xantech®

2009 Digital Delivery System

DIGITAL DELIVERY SYSTEM

Category-5 Audio Without the Compromises

If you wanted to break away from old style audio wiring and simplify your installations using Category-5 cabling, you had two choices.

You could settle for a low-powered system with analog amplifiers in volume controls. But these are background music quality, adequate for casual indoor listening but not capable of playing music outdoors. And long-term overdriving of such a system can lead to speaker damage and expensive, time-consuming callbacks. Or, you could go with a digitally-enabled networked system. But they can be complex to install (many require IP addressing), expensive, and difficult to maintain.

But with Xantech's Digital Delivery System (DDS) technology, you can have it all: a high-performance Category-5 wired system with digital quality and analog simplicity. DDS is ideal for the needs of the next generation of home buyers. DDS is easy to scale and build on, with four-room modular building block design. It uses the fraction of the power of a conventional centrally-amplified system, yet has more than enough audio output power to run large indoor zones with four speakers and outdoor zones as well. And DDS is more efficient to specify and install—it goes in faster, is easier to connect and configure, and uses less expensive wiring than most conventional analog central amplifier systems.

Simple, elegant OLED keypads provide precise, intuitive control of system and sources. And the system's all-digital clean, stable higher power ensures longer speaker life and fewer service issues. Most important, as the newest approach to installed digital sound, DDS is from Xantech, the brand which invented audio/video control and has over forty years of leadership in the field.

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DIGITAL DELIVERY SYSTEM
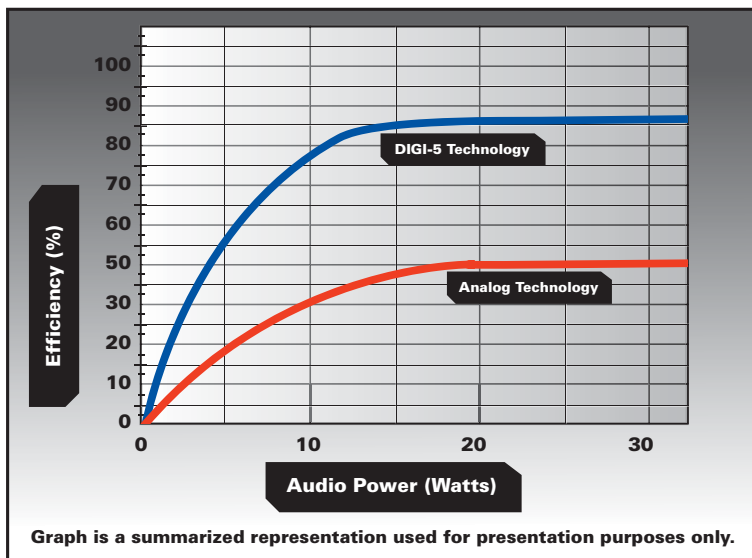
Advantages of DDS technology

- **All-digital signal from source to amplifier**—signal integrity is maintained over long distances without distortion entering the audio chain.
- **Digital amplification**—DDS delivers high audio power (30 Watts) to each keypad-controlled zone over Category-5 cabling, eliminating the need for costly "home run" speaker wiring (speakers connect directly to the high-output keypads).
- **Efficient operation**—DDS digital amplifiers use a fraction of the electrical power of a conventional analog amplifier and generate very little heat, making DDS the perfect entertainment technology partner for tomorrow's more energy-efficient homes.
- **Intuitive keypads**—the keypad's super-bright OLED display provides precise control over all audio and source functions including dedicated equalization for each room. Mini-remotes extend ease-of-operation in any room.
- **Outdoor music distribution capability**—the higher output power of DDS makes it ideal for including an outdoor zone; the 30 Watt amplifier has sufficient headroom to run more demanding speakers.
- **Large-room capability**—30 Watt DDS amplifier keypad can be 'zone paired' on any hub, making combined zones easy to create for large areas such as dining rooms and kitchens.
- **Local source operation**—available local source wall-plate allows users to play a local source (MP3, PC, CD player, etc.) in any room either using digital or analog output from that source.
- **More cost effective system design and installation**—pre-wiring is simpler and more economical (up to 65% lower than typical audio system cabling) since most system wiring uses standard Category-5 network cabling. Installation and set-up require less time and effort than typical home-run centrally-amplified multi-zone systems. Choice of single or multi-source operation provides an effective "better/best" approach for installers.
- **Flexibility and expandability**— both rack-mount and wall/panel-mount configurations are available for any system design. The DDS building-block approach is ideal for tomorrow's smaller housing floor-plans—a basic four-zone system can be easily expanded with expansion components to any size needed (up to 28 zones total). DDS systems can be integrated with other whole-house control systems through a communication port.

