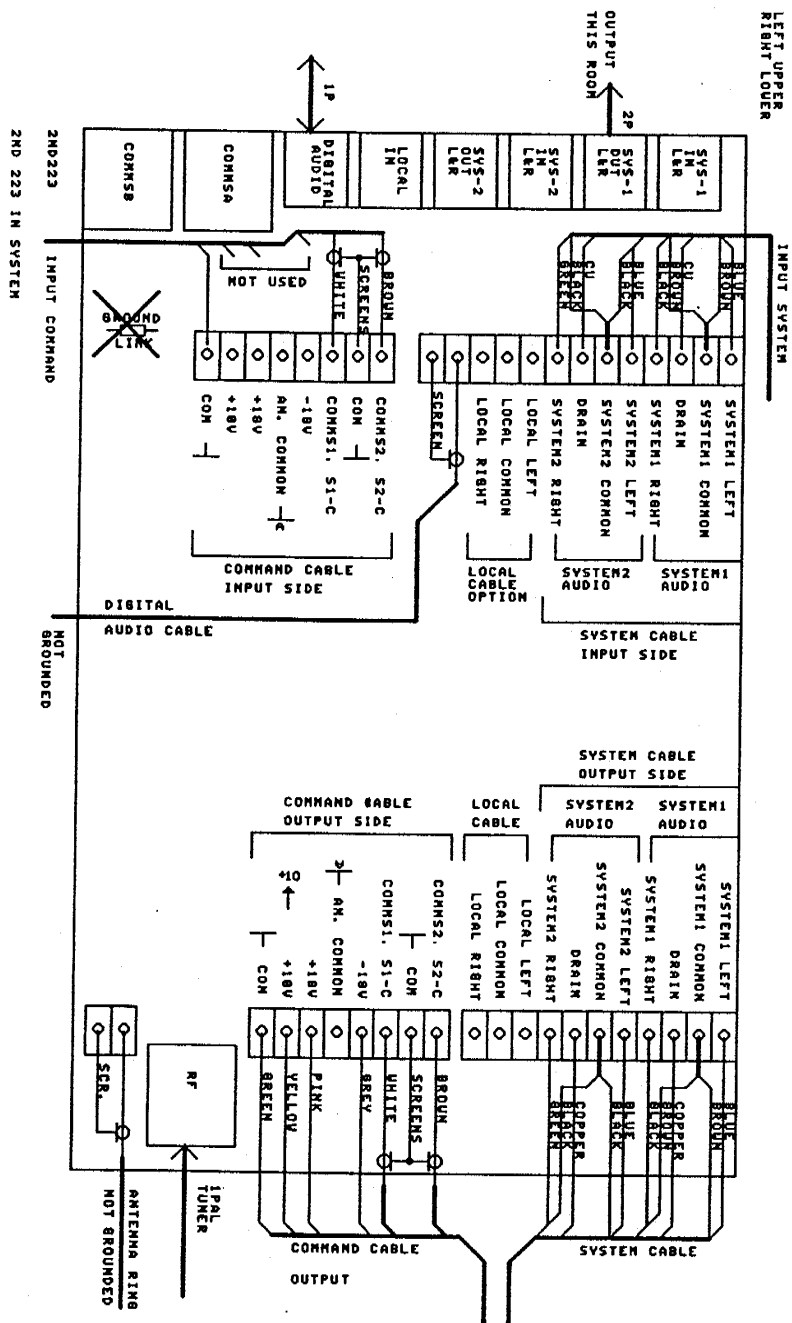
Connecting a C-lead (207) to a 223

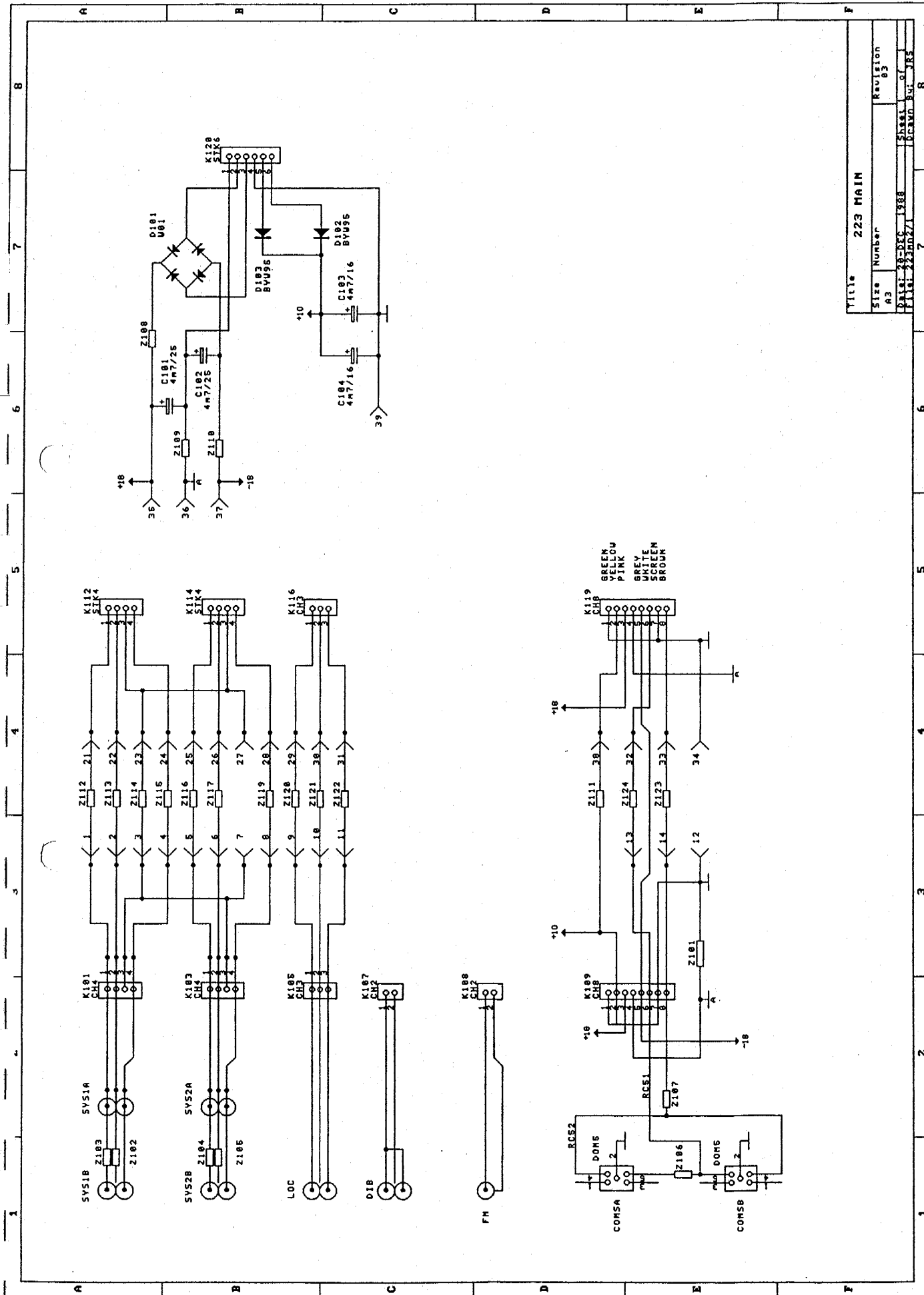


Connecting a T-lead (204) to a 223



Adding a second 223 to an installation.





Title		223 MAIN
Size	Number	Revision
A3		83
File	223-1388	Sheet 1 of 1
Drawn	223-1388	Drawn By
Checked	223-1388	Checked By
Approved	223-1388	Approved By

Appendix K Using 224

K.1 Why use 224?

224 is a passive junction box for use in cable management. It contains a printed-circuit that carries barrier strip connectors.

Two ten-way connectors are coupled and a third eight-way is available for helping a junction in a Command cable. An example is shown on page K-2.

If there is room use more than one 224 at any node since the cable can be handled much easier if fewer are fed into each box.

K.2 Restrictions

224 must never be used to make a connection of AC power. Only *Meridian* multiroom audio, DC and command signals may be connected.

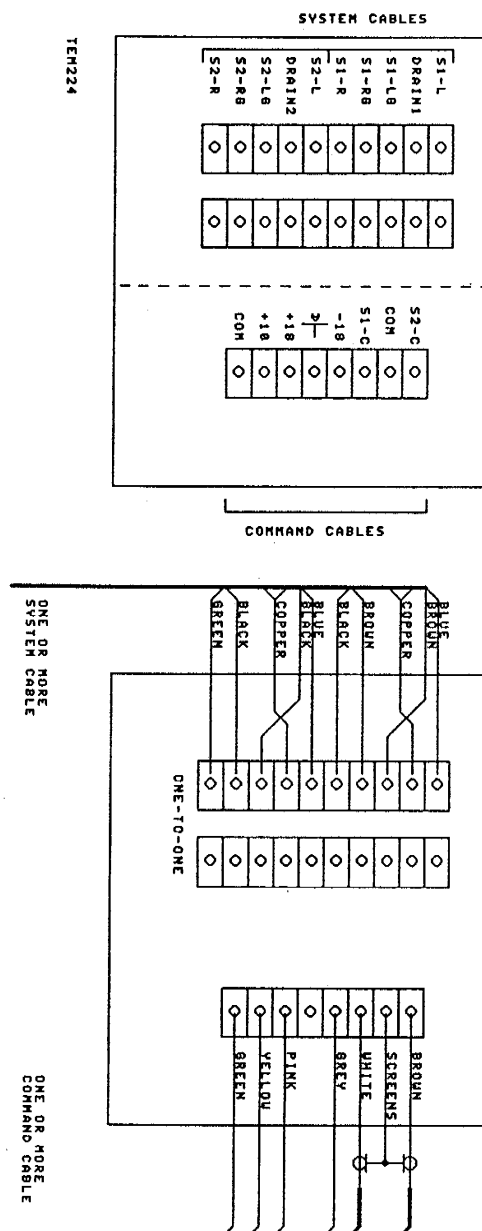
K.3 Power requirement

Zero.

K.4 General

The 224 is fitted with cable glands, which if carefully treated will provide a degree of moisture-proofing to the connections.

The 224 will withstand damp and condensation to a degree but you should try to mount it in a dry location since moisture on the comms connections could lead to malfunctioning of the network.



Appendix L Using 225

L.1 Why use 225?

225 is a comprehensive Junction Box which has been derived from the 222. It is used to connect the components associated with a zone in Naive and Smart systems. There are four main uses for a 225.

- Cable and power supply management in Naive or Smart systems. For example it could connect several 212s to a network.
- Local cable management on a Naive or Smart system and adding 216 unbalancing buffer module to assist interfacing a network to OEM power amplifiers.
- Cable and connection management on a distributed-product system.
- Local cable management on a comprehensive D600 installation, e.g. surround system.

Note the following:

- A 225 allows you to drive a local active speaker system or power amplifier from either of the distributed **System 1** or **System 2** signals. You have to choose when you connect the system up which it is to be.
- A 225 could also be used to connect a local source back to other parts of the network.

225 incorporates a comprehensive selection of phono, antenna and barrier-strip connections so that it also can be used for installation cable management. Its features are summarised below:

- 225 is constructed in an elegant metal case which is intended primarily for wall mounting. It can be placed at any convenient location for the room or zone it serves.
- If desired the unit may be painted or finished in any suitable finish to match decor.
- Power to operate the 225 (if required) is fed to it along the Command Cable.
- Can connect 212 or 220 input devices to a Naive system.
- Can connect 212, 220, input devices to a local 222.
- Handles digital audio signals
- Handles video/RF signals
- three audio inputs, normally **System 1**, **System 2** and **Local**.
- Fixed audio output with no mute.
- Optional local buffer module.
- Extensive cable management.
- Low-voltage operation and power consumption makes it inherently safe and lie outside safety and code controls.

L.2 Options

The 225 is a versatile component in the *Meridian* Multiroom system. According to how it is wired it can be used in the following ways:

- Destination junction box for Naive or Smart systems.

- Source connection for the network. (223 does not have to be the start of the network).
- Destination for one system, e.g. **System 1** and source for the network of the other system, e.g. **System 2**.
- Outlet and splitter for video/RF cable. (Source or destination).
- Source or destination for digital audio signal.

225 can convey the signals of either 212 or 220 to a Naive system.

An 216 optional plug-in module can be used with the 225.

- 216 is a balanced—unbalanced converter for the lowest background noise when using power amplifiers with unbalanced inputs. (Not strictly necessary with any *Meridian* active speakers, but useful in installations with adverse cable pick-up.

225 has an optional ground-link which is normally:

- In place if the 225 is the start of a network
- Removed if the 225 is in its normal mode of destination.

NOTE an EMC link is provided and should not normally be removed.

L.3 Power requirement

Power supply to a 225 is via the **Command Cable** and is as follows:

- +10V at 10mA
- ±18V at 10mA

NOTE to this you have to add the total consumption of input devices as follows:

- Each 220, +10V at 5mA
- Each 212, +10V at 5mA

NOTE to this you have to add the consumption of a module. For 216 this is ±18V at 20mA.

L.4 Connecting to 225

Connections to the 225 are made either by demountable phono connections or by more permanent screw connection for cables in barrier-strips.

L.4.1 Audio connections

Audio inputs to the 225 are as follows:

- **System 1** and **System 2** by cable. Normally this will be via the **Audio Cable**. For both systems there is the choice of connecting with phono plugs or barrier-strip connectors.
- **Local L & R** phono and barrier-strip connectors both provided.

NOTE The audio signal could be connected
Audio output can be connected by:

- Barrier-strip or phono plugs to either **System 1**, **System 2** or **Local**.

L.4.2 Audio grounding connections

225 anticipates an output device (power amplifier or active loudspeaker) with a balanced or semi-balanced input. All *Meridian* active speakers fall into this category and should be adjustable using their balanced/unbalanced, grounded/un-grounded adjustments to give extremely low levels of background hum. The obvious setting for M20, M30 or M100 is:

- balanced + grounded. Try this first.

Connect the 225 as shown in the diagram on page L-4.

NOTE Unless this 225 is the start of a network, remove the ground link shown on the PCB.

NOTE If the output device is a 205 or OEM power amplifier with unbalanced input AND the 225 does not have a 216 then it may be beneficial to connect together the drain and common wires of the system being used in this 225. This link may reduce hum significantly but can introduce a system ground-loop with some power amplifiers. If that happens you will need to fit a 216.

L.4.3 Digital audio connections

A digital signal can be connected either:

- Between two phono connectors
- Between one of the phono connectors and a barrier-strip cable connection.

L.4.4 Video/RF connections

A video/RF signal has an on-board splitter for a 75R system and connects:

- Two antenna connectors (PAL)
- One carrier-strip cable connector.

NOTE the installer could bypass the splitter if it is not required.

L.4.5 Input device connection

The other side of the 225 has the following connections:

- Four-way header K132 for module connection only.
- Eight-way barrier-strip for connecting user input devices; normally this connection is not used other than for management of cables.

For a Naive system only an input device such as 212 or 220 or a collection of these connect directly to the **Command Cable** connector, see below.

NOTE 212 and 220 require a +10V supply (or internal modification to bypass the regulator). Connect their supply to +10. This is most convenient on pin 1 of the local-comms barrier-strip.

NOTE 212/A and 220/A require a +5V supply and should be connected as 221 or 213.

L.4.6 Local-comms connections

- Four-way barrier strip is not used.

L.4.7 Command Cable connection

Eight-way barrier-strip for connecting one or two **Command Cables** to the 225. (Two command cables would be used if this were a node on the network and cable ran on to another 225.

Make the connections as shown for the 222 in the diagram on page I-6.

If necessary refer to the schematic of the 222 shown on page I-11. Note the following equivalences:

- **Comms1** is S1-C is S1I/O
- **Comms2** is S2-C is S2I/O

NOTE input devices 212 and 220 can also be wired directly to these connectors in a Naive system but never in a Smart system.

L.5 Installation and service aids

- A template is provided to assist in locating cable cut-outs and mounting screws for the 225. A copy is included.

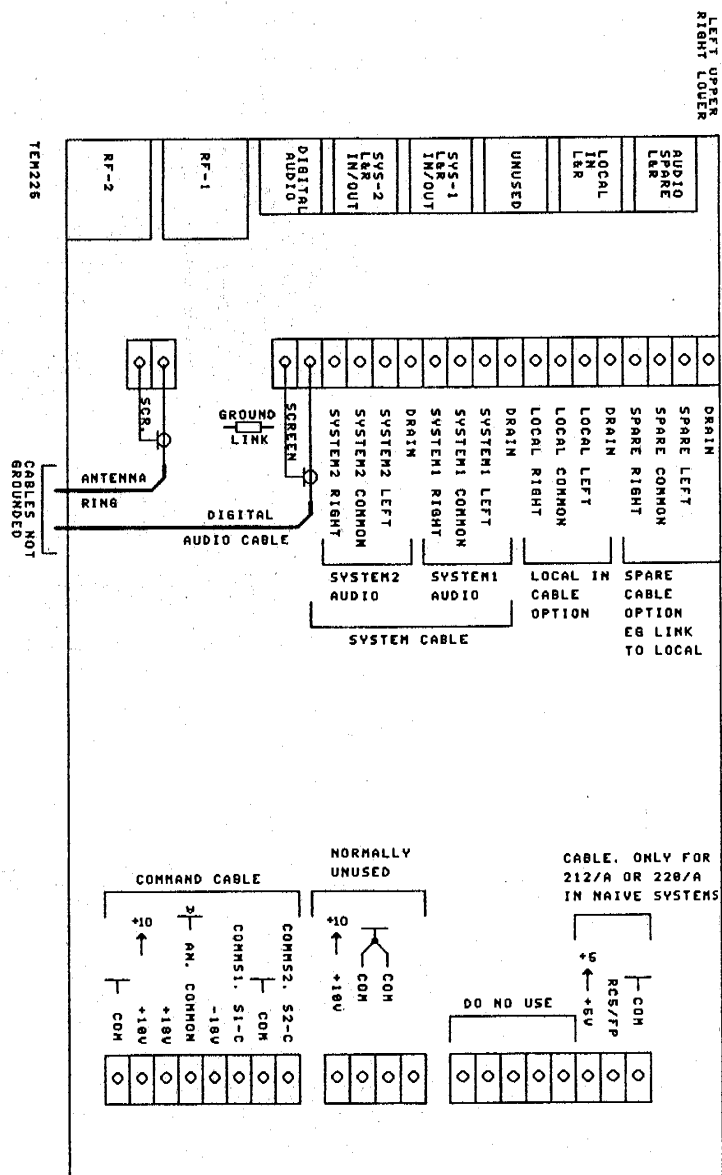
L.6 Setting up procedures

There are no setting-up procedures.

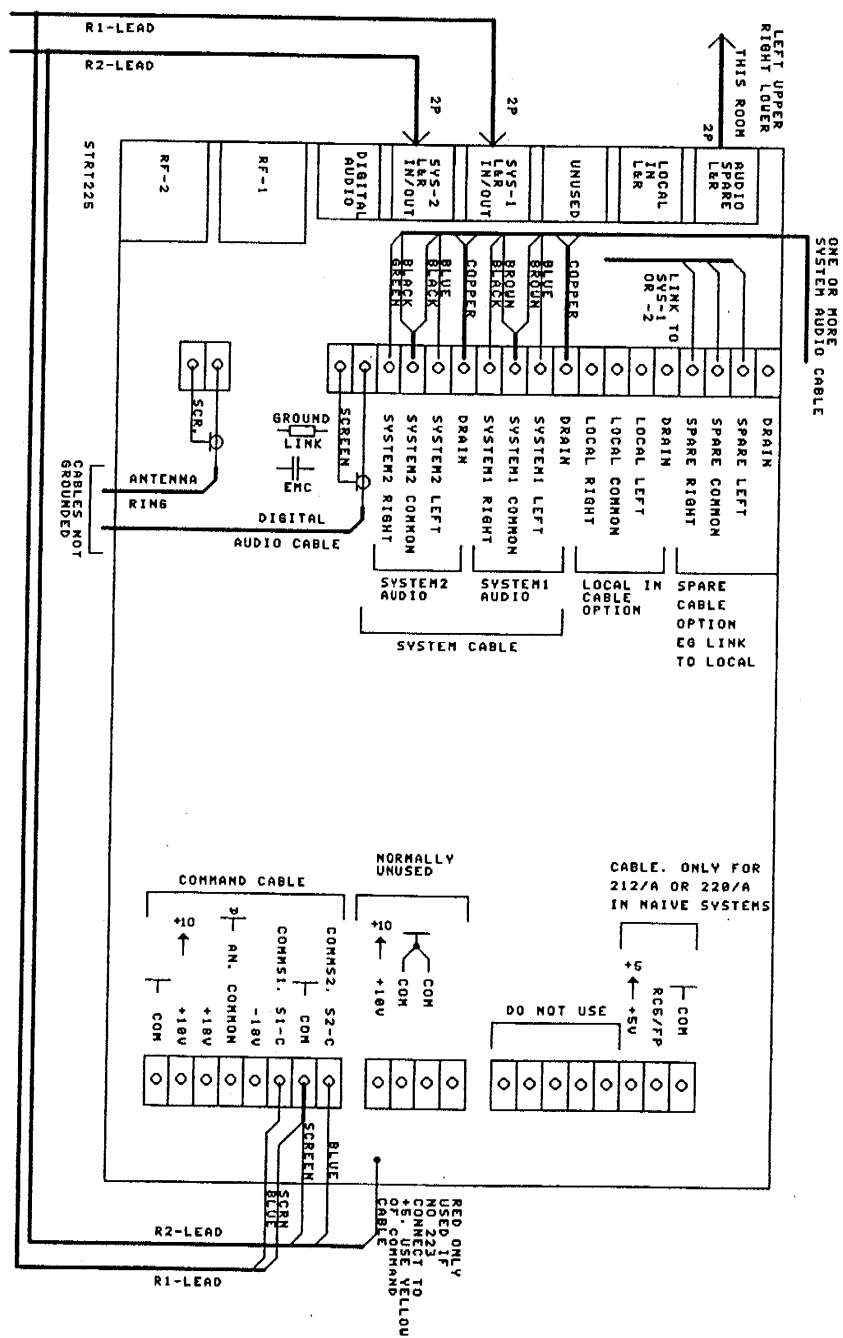
L.7 User instructions

There are no user instructions.

Connections to a 225



Standard application of 225



Appendix M Using D600

M.1 Why use D600?

D600 is the most advanced component available in the *Meridian* range. Its power in a Multiroom system exceeds even that of a 222. This active loudspeaker combines:

- Full analogue active loudspeaker system
- Digital processing and input
- Microprocessor control
- Multiroom controller and interface capability. With D600 you can listen to several local analogue and digital sources as well as select and control the two distributed signals **System 1** and **System 2**.
- Full display capability
- Programmable interface with a Multiroom system
- They provide the best possible sound quality in a small package.
- They have independent controllable *STANDBY*.
- D600 analogue inputs are balanced.

It is not possible in this document to explain the full features of D600, however copies of the user and installation manuals are included with this appendix.

M.2 Restrictions

NOTE D600 is a Multiroom controller and cannot be used connected to a 222 Control Box since both have the same function. Similarly you must not attempt to use a 221+222 combination in the same room as D600 unless the D600s are not connected to the network which may be the case in some surround installations.

M.3 Power requirement

According to the local supply the D600s use AC power between 100V and 250V rms. The correct fuse values are:

- 220–250V 1.25A slo-blo
- 100–120V 2.5A slo-blo

The power consumption has a maximum value of 200VA.

M.3.1 Installation safety

WARNING: These loudspeakers are appliances and **MUST** under all circumstances be powered from a conventional switched fused power outlet using the AC cord supplied or an approved alternative.

NEVER NEVER must they be attached directly to the permanent AC power wiring of the house.

WARNING: Under all circumstances the chassis of the speakers must be returned to a good reliable ground connection. As supplied this is done via the power cord.

M.4 Connecting to D600

Refer to the D600 Installation manual for more information. The following connections are available.