Because its all-digital distribution method uses Category-5 cabling from audio source to amplified keypad instead of costly dedicated speaker-wire runs, a DDS package can be up to 65% cheaper to pre-wire

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DDS technology delivers the audio power necessary to bring digital music outdoors, making it the ideal entertainment solution for active homebuyers.

DIGI-5 Technology

Analog Technology

Efficiency (%)

Audio Power (Watts)

Graph is a summarized representation used for presentation purposes only.

DDS amplifier technology is more than 35% more efficient than a conventional amplifier

DIGITAL DELIVERY SYSTEM

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4 - SOURCE 4 - ZONE KIT - EQUIPMENT RACK

FEATURES:

- Digital Delivery System (DDS)
- Complete multi-room audio package
- Controls up to four sources
- Distributes audio up to four zones
- 30 Watts Digital Amp
- Super Bright OLED Display
- Studio Slim Design
- Fits in Decora® Plate

ORDER: D5RHK

GENERAL INFO:

- (1) Equipment Rack 4x4 Hub
- (4) Mini Remotes
- (4) DIGI-5 Keypads
- (4) 283D Emitters

International Version Available
Order: D5RHKE

4 - SOURCE 4 - ZONE KIT - WALL MOUNT KIT

FEATURES:

- Digital Delivery System (DDS)
- Complete multi-room audio package
- Controls up to four sources
- Distributes audio up to four zones
- Sources can be remotely located
- Based on Wall Mount hub
- Fits most structured wiring systems
- 30 Watts Digital Amp
- Super Bright OLED Display
- Studio Slim Design
- Fits in Decora Plate

ORDER: D5SHK4

GENERAL INFO:

- (1) Wall Mount 4x4 Hub
- (1) Wall Mount Power Supply
- (4) Mini Remotes
- (4) 283D Emitters
- (4) DIGI-5 Keypads
- (4) Local Source Input Plates
- (1) 110 Punch-Down Tool

International Version Available
Order: D5SHK4E

SINGLE SOURCE 4 - ZONE KIT - WALL MOUNT

FEATURES:

- Digital Delivery System (DDS)
- Complete multi-room audio package
- Controls a single source
- Distributes audio up to four zones
- Source can be remotely located
- Based on Wall Mount hub
- Fits most structured wiring systems
- 30 Watt Digital Amp
- Super Bright OLED Display
- Studio Slim Design
- Fits in Decora Plate

ORDER: D5SHK

GENERAL INFO:

- (1) Wall Mount 1x4 Hub
- (1) Wall Mount Power Supply
- (1) Mini Remote
- (1) 283D Emitters
- (4) DIGI-5 Keypads
- (1) Local Source Input Plates
- (1) 110 Punch-Down Tool

International Version Available
Order: D5SHKE

4 - SOURCE 4 - ZONE EQUIPMENT RACK HUB

FEATURES:

- Digital Delivery System (DDS)
- Digital coax audio inputs
- Analog Left & Right audio inputs
- Audio input level control
- Audio clipping indicators
- Serial RS-232 control port
- Paging & Doorbell compatible
- IR emitter outputs
- Zone pairing for combining keypads in a zone
- Zone power output for longer distances
- Expansion capability

ORDER: D5RH

GENERAL INFO:

- ~120V 50/60Hz Power Supply: 240W max.
- Dimensions: 17"W x 14.25"D x 2.41"H
- Optional RM1UKIT rack ears available

International Version Available
Order: D5RHE

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6 - ZONE EQUIPMENT RACK EXPANSION HUB

FEATURES:

- Digital Delivery System (DDS)
- Audio Loop-Thru connection from master hub
- Audio input level control
- Serial RS-232 control port
- IR emitter outputs
- Zone pairing for combining keypads in a zone
- Zone power output for longer distances

ORDER: D5XH

GENERAL INFO:

- ~120V 50/60Hz Power Supply: 240W max.
- Dimensions: 17"W x 14.25"D x 2.41"H
- Optional RM1UKIT rack ears available