- **A1+** The first analogue input. This can be connected to the output of any analogue source e.g. tuner or the output of a preamplifier. You may use a *Meridian* preamplifier like 201 or 207.
- **A1-** An inverse phase connection for A1 to allow you to connect a semi-balanced or balanced input. It can also be used to provide an absolute phase reversal, useful in some analogue surround systems.
- **A2+** A second analogue input. See A1+ above.
- **A2-** A second analogue input. See A1- above.
- **D1** The first digital input using coaxial cable.
- **D2** The second digital input using coaxial cable.
- **Optical** The third digital input using a fibre-optic connector.
- **Dout** A digital output which has been selected by the D600 to be passed on to other D600s, this allows *Slaves* only to have one digital input connected.
- **Technical ground** A connection provided to the electronics to assist in system installation. This is not a safety ground.
- **Global** A DIN connector which is used to exchange information with other *Meridian* 200-Series components.
- **Local** A DIN connector which is used to send information on to D600 *Slaves*. This connector has a second connection to **Dout**.

The lower panel contains the power supply and should already be adjusted for the local supply voltage — check the labelling. The panel contains a 3-pin IEC power inlet plug with a power switch.

M.4.1 Connecting to a Multiroom system

Refer to the D600 Installation manual for details of connecting a D600 installation.

The following notes amplify some points that relate to connecting the *Master* D600 to a 225.

M.4.2 Digital connection

Use a high-quality screened cable such as the *Meridian* digital audio cable. Connect a phono plug at each end. Ensure that the double-screen of the *Meridian* cable is used.

M.4.3 Analogue audio connection

The D600 has a balanced input facility using two phono plugs, one for each phase. These can be connected using either:

- A single core screened coax for each of the + and - inputs.
- A composite cable using screened twisted pair which is bifurcated at the D600 to connect to two phono plugs.

NOTE in each case the outer of the phono plug is common and should connect to the screens.

At the 225 end connect the hot core (i.e. the one connected to the centre of the - phono plug) to the hot output in a junction box. (For example to S1-LA in a 224 or 225).

- Connect the other core to the cold output in a junction box. (For example to S1-LG in a 224 or 225).
- Connect the screen to the drain network in a junction box. (For example DRAIN1 in a 225).

M.5 Installation and service aids

Refer to the following *Meridian* publications:

- D600 User Manual
- D600 Installation Manual
- D600 Service Manual

M.6 Setting up procedures

There is a comprehensive setting up procedure to get the best out of a D600 connected to a Multi-room system. Refer to the D600 Installation Manual for instructions on programming.

Appendix N Using M1, M10, M2 or M3

N.1 Why use M1, M10, M2 or M3?

A customer may have *Meridian* first generation active speaker systems. In many ways these are well suited to be incorporated in a modern Multiroom system since they all have balanced input facility.

N.2 Restrictions

It may be necessary to devise a local switched power outlet if the customer wishes to switch them off; this generation of actives did not have class-AA or music-sensing. Nevertheless providing they are in good condition it is not necessary to switch them off unless the house is being left for a couple of days.

- M3 presents a fairly unfriendly load to the network if it is powered down. Where possible use a buffer module if M3s are to be used and switched off.

N.3 Power requirement

According to the local supply M1, M2, M3 or M10 use AC power between 100V and 250V rms. The products is rated for 50–60Hz. The correct fuse ratings are:

- 1.25A slo-blo for 220–250V
- 3.15A slo-blo for 100–120V

NOTE M10 has two fuses.

Refer to the relevant Service manual for details of voltage selection.

N.3.1 Installation safety

WARNING: These active loudspeakers are appliances and **MUST** under all circumstances be powered from a conventional switched fused power outlet using an approved AC cord.

NEVER NEVER must an active loudspeaker be attached directly to the permanent AC power wiring of the house.

WARNING: Under all circumstances the chassis of the loudspeakers must be returned to a good reliable ground connection. As supplied this is done via the power cord.

All these models incorporate over-temperature sensors and cut-outs.

N.4 Connecting to M1, M10, M2 or M3

M2, M3 and M10 have audio connection made through a 5-pin DIN plug. The pinning is shown on the back panel and the relevant connections are:

- input signal -, pin 1
- input +, pin 3
- input common, pin 2.

For normal connection use screened audio cable. Connect a phono-plug to the end of the lead going to a 222 or 225 and use pin 1 of the DIN for connection to the loudspeaker.

A better way is to use a screened twisted-pair cable for interconnection.

- Connect the pair to pins 1 and 3 and the screen to pin 2.
- Connect pin 1 core to the hot output in a junction box. (For example to *S1-LA* in a 224 or 225 or *OUT-L* in a 222).
- Connect pin 3 core to the cold output in a junction box. (For example to *S1-LG* in a 224 or 225 or *OUT-COM* in a 222).
- Connect the screen to the drain network in a junction box. (For example *DRAIN1* in a 222).

In the case of an M1 the audio input is connected by a 5-pin Cannon connector.

The pinning is shown on the top panel of the electronics and the relevant connections are:

- input signal -, pin 5
- input +, pin 3
- input common, pin 1.

Connection of an M1 is otherwise identical to the other active loudspeakers.

NOTE Connect the M1s separately, not using the daisy-chain arrangement as originally proposed.

NOTE Check that the M1 case is in fact adequately grounded, some versions were not built to current practise.

N.5 Installation and service aids

There are no installation or service aids.

N.6 Setting up procedures

There are no setting-up procedures other than ensuring that an M3 or M10 still has its programming plug connected. These are necessary to get the best sound. If in doubt:

- Connect the plug in an M3 for flat response.
- Use a 'green' or 'blue' plug in an M10.

These programming plugs are available from the *Meridian* service department.

N.7 User instructions

User instructions were supplied with the products. Copies may be bought from *Meridian*.

Appendix O Using M20, M30 or M100

O.1 Why use M20, M30 or M100?

The *Meridian* M20, M30 and M100 range of analogue active loudspeakers is ideally suited to *Meridian* Multiroom installations for the following reasons:

- They provide an excellent sound quality in a small package.
- They operate in non-switching class AA mode and have very low quiescent power dissipation, hence little energy is used in idle and they run nearly cold.
- They all feature music-sensing. This feature causes the speakers to go into *STANDBY* about six minutes after the end of a piece of music.
- All *Meridian* active loudspeakers have a balanced input facility.
- This range of speakers incorporate a **Network** socket which can be used to power a 212 sensor.

O.2 Power requirement

According to the local supply these products use AC power between 100V and 250V rms. The correct fuse values are:

- 220–250V 1.25A slo-blo
- 100–120V 2.5A slo-blo

NOTE M100 has two line fuses.

The power consumption has maximum values of:

- 135VA for M20 and M30
- 270VA for M100

O.2.1 Installation safety

WARNING: These loudspeakers are appliances and **MUST** under all circumstances be powered from a conventional switched fused power outlet using the AC cord supplied or an approved alternative.

NEVER NEVER must they be attached directly to the permanent AC power wiring of the house.

WARNING: Under all circumstances the chassis of the speakers must be returned to a good reliable ground connection. As supplied this is done via the power cord.

O.3 Connecting to M20, M30 or M100

O.3.1 Audio connection

M20, M30 and M100 have audio connection made through a phono plug which has switchable connections.

- For normal connection use a phono–phono screened audio interconnect.
- Connect one end to a 201, 202, 207, 222 or 225 and connect the other end to the loudspeaker.
- Select grounded + balanced condition on the switch bank of the active.

An alternative way is to use a screened twisted-pair cable for interconnection.

- Connect the pair to both sides of the phono plug that connects to the M20, M30 or M100.
- At the other end connect the hot core (i.e. the one connected to the centre of the phono plug) to the hot output in a junction box. (For example to *S1-LA* in a 224 or 225 or *OUT-L* in a 222).
- Connect the other core to the cold output in a junction box. (For example to *S1-LG* in a 224 or 225 or *OUT-COM* in a 222).
- Connect the screen to the drain network in a junction box. (For example *DRAIN1* in a 222).

O.3.2 Using the Network socket

The regulator inside a standard 212 (not 212/A) is capable of taking its power from the **Network** socket of one of these loudspeakers.

There are two **Network** sockets labelled 'Left' and 'Right'.

The connections on these socket are:

Pin	Right	Left
1	Data	Audio
2	+35V	+35V
3	-35V	-35V
4	Common	Common (0V)
5	nc	nc
6	Audio	Data

Count pins from the left looking into the back of the loudspeaker, if necessary check with a Multi-meter.

CAUTION Some early speakers in this range were manufactured using a socket with a different keyway. The keyway should be on the left side looking into the socket. Before connecting a 212 to an older M20, M30 or M100 check with a Multi-meter that the **Network** socket is in fact correctly keyed.

NOTE Connect to this socket using a plug supplied by *Meridian*.

To power a 212 from this socket connect the 212 cable as follows:

- **Screen** to common, pin 4
- **Red** to +35V, pin 2
- **Blue** to Data, pin 1

CONNECT TO THE RIGHT NETWORK SOCKET.

Another connector is then required to connect a single-core screened comms lead from the Left **Network** socket of the speaker back to the network. Connect this cable:

- **Core** to data, pin 6
- **Screen** to common, pin 4

CONNECT TO THE LEFT NETWORK SOCKET.

NOTE The two **Network** sockets are cross-linked internally.

WARNING Before connecting this cable to the installation ensure that you have not accidentally connected one of the high-voltage supplies to it. Significant damage could result from connecting $\pm 35\text{V}$ to the **Comms**.

0.4 Installation and service aids

There are no installation aids.

A service manual is available.

0.5 Setting up procedures

All these actives should be set up for the best sound using the switches on the back. If in doubt make the following settings:

- Switch 1 down, music sense on
- 2 and 4 down, natural B+Y response
- 3 and 5 up, natural B+Y response
- 6 up, not bookshelf mode
- 7 down, balanced input
- 8 up, electronics connected to AC ground.

0.6 User instructions

User instructions are supplied with the products. Copies may be bought from *Meridian*.

Appendix P Extending IR range of products

P.1 General

It is possible in certain circumstances to use a 212/A to extend the range of infrared reception of 200-Series products. The most obvious requirements are:

- To provide remote-control capability for a 201 or 207 that is housed in a closet or somewhere where it cannot 'see' the 209.
- To add range to a 201 or 207 in a difficult room.

P.2 Cautions

- This process of extending the infrared range cannot be done without connecting the 212/A to the inside of the 201 or 207. This process may invalidate aspects of the warranty of the host product.
- You cannot extend control by connecting to S1-C or S2-C, it does not have the same effect.
- You cannot add a sensor to a 204.
- If the installation includes 201 and 207 then connect the eye to the 201 and do not connect '201 sense' to the 207 or '207-sense' to the 201, (normally in the P-lead).
- If an installation includes 201 and 207 together then both must benefit from the extended range, or alternatively the 207 must be 'blinded' and the P-lead modified as above.

P.3 Procedure

- 212/A must be used since this is set for a 5V supply.
- Refer to the service manual for the product in question. 201 and 207 both have their infrared sensors connected to three-way plug-in headers on the computer PCB. Disconnect the sensor if necessary and add a new header connected to the ground (screen), +5V (Red) and RC5 (Blue) cores of the 212 cable.

P.4 'Blinding' products

In some cases it is necessary to disable the infrared sensor in a product to prevent conflict with other units in the room. Some examples are shown in Appendix W.

- Refer to the service manual for the product in question. 201 and 207 both have their infrared sensors connected to three-way plug-in headers on the computer PCB. Disconnect the sensor. It can be reconnected at any time. Mark the back of the unit accordingly to assist in servicing the product.

Appendix Q Using 220

Q.1 Why use 220?

220 is a keypad device which sends signals corresponding to the RC5 format by cable to other parts of the system.

A 220 can be used in a variety of different ways including:

- Sending commands to a central equipment location in a naive system. Several 220s can be connected in parallel, they are powered from a 223.
- One only 220/A sending commands to a central location in a low budget two-room installation where a 202 or 207 is used to power the sensor.
- 220 or 220/A as a restricted keyboard input device to a 222.

Q.2 Options

There are two forms of 220:

- 220 standard requires +10V supply at 5mA
- 220/A requires +5V at 5mA.

NOTE the 220 service manual shows how to convert a 220 to 220/A.

Q.3 Restrictions

- Only one 220/A may be powered from a 202 or 207.
- When using 220s on a naive network take care to account for the **Command Cable** loading as described in section 12 of this manual.
- No more than 20 220s or equivalent should be used on a network without a 214 buffer.

Q.4 Power requirement

- 220 standard requires +10V supply at 5mA
- 220/A requires +5V at 5mA.

Q.5 Connecting to 220

The 220 comes complete with a two-core overall screened cable. The connections are:

- Screen 0V, ground or common **COM**.
- **Red**, power supply +10V. (+5V for 220/A)
- **Blue**, signal to connect to **S1-C**, **S2-C** or **RC5-FP**.

220 can be connected:

- Directly by cable to a 201 or 207, see Appendices B and E.
- To a junction box such as 224 or 225, see Appendices K and L.
- To a 222, see Appendix I.
- To a 223, see appendix J.

Q.6 Installation and service aids

The 220 is supplied with a wall-mounting bezel and a template to assist with fitting.

A service manual for 220 is available.

Appendix W Worked examples

W.1 General

The following pages show a series of examples of possible combinations and connections of the *Meridian* Multiroom components. Clearly no set of examples can be exhaustive and too much detail is as confusing as too little.

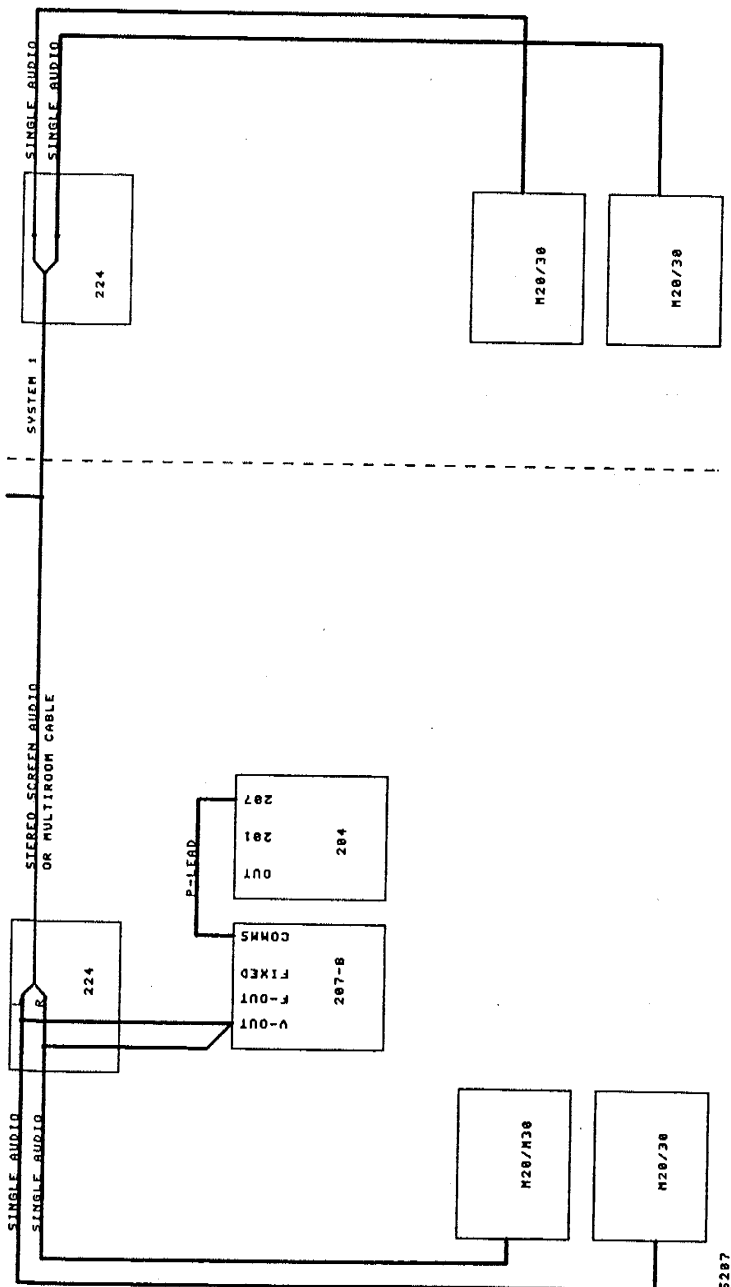
In all the examples the following should be borne in mind:

- If there is such a thing the 'main room' or the start of network is the room shown on the left side of the diagram.
- Certain details of connections are omitted, including always AC power and audio interconnect from sources to the preamp or other controller.
- Notes are added to each example.
- Where relevant, the notes show if a system is limited to two rooms.
- In cases where there can be two or more rooms, then the installation planner must be aware that these examples illustrate the type of systems that can be achieved, and that providing the basic rules of not mixing Naive and Smart systems are observed, the destination rooms of an installation could be each different, and draw from the examples.
- Remember that distributed systems and Smart products like 222 are compatible in different rooms.
- Although for clarity in many examples M20 or M30 active loudspeakers are shown, of course these could be replaced by M100, D600, 205 or other OEM active loudspeakers, power amplifiers or integrated amplifiers.

Simple system based on 207

An example of basic extension loudspeakers.

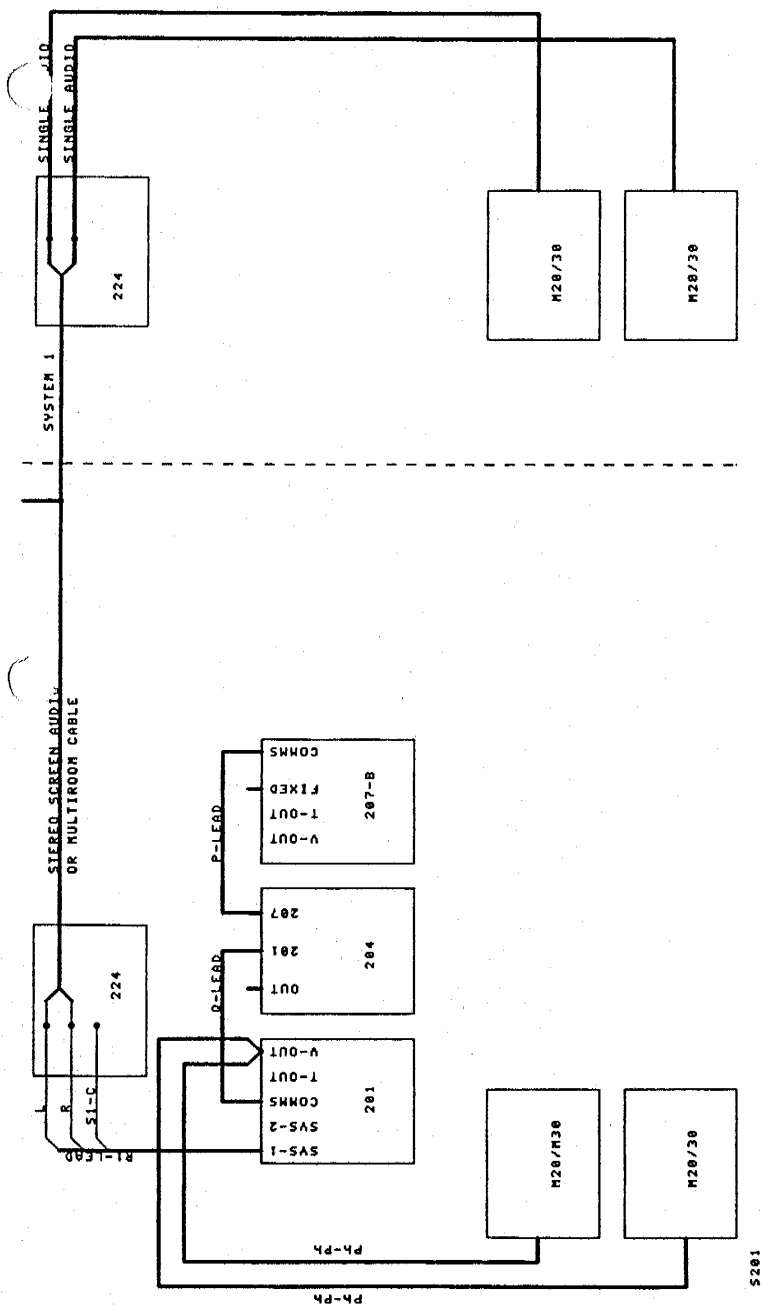
- 2+ rooms
- Exploits the preamp of a 207 CD-Player
- No power supply required
- All rooms do the same thing



Simple system based on 201

An example of basic extension loudspeakers.

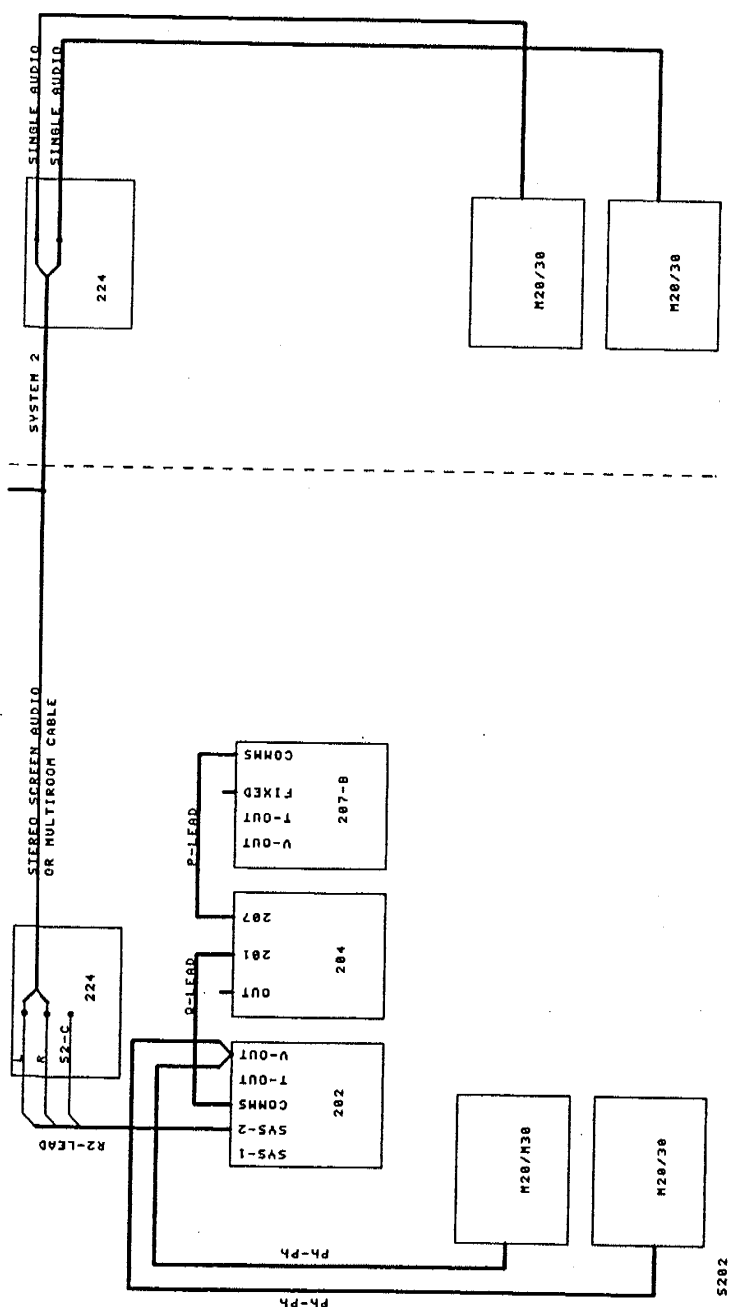
- 2+ rooms
- Uses 201 as system controller
- If *Meridian* Multiroom audio cable used can be upgraded in the future. (Command also to be run).
- No power supply required
- All rooms do the same thing



Simple system based on 202

An example of basic extension loudspeakers.