International Version Available
Order: D5XHE

4 - SOURCE 4 - ZONE WALL MOUNT HUB

FEATURES:

- Digital Delivery System (DDS)
- 4 Source 110 punch-down inputs
- 4 Zone 110 punch-down outputs
- 4 Source Loop-Thru, expansion capable
- Zone power output for longer distances
- Serial RS-232 control port

ORDER: D5SH4

GENERAL INFO:

- Requires D5PS Power Supply
- Requires D5IP Source Input Plate
- Mounting Holes: 6" Width, 4" Height
  (structured wiring enclosed compatible)
- Dimensions: 6.50"W x 1.89"D x 6.80"H

SINGLE SOURCE 4 - ZONE WALL MOUNT HUB

FEATURES:

- DIGI-5 Technology
- Single Source 110 punch-down inputs
- 4 Zone 110 punch-down outputs
- Single Source Loop-Thru, expansion capable
- Zone power output for longer distances
- Serial RS-232 control port

ORDER: D5SH

GENERAL INFO:

- Requires D5PS Power Supply
- Requires D5IP Source Input Plate
- Mounting Holes: 6" Width, 4" Height
  (structured wiring enclosed compatible)
- Dimensions: 6.50"W x 1.89"D x 6.80"H

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WALL MOUNT POWER SUPPLY

FEATURES:

- Universal input 100 to 240VAC, 50 to 60Hz
- Incredible efficiency (up to 89%)
- Standard IEC power cord compatible
- Over voltage protection
- Over temperature protection
- Standard IEC power cord compatible

ORDER: D5PS

GENERAL INFO:

- 24VAC, 8.3A rated
- Intended for Wall Mount hubs
- Mounting Holes: 6" Width, 3" Height
  (structured wiring enclosure compatible)
- Dimensions: 6.55"W x 1.74"D x 4.50"H

Shipped with International power cords
Order: D5PSE

LOCAL SOURCE INPUT PLATE

FEATURES:

- Digital coax audio inputs
- Analog Left & Right audio inputs
- Audio input level control
- IR emitter output
- RJ45 Connection

ORDER: D5IP

GENERAL INFO:

- Decora style, fits into a single-gang box

DIGITAL DELIVERY SYSTEM KEYPAD AND DIGITAL AMPLIFIER

FEATURES:

- Digital Delivery System (DDS)
- Built-in digital amplifier
- Source selection control
- Volume level control
- Bass, treble, balance control
- Back-lit buttons with timeout control
- RJ45 Connection
- 30 Watt Digital Amp

ORDER: D5KP

GENERAL INFO:

- Decora style, fits into a single-gang box
- Includes a decora ® plate for a flush fit

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DIGITAL DELIVERY SYSTEM KEYPAD AND DIGITAL AMPLIFIER UK/EU VERSION

FEATURES:
- Digital Delivery System (DDS)
- Built-in digital amplifier
- Source selection control
- Volume level control
- Bass, treble, balance control
- Back-lit buttons with timeout control
- 30 Watt Digital Amp

UK/EU Version
ORDER: D5KPE

DIGITAL DELIVERY SYSTEM KEYPAD COLOR KIT

FEATURES:
- Digital Delivery System (DDS)
- Includes additional Screwless Trimplate & Bezel
- Black, Almond, and Ivory color
- Color Kit for D5KP

ORDER: D5KCK

MINI REMOTE

FEATURES:
- Palm-sized remote control
- Source selection functions
- Volume control functions
- MUTE and POWER functions

ORDER: D5MR

GENERAL INFO:
- Includes Lithium Battery

ADVANCED LEARNING REMOTE

FEATURES:
- Hand-held remote control
- Programmable four source
- Compatible with all major components
- Pre-programmed with DIGI-5 controls
- Compatible with all major components
- Dedicated DIGI-5 volume and source controls
- 3 IR macro function buttons