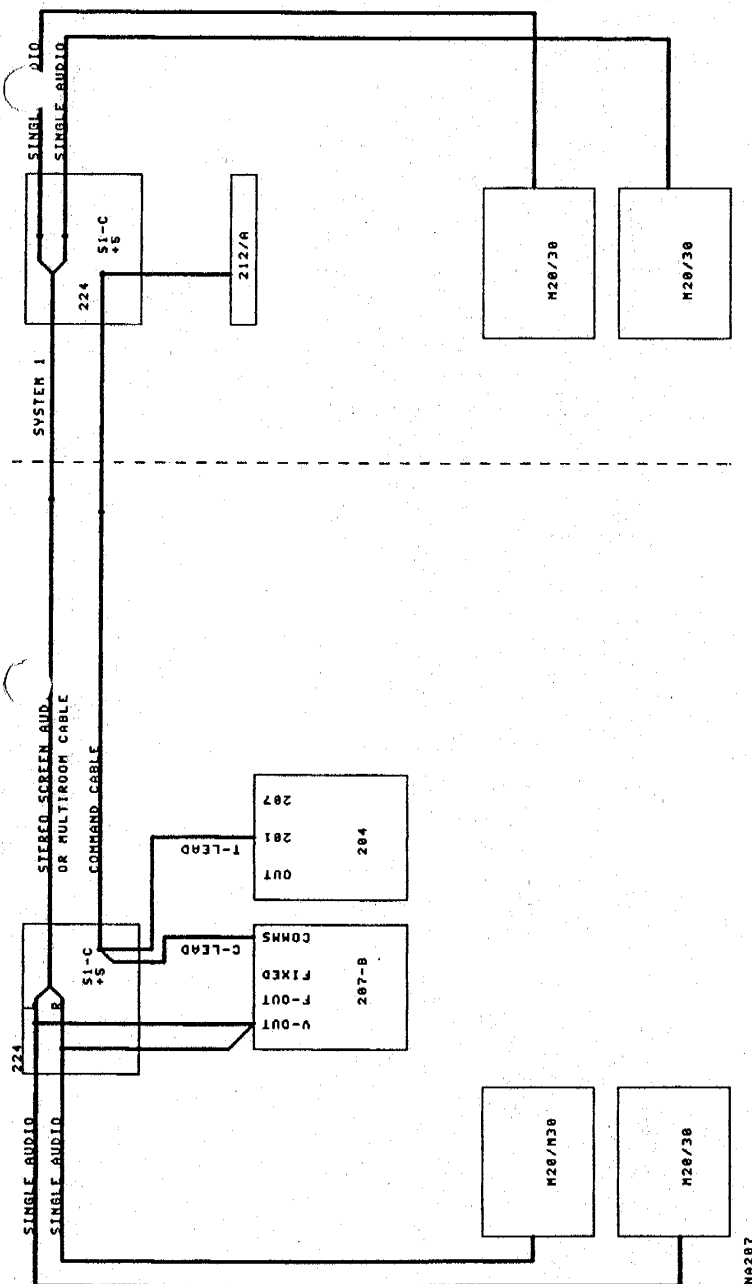
- 2+ rooms
- Second room has independent programme operated from the front panel of the 202
- Ideal for small apartment system
- Two zones have independent *STANDBY*
- Uses 202 as system controller
- If *Meridian* Multiroom audio cable used can be upgraded in the future. (Command also to be run)
- No power supply required



Naive system based on 207

An example of a naive system using a sensor powered from a 207.

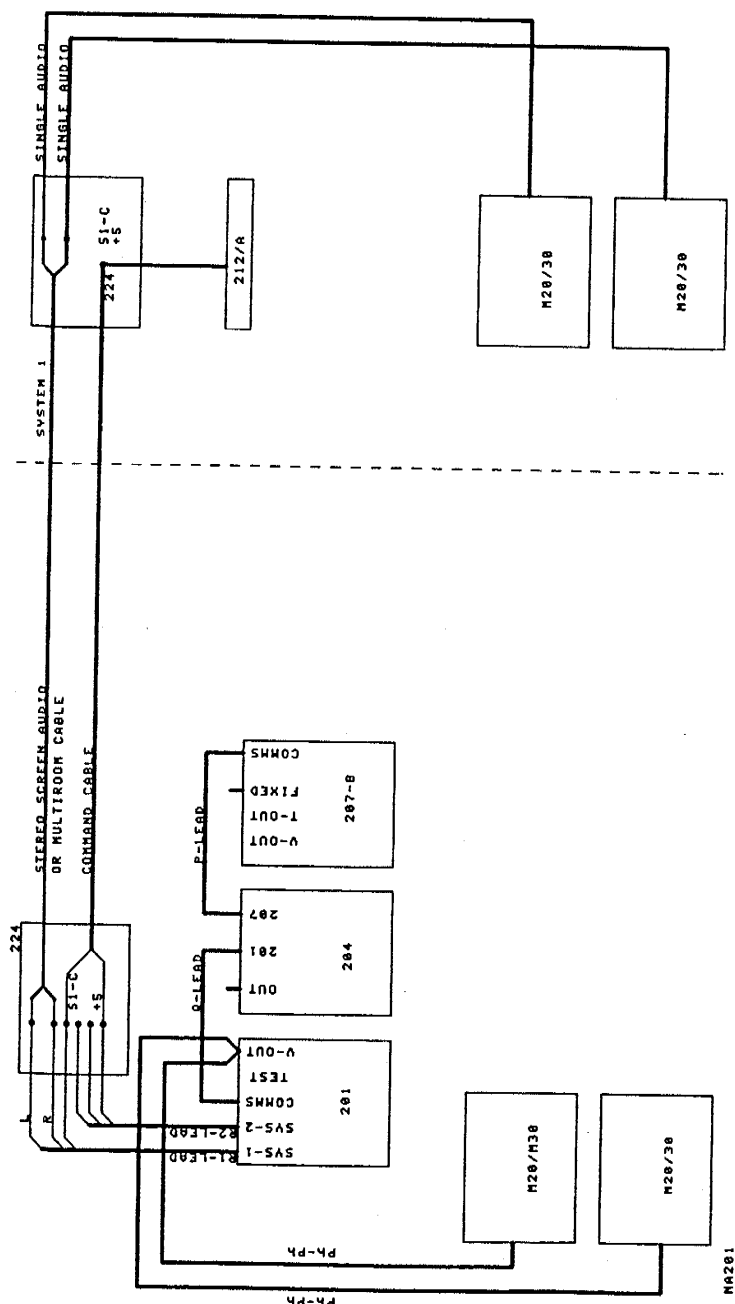
- 2+ rooms but only one 212/A or 220/A remote input device.
- Exploits the preamp of a 207 CD-Player
- No power supply required
- All rooms do the same thing
- Upgradable to more rooms with control by adding 223 power supply.
- Note use of T-lead and C-lead



Naive system based on 201

An example of a naive system using a sensor powered from a 201.

- 2+ rooms but only one 212/A or 220/A remote input device.
- **R2-lead** used only to access +5V limited supply for 212/A, available only on **System2** socket of 201.
- No power supply required
- All rooms do the same thing
- Upgradable to more rooms with control by adding 223 power supply.



An example of a naive system using a sensor powered from a 202.

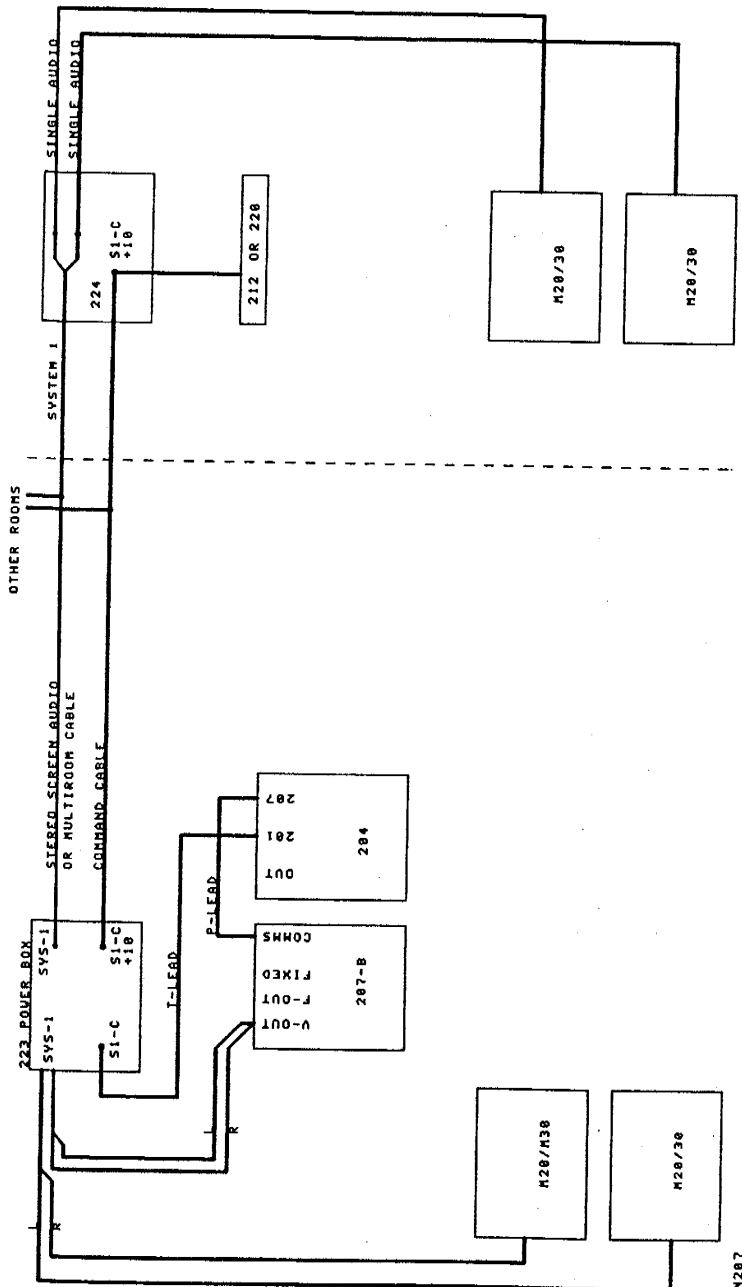
- **R2-lead** used to access +5V limited supply for 212/A, and to connect **System2** audio and **Comms**.
- Use **Open** and **Closed** to make systems independent
- 207 controllable from remote room only if **System1** set **OPEN**.
- No power supply required
- Upgradable to more rooms with control by adding 223 power supply.



Naive system based on 207

An example of a naive system using sensors.

- 2+ rooms
- Exploits the preamp of a 207 CD-Player
- Uses 223 power supply
- Other rooms could be wired like second room
- All rooms do the same thing
- Note use of T-lead



An example of a naive system using sensors

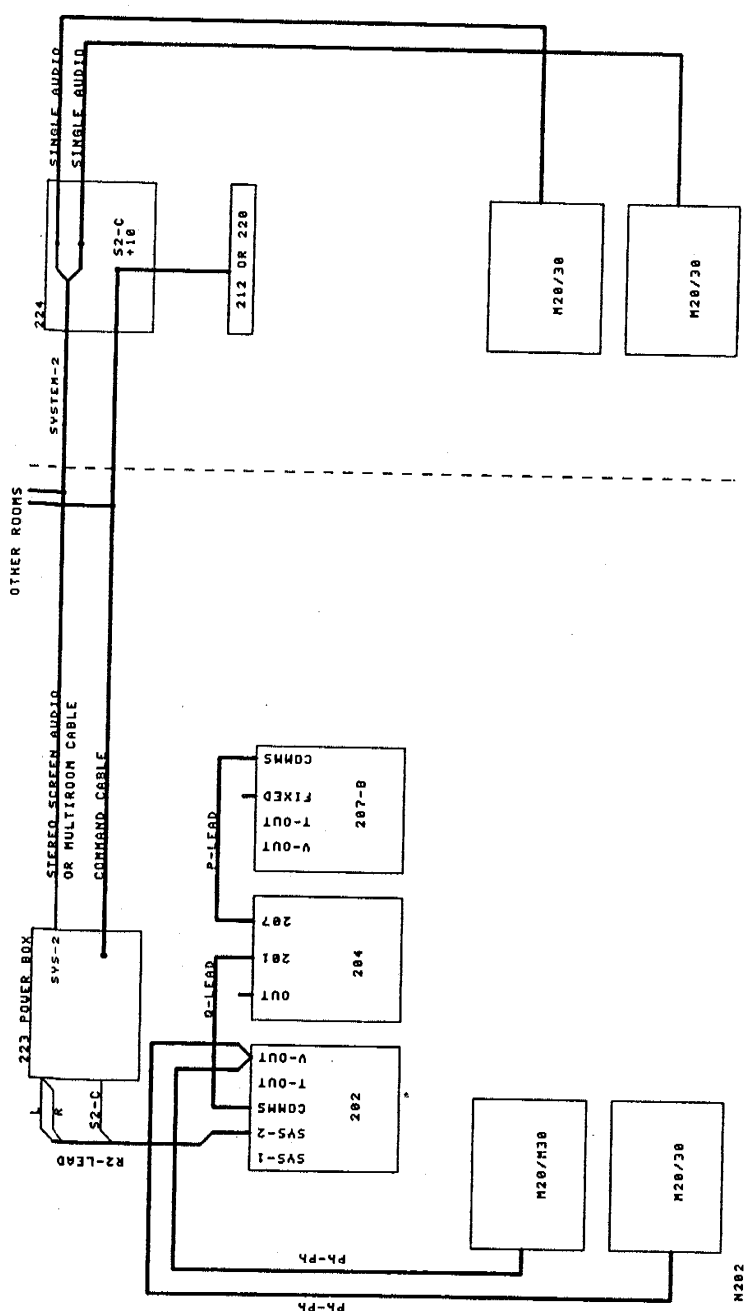
-

Naive system based on 202

An example of a naive system using sensors and a 202.