ORDER: D5MR

GENERAL INFO:
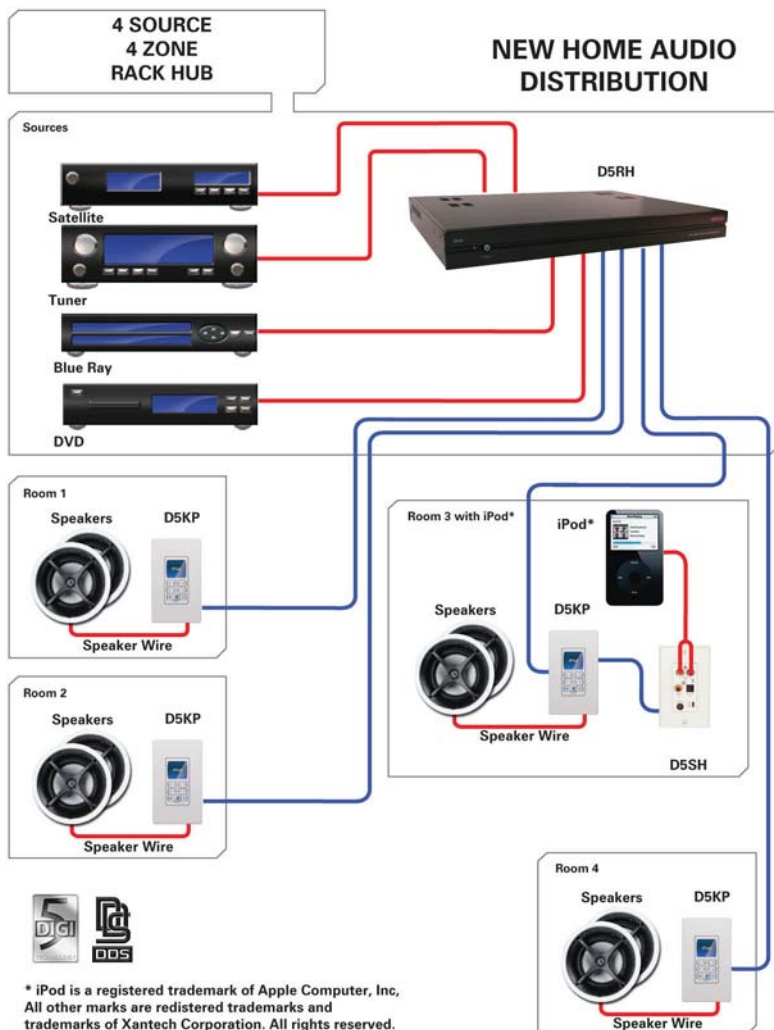- Includes batteries
- Built-in IR code library