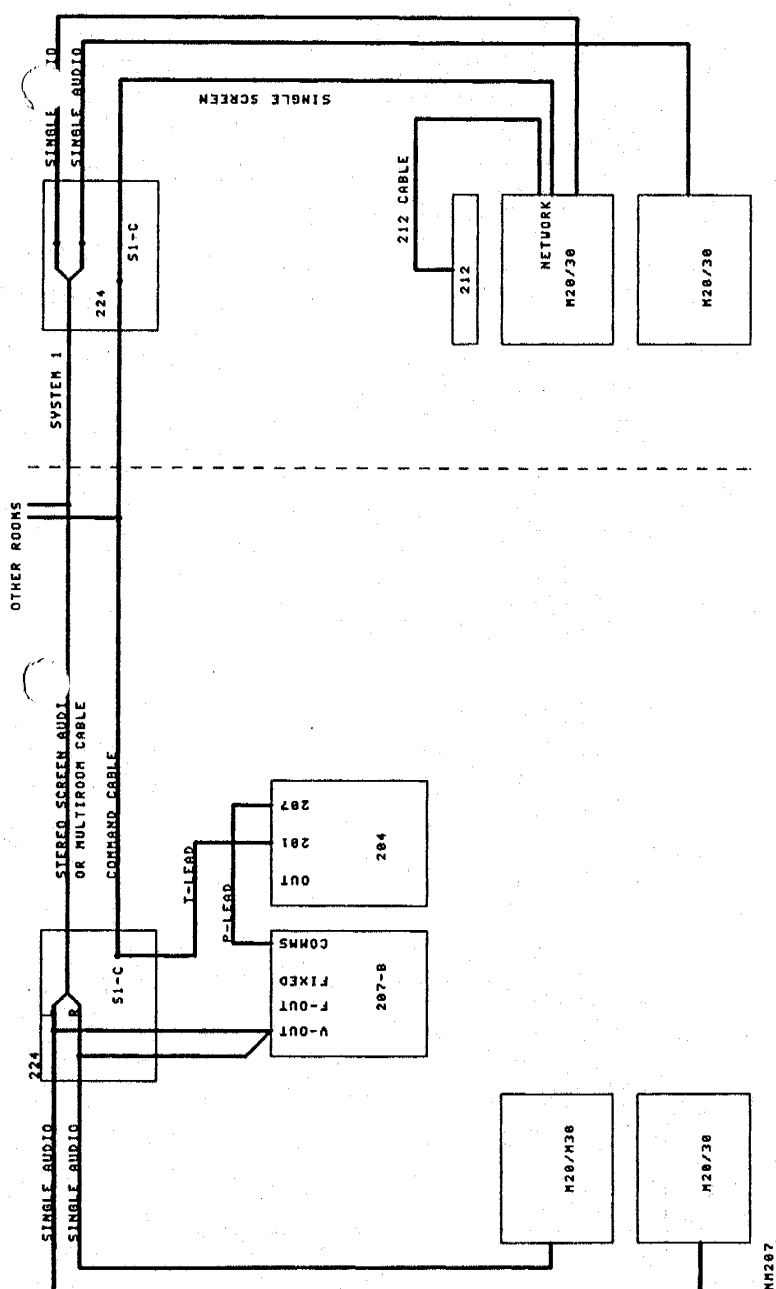
- 2+ rooms
- Uses 202 as system controller
- Second zone has independent programme operated from the front panel of the 202 or remotely from those rooms
- Rooms hard-wired to **System1** or **System2**, **System2** shown
- Ideal for small apartment system
- Two zones have independent **STANDBY**

- **R2-lead** used to access +5V limited supply for 212/A, and to connect **System2** audio and **Comms**.
- Use **Open** and **Closed** to make systems independent
- 207 controllable from remote room only if **System1** set **OPEN**.
- Uses 223 power supply



An example of a naive system using sensor powered from M20, M30 or M100.

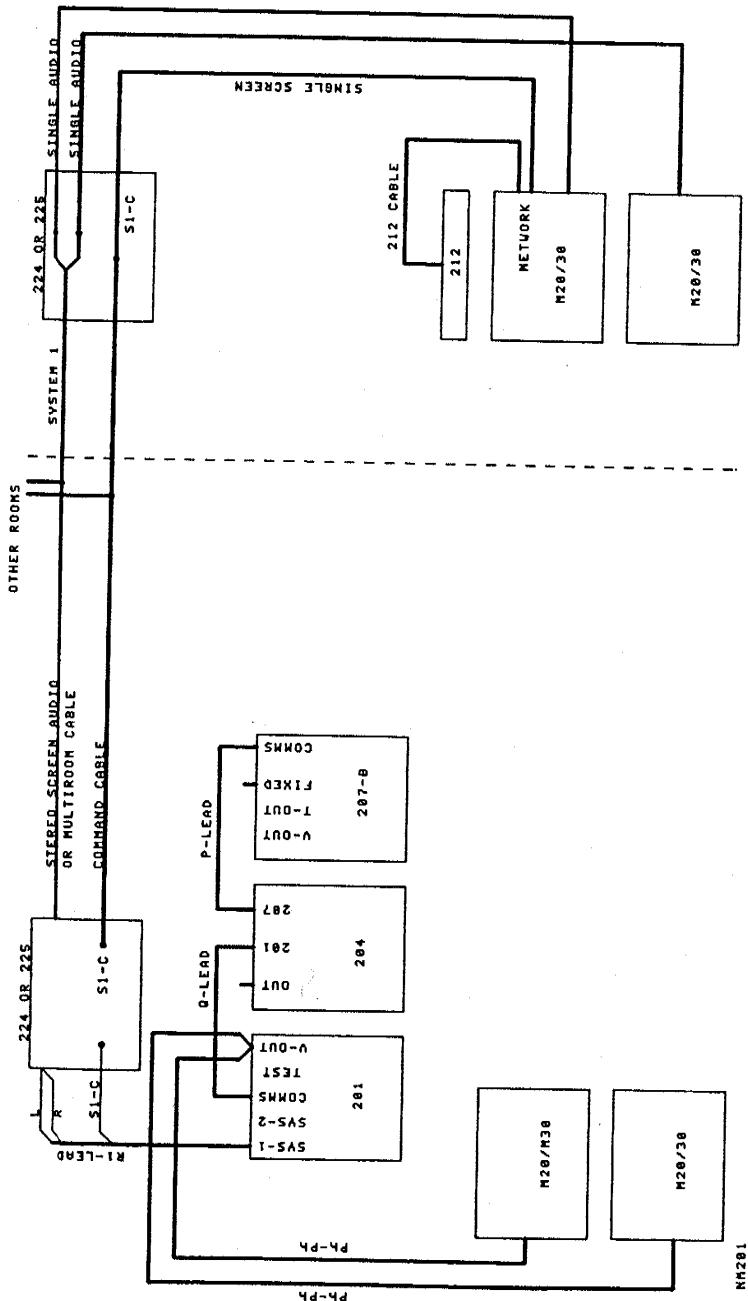
- 2+ rooms
- Exploits the preamp of a 207 CD-Player
- Uses Active to power sensor
- Other rooms could be wired like second room
- All rooms do the same thing
- Note use of T-lead



Naive system based on 201

An example of a naive system using sensor powered from M20, M30 or M100.

- 2+ rooms
- Uses Active speaker to power sensor
- All rooms do the same thing
- Other rooms could be wired like second room

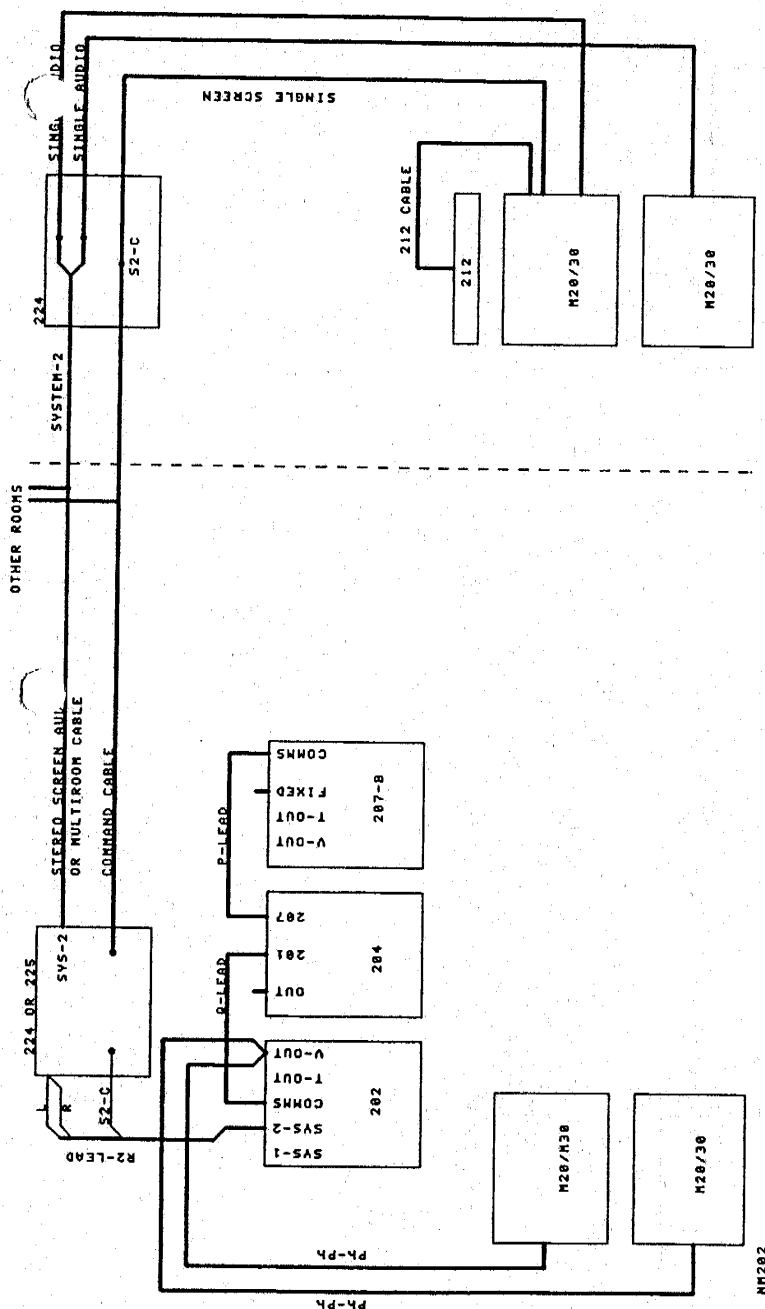


Naive system based on 202

An example of a naive system using a sensor powered from M20, M30 or M100 and a 202.

- 2+ rooms
- Uses 202 as system controller
- Uses Active speaker to power sensor
- Second zone has independent programme operated from the front panel of the 202 or remotely from those rooms
- Rooms hard-wired to **System1** or **System2**, **System2** shown
- Ideal for small apartment system
- Two zones have independent **STANDBY**

- **R2-lead** used to access +5V limited supply for 212/A, and to connect **System2** audio and Comms.
- Use **Open** and **Closed** to make systems independent
- 207 controllable from remote room only if **System1** set **OPEN**.

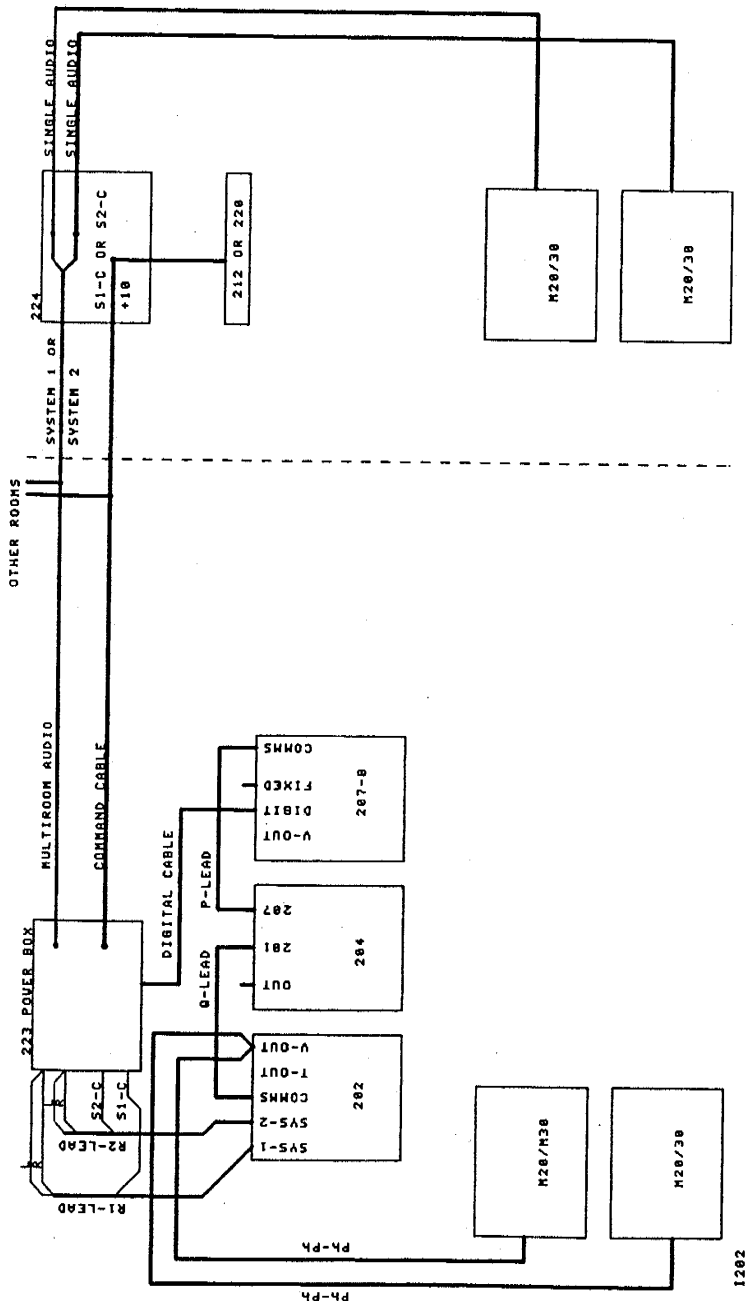


Naive system based on 202

An example of a naive system using sensors and a 202.

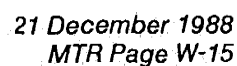
- 2+ rooms
- Uses 202 as system controller
- Second zone has independent programme operated from the front panel of the 202 or remotely from those rooms
- Rooms hard-wired to **System1** or **System2**, **System2** shown
- Ideal for small apartment system
- Two zones have independent **STANDBY**

- Note use of **R1-lead** and **R2-lead**
- Uses 223 power supply



An example of a distributed products application.

- Fixed level distribution
- Note use of **Tape Out** of 201 as fixed level distribution. Set 201 to *COPY SYSTEM1*.

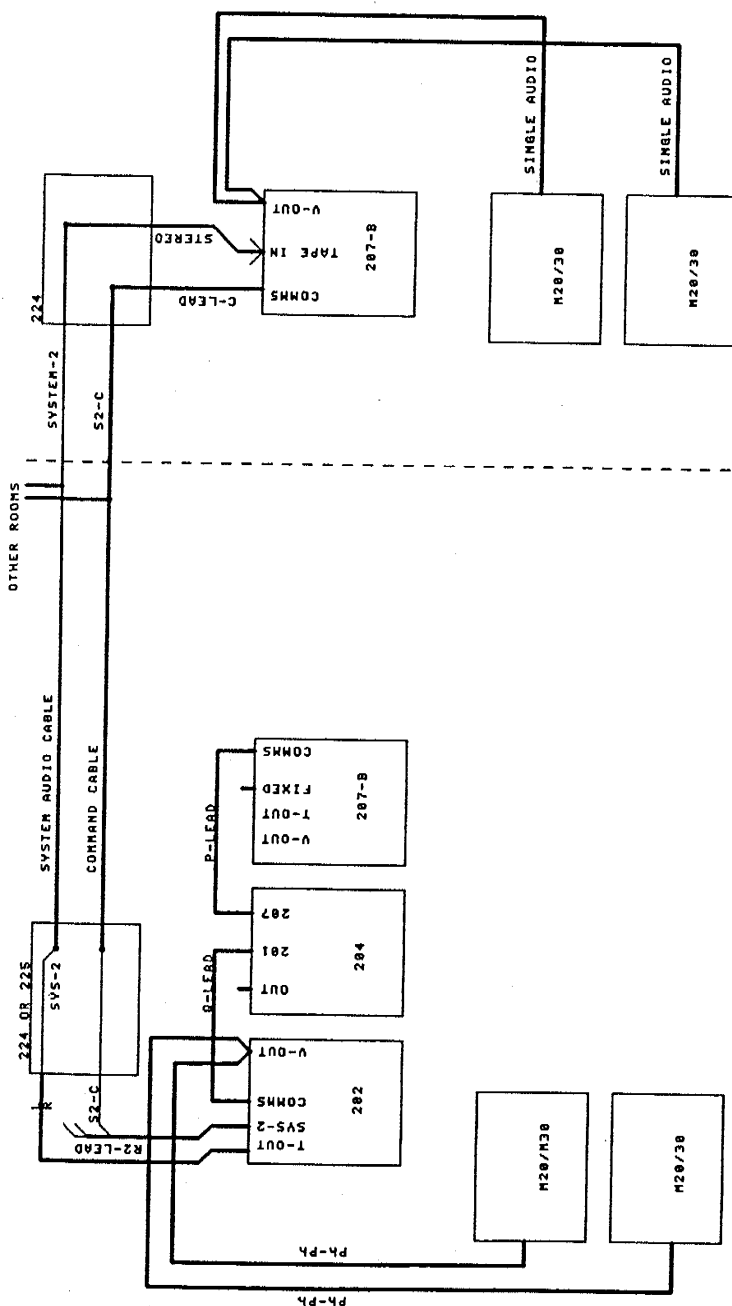


Distributed Smart system 202, two 207s

An example of a distributed products application.

- 2+ rooms
- Exploits the preamps of a 207 CD-Player and a 202
- Both rooms can Radio and have independent CD.
- Room 2 can listen to room 1 CD but not control it
- Room 2 CD could be wired back to 202
- No power supply required

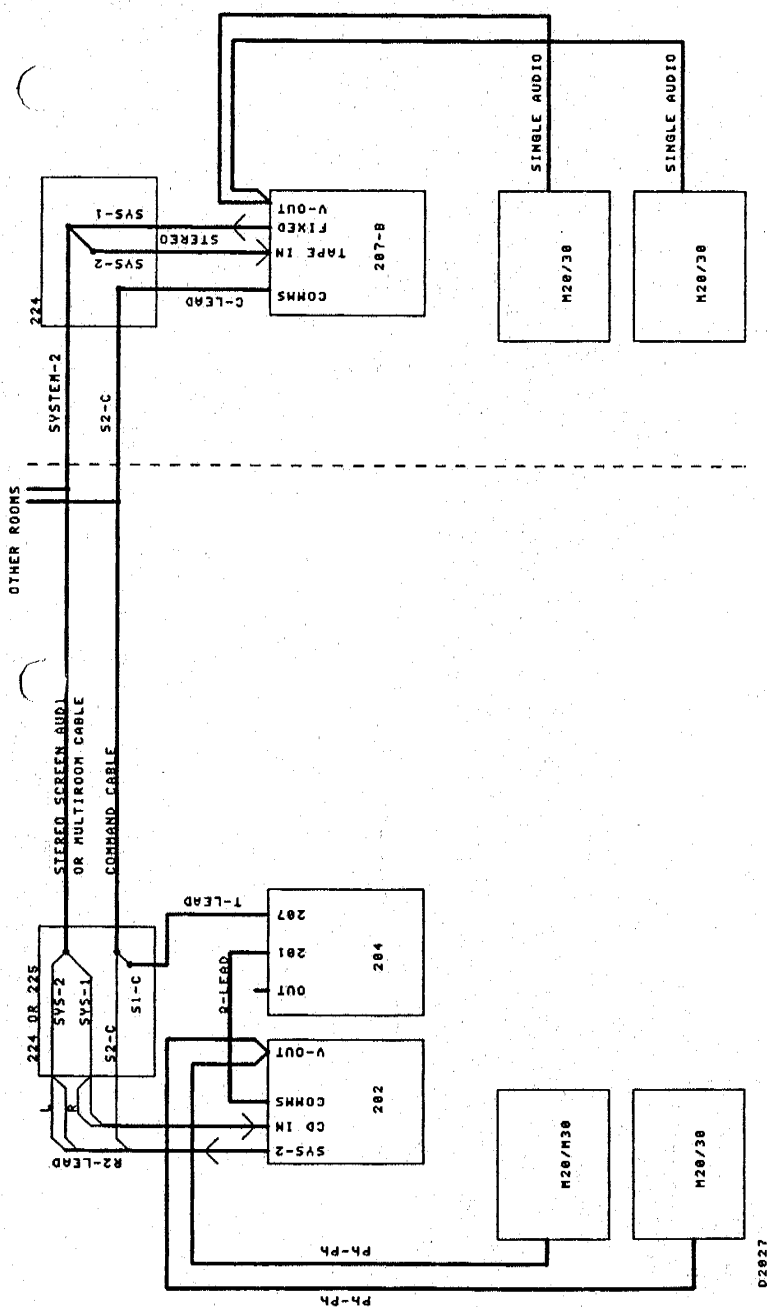
- Other rooms could be wired like second room
- Complete remote control from both rooms
- Note use of **C-lead** and **Fixed out** of 207.
- Note use of **Tape out** of 202 for fixed level distribution. Set 202 *COPY SYSTEM2*.



Distributed Smart system 202, 207

An example of a distributed products application.

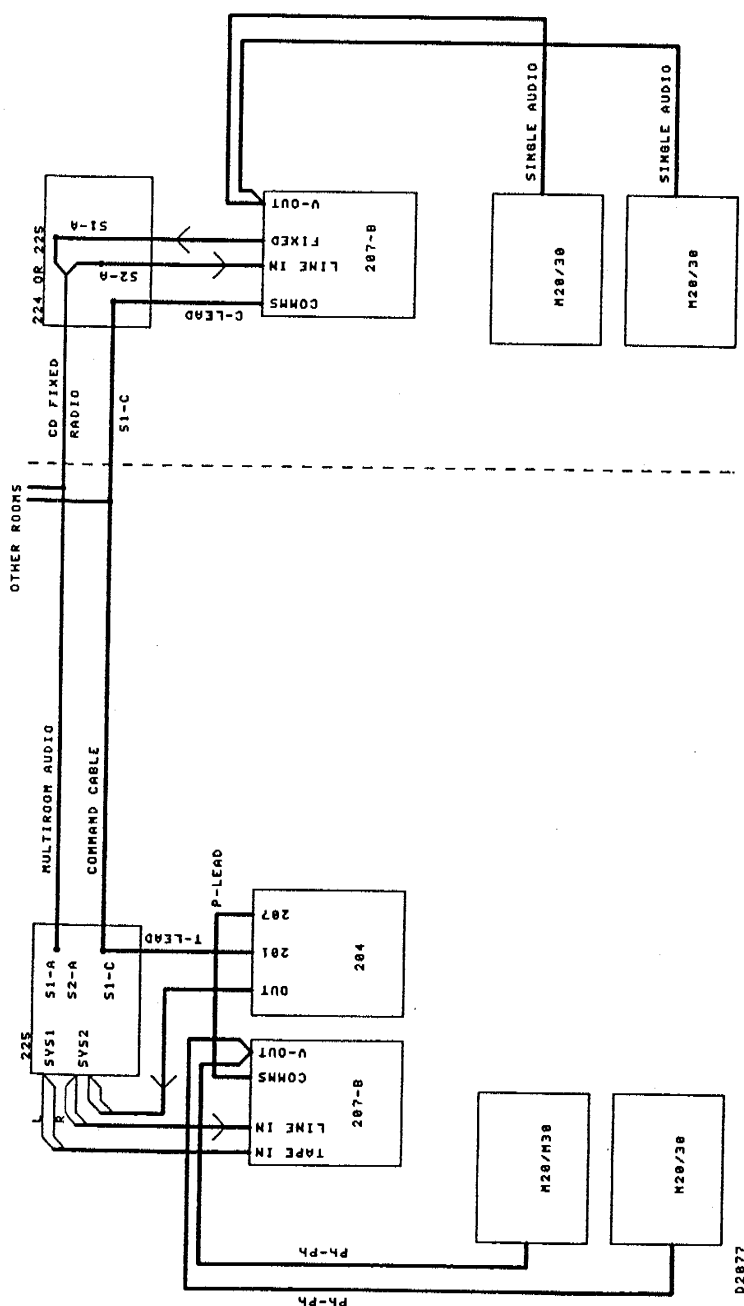
- 2+ rooms
- Both rooms can listen to and control CD and Radio.
- Exploits the preamps of a 207 CD-Player and a 201
- Second room has independent access to the sources connected to the 202
- No power supply required
- Other rooms could be wired like second room
- Complete remote control from both rooms
- Note use of C-lead and Fixed out of 207.