1 U RACK EAR KIT

FEATURES:
- For use with 19" Equipment Rack hubs
- Easy to install

ORDER: RM1UKIT

GENERAL INFO:
- Includes left and right ears and hardware

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4 SOURCE
4 ZONE
RACK HUB

NEW HOME AUDIO DISTRIBUTION

* iPod is a registered trademark of Apple Computer, Inc, All other marks are redistered trademarks and trademarks of Xantech Corporation. All rights reserved.
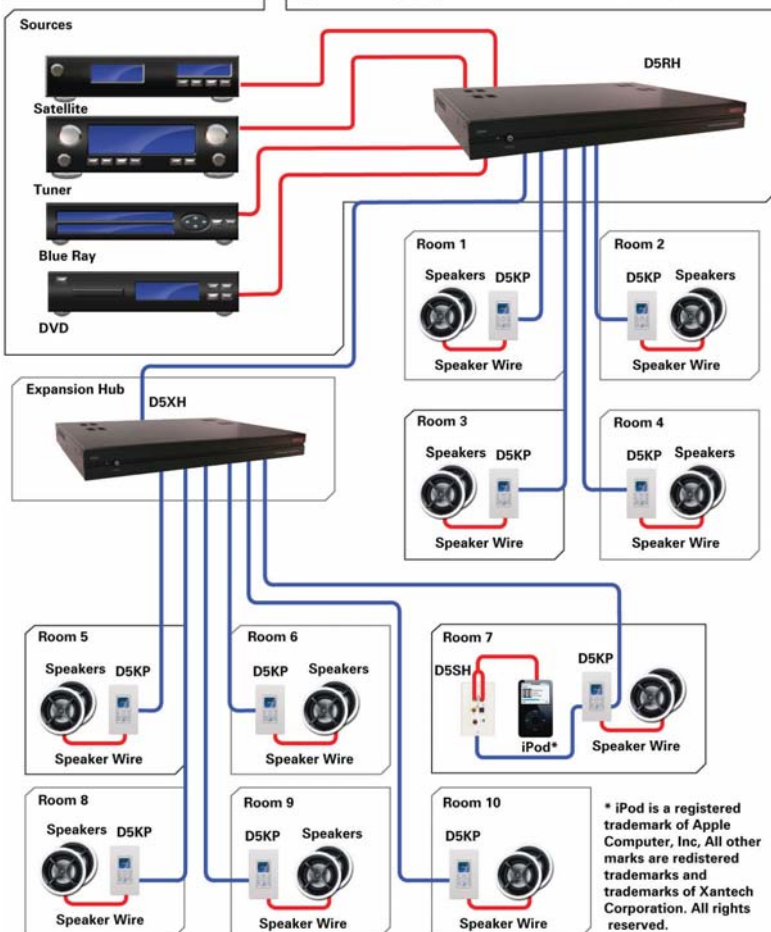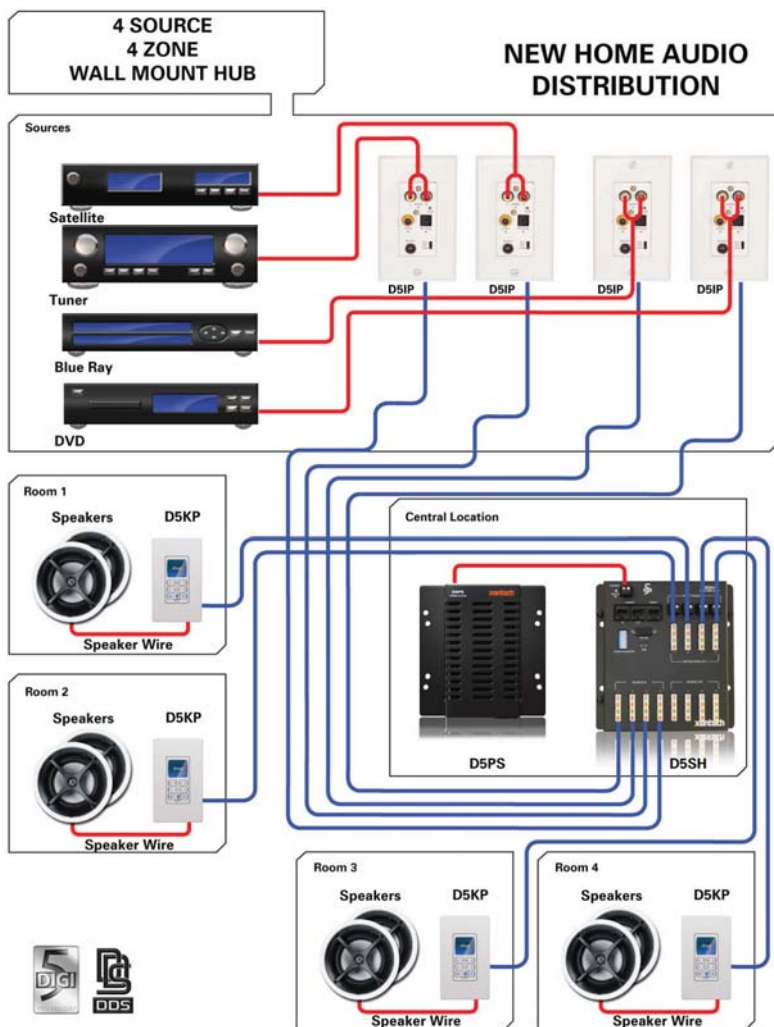
Distribute high-performance audio to 4 locations or more. The expandable master hub is centrally located while the source components can be conveniently located in the entertainment center. DDS technology delivers high-power amplification eliminating the need for special high efficiency speakers.
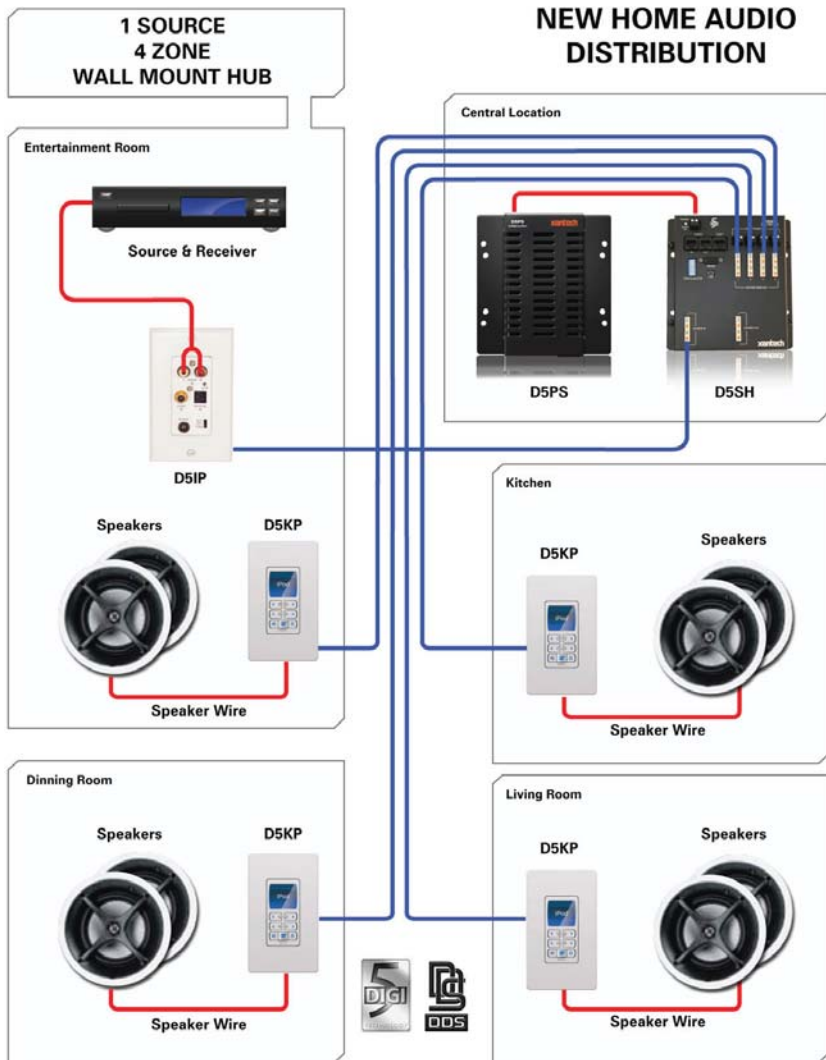
DIGITAL DELIVERY SYSTEM