Distributed Smart system 207, 207

An example of a distributed products application.

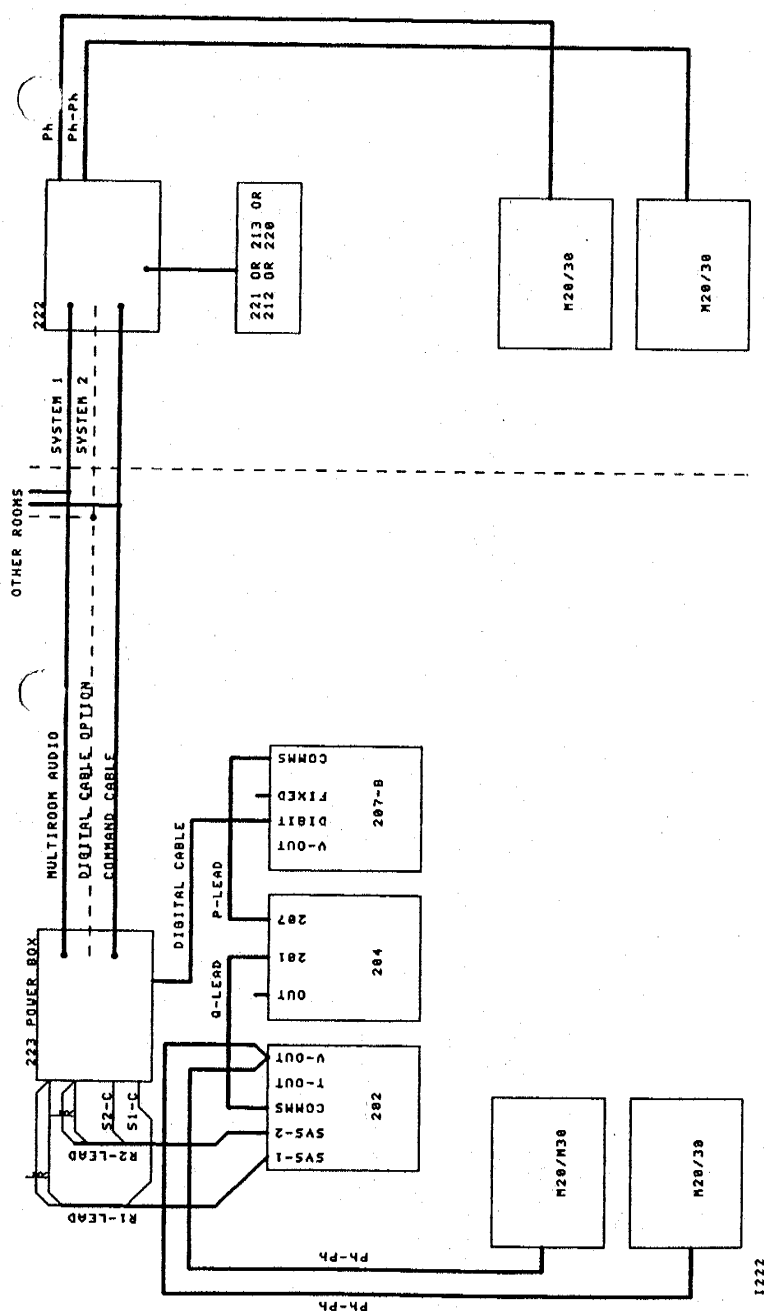
- 2+ rooms
- Both rooms can listen to and control 204
- Both rooms have independent CD
- Main room wired to listen to second 207, but will not control it
- Exploits the preamps of a 207 CD-Player and a 201
- No power supply required
- Other rooms could be wired like second room
- Complete remote control from both rooms
- Note use of C-lead and Fixed out of 207.



Smart system using 222

Standard example of a smart system based on 202 controller but using 222 in a second room.

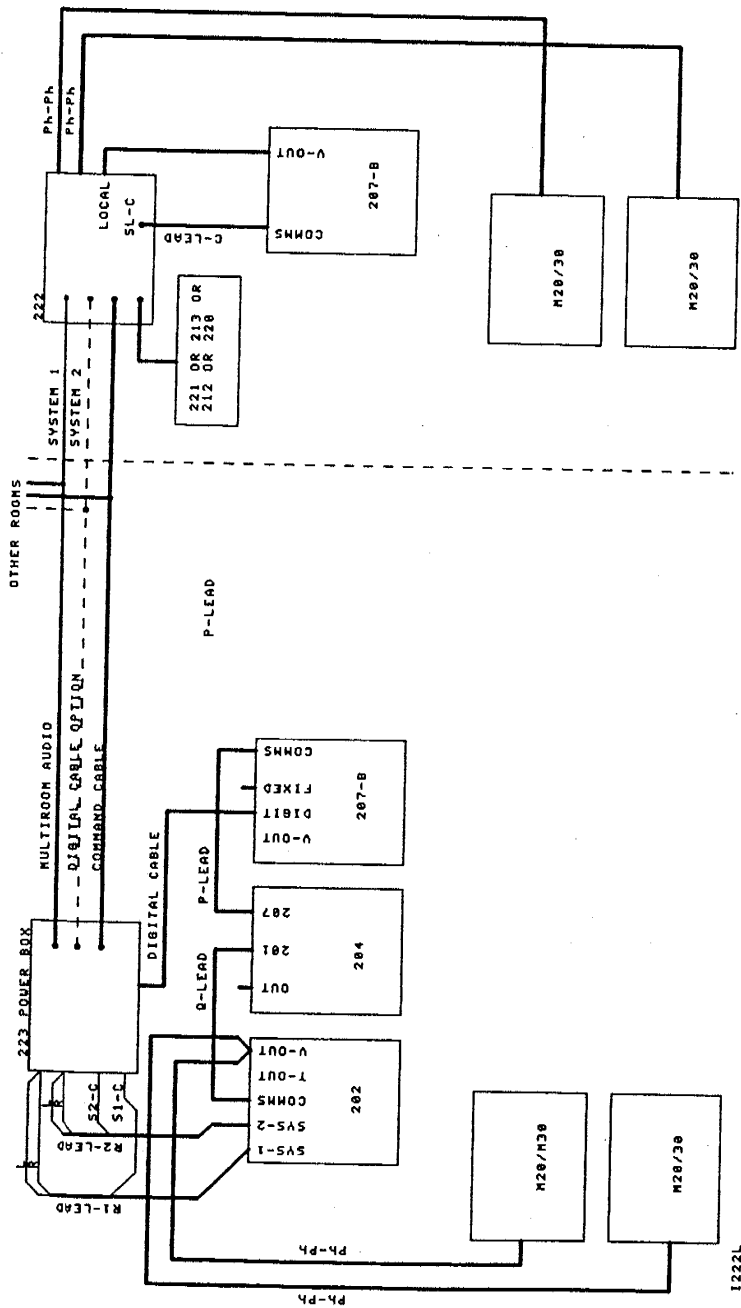
- 2+ rooms
- Remote rooms can listen to and control both systems.
- Other rooms could be wired like second room
- Complete remote control from both rooms



Smart system using 222

Standard example of a smart system based on 202 controller, 222 in a second room showing a local source.

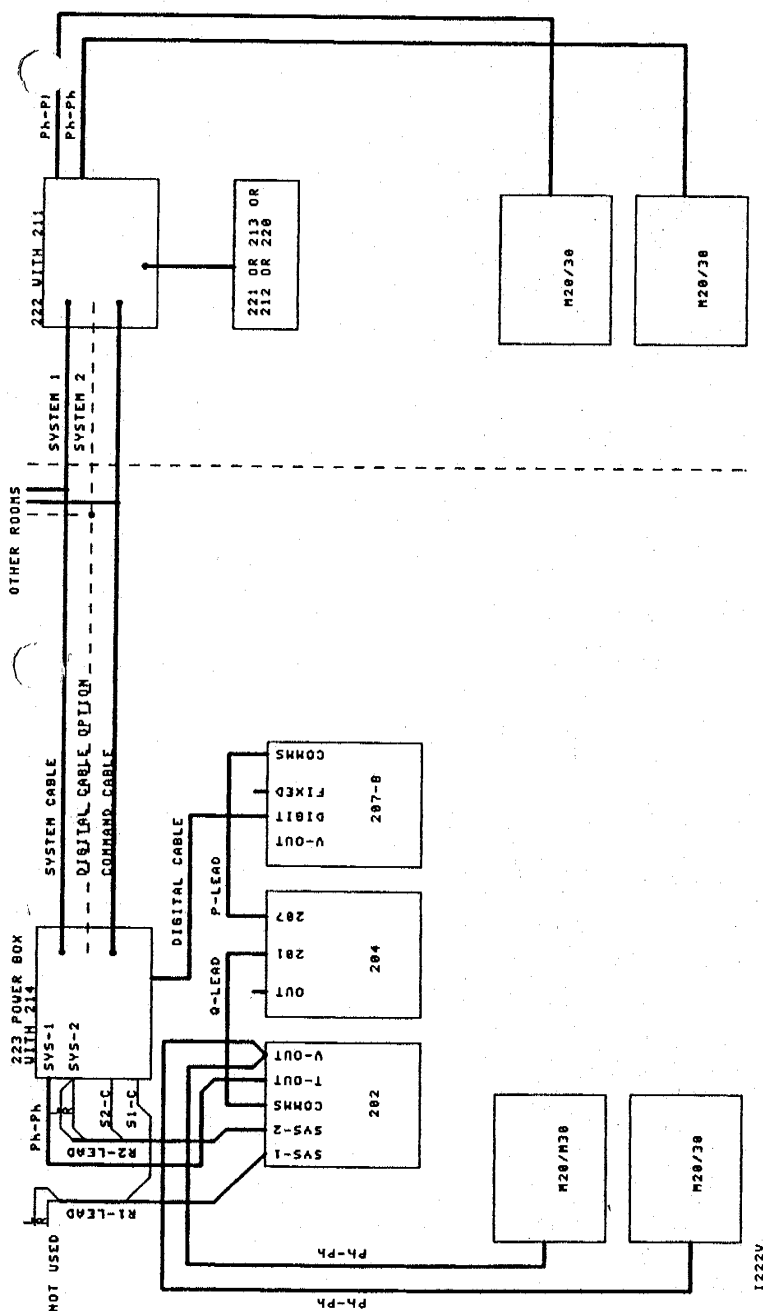
- 2+ rooms
- Local source shown is 207, note use of **C-lead**
- local 207 has to be 'blinded'
- Other rooms could be wired like second room
- Complete remote control from both rooms



Smart system using 222

Example of a smart system using fixed level distribution.

- 2+ rooms
- Volume control in 222
- 202 set to external (or use tape output set to follow **System 2**)
- Other rooms could be wired like second room
- Complete remote control from both rooms



Smart system using D600

Example of a smart system using fixed level distribution.

- 2+ rooms
- Uses D600 as second system controller
- Local 207 can be distributed back to 202 for listening and control
- 202 set to external (or use tape output set to follow **System 2**)
- Other rooms could be wired like second room
- Complete remote control from both rooms