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DIGITAL DELIVERY SYSTEM

4 SOURCE 10 ZONE RACK KIT

NEW HOME AUDIO DISTRIBUTION

Sources

Satellite

Tuner

Blue Ray

DVD

D5RH

Expansion Hub — D5XH

Room 1 — Speakers — D5KP — Speaker Wire

Room 2 — D5KP — Speakers — Speaker Wire

Room 3 — Speakers — D5KP — Speaker Wire

Room 4 — D5KP — Speakers — Speaker Wire

Room 5 — Speakers — D5KP — Speaker Wire

Room 6 — D5KP — Speakers — Speaker Wire

Room 7 — D5SH — iPod* — D5KP — Speaker Wire

Room 8 — Speakers — D5KP — Speaker Wire

Room 9 — D5KP — Speakers — Speaker Wire

Room 10 — D5KP — Speaker Wire

* iPod is a registered trademark of Apple Computer, Inc, All other marks are redistered trademarks and trademarks of Xantech Corporation. All rights reserved.

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**4 SOURCE
4 ZONE
WALL MOUNT HUB**

**NEW HOME AUDIO
DISTRIBUTION**

Sources

Satellite

Tuner

Blue Ray

DVD

D5IP   D5IP   D5IP   D5IP

Room 1

Speakers   D5KP

Speaker Wire

Room 2

Speakers   D5KP

Speaker Wire

Central Location

D5PS   D5SH

Room 3

Speakers   D5KP

Speaker Wire

Room 4

Speakers   D5KP

Speaker Wire

DIGITAL DELIVERY SYSTEM

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DIGITAL DELIVERY SYSTEM

1 SOURCE 4 ZONE WALL MOUNT HUB

NEW HOME AUDIO DISTRIBUTION

Entertainment Room

Source & Receiver

D5IP

Speakers   D5KP

Speaker Wire

Central Location

D5PS   D5SH

Kitchen

D5KP   Speakers

Speaker Wire

Dinning Room

Speakers   D5KP

Speaker Wire

Living Room

D5KP   Speakers

Speaker Wire

Start Here

✗ Determine the best location for the D5RH and all audio source equipment (CD player, radio tuner, iPod®, etc.)

✗ Run a Cat5 wire from each room (Zone) keypad location to the D5RH

✗ Run speaker wiring (16 gauge is recommended) from each keypad location to the corresponding speakers located in each room

✗ Be sure to label all wires for easy identification

✗ Turn off power to the D5RH (Switch located on the front)

1 Connect Audio Sources To D5RH – Options

A – Digital Coax Setup

For audio sources with a digital coax output, connect the digital coax output to the D5RH Digital Coax Input with a coaxial cable.

Set switch to the "COAX" position.

B – Digital Optical Setup

For audio sources with a digital optical output, connect the digital optical output to the D5RH Digital Optical Input with a optical cable.

Set switch to the "OPT" position.

C – Analog Setup (Source Inputs 3 & 4 only)

For audio sources with an analog audio output, connect the analog output to the D5RH RCA Input with a stereo RCA cable.

Set switch to the "RCA" position.

2 Connect & Mount IR Emitters

Connect the 3.5mm plug of each IR emitter into the designated port of the D5RH. The four IR ports labeled 1-4 are source specific. For example, IR port "1" must be mounted to the audio source connected to "source input 1". The "ALL IR OUT" port is constantly active, and passes IR information regardless of the source selected.

DIGITAL DELIVERY SYSTEM

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DIGITAL DELIVERY SYSTEM

3 Connect D5KP Keypads

A – Terminate RJ-45 Plugs On Both Ends

Using a Cat-5 cable stripper, remove about 1 - 1/2" of the jacket as shown above.

Untwist the twisted pair wires and arrange them in the order shown above.

Press all wires flat between your thumb and index fingers and cut the wires so they are 1/2" long as shown above.

Insert the arranged wires into the RJ-45 plug as shown above. The locking tab is facing down in this view.

Finally, crimp the connector using a standard RJ-45 crimping tool.

B – Connect RJ-45 Plugs On Both Ends

D5KP Rear   D5RH   Cat5

Using the RJ-45 plug on each end of the Cat5 cable, connect the "SYSTEM PORT" of the D5KP key pad to the correct "ZONE OUT" of the D5RH.

NOTE:

D5KP Rear   D5RH

For maximum audio performance over long wiring distances (over 150 ft) an additional 16 gauge, 2 conductor wire is recommended for extra power.

For all zones requiring extra power, connect the "AUX. POWER OUT" of the D5RH to the "POWER IN" of the D5KP. For more information consult your D5RH manual.

4 Connect Speakers To D5KP Keypads

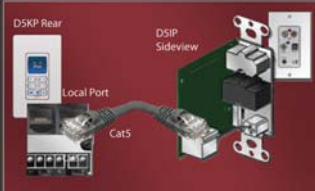D5KP Rear   Speaker Connector

Strip approximately 1/4" of insulation from both ends of all speaker wiring.

Twist the exposed end of the wire to ensure no loose strands remain. RJ-45 input of the D5IP.

Connect the positive speaker wire to the positive input of the speaker and negative speaker wire to each negative input of each speaker.

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5 Connect A Local Source To The Keypad (Optional)

D5KP Rear

DSIP Sideview

Local Port

Cat5

If a local audio source is desired, such as an iPod® a D5IP Source Input Wall Plate is required.

Terminate RJ-45 plugs on each end of the Cat5 as shown in step 3 A.Connect the "local port" of the D5KP to the RJ-45 input of the D5IP.

Connect the audio source to the D5IP.

For more information consult your D5RH manual.

6 Turn On Power to the D5RH (Front of D5RH)

7 Turn On and Start All Connected Audio Sources

8 Turn On All Zone Keypads (Front of D5KP – "PWR" button)

9 Verify Audio for Each Source

✗ Ramp volume up to the halfway point.

✗ Starting with source 1, select each source and verify that audio is present through the room speakers.

10 If Necessary, Adjust Source Input Gain for Analog Source Inputs 3 and 4

✗ There are two reasons that the Source Input Gain DIP switches may need to be adjusted:

– The volume levels of analog source inputs 3 & 4 are higher or lower than source inputs 1 & 2 – adjust the DIP switches up or down to boost or cut input level

– If there is noticeable distortion (clipping) coming from analog source 3 or 4, even at low volume levels - check the clip indicators on the back of the D5RH to verify clipping and flip the DIP switch to the down (default) position

11 For Additional Zones (Up to 28) Connect D5RH to the D5XH Expansion Router

D5RH

D5XH

Up to four expansion routers (D5X5) can be added to the D5RH to create additional zones. Each zone will require a D5KP Keypad and room speakers for full functionality. For more information consult your D5RH manual.

DIGITAL DELIVERY SYSTEM

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Start Here

This setup guide is intended for the D5SH and D5SH4 wall-mount Digital Distribution System. The D5SH is a single source distribution hub, the D5SH4 is a four source distribution hub. Each D5SH or D5SH4 requires one D5PS power supply. For ease of reading, the distribution hub will be referred to as the model D5SH.

✗ Determine the best location for the D5SH and all audio source equipment CD player, radio tuner, iPod®, etc.)

✗ Run Cat5 wire from each room (Zone) Keypad location to the D5SH

✗ Run speaker wiring (16 gauge is recommended) from each Keypad location to the corresponding speakers located in each room

✗ Be sure to label all wires for easy identification

1 Connect D5KP Keypad to D5SH Digital Distribution Hub.
Connect D5IP Input Plate to D5SH Digital Distribution Hub.

A – Terminate RJ-45 Plugs and Connect to "SYSTEM PORT" (D5KP side)
Terminate RJ-45 Plugs and Connect to D5IP

Using a Cat-5 cable stripper, remove about 1 - 1/2" of the jacket as shown above.

Untwist the twisted pair wires and arrange them in the order shown above.

Press all wires flat between your thumb and index fingers and cut the wires so they are 1/2" long as shown above.
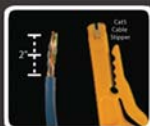
Insert the arranged wires into the RJ-45 plug as shown above. The locking tab is facing down in this view.
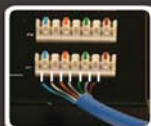
Finally, crimp the connector using a standard RJ-45 crimping tool.

B - Terminate 110 Punch-down from D5KP.
Terminate 110 Punch-down from D5IP.

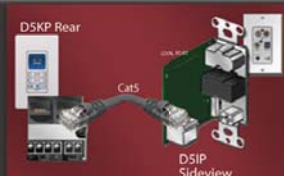Using a Cat-5 cable stripper, remove about 2-3" of the jacket.

Align the wires to the color coded 110-Punch-down. Blue/ White is the first wire to be installed.

Terminate the wires by using a Punch-down tool.

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![xantech logo]

If a local audio source is desired, such as an iPod ® a D5IP Source Input Wall Plate is required. Terminate RJ-45 plugs on each end of the Cat5 as shown in step 1A. Connect the "local port" of the D5KP to the RJ-45 input of the D5IP. Connect the audio source to the D5IP.
For more Information consult your D5IP manual

D5KP Rear

Cat5

D5IP
Sideview

NOTE: Connect D5KP Keypads

D5KP Rear

D5SH

D5SH4
DDS 4X4 HUB
24VDC POWER OUT

For maximum audio performance over long wiring distances (over 150ft) an additional 16 gauge, 2 conductor wire is recommend for extra power.

For all zones requiring extra power, connect the "24 VDC POWER OUT" of the D5SH to the "POWER IN" of the D5KP. For more information, consult the D5SH manual.

Connect Speakers To D5KP Keypads

D5KP Rear
Speaker Connector

1/4"

16AWG
Speaker Wire

To Speakers

Strip approximately 1/4" of insulation from both ends of all speaker wiring.

Twist the exposed end of the wire to ensure no loose strands remain.

Connect the positive speaker wire to the positive input of the speaker and negative speaker wire to each negative input of each speaker.

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DIGITAL DELIVERY SYSTEM

2 Connect Audio Sources To D5SH – Options

A – Digital Coax Setup

For audio sources with a digital coax output, connect the digital coax output to the D5IP Digital Coax Input with a coaxial cable.

Set switch to the "COAX" position.

DIGITAL COAX

Audio Source Coax Output

D5IP Front

Digital Coax Cable

B – Digital Optical Setup

For audio sources with a digital optical output, connect the digital optical output to the D5IP Digital Optical Input with a optical cable.

Set switch to the "OPT" position.

D5IP Front

Digital Optical Cable

DIGITAL OPTICAL

Audio Source Digital Optical Output

C – Analog Setup

For audio sources with an analog audio output, connect the analog output to the D5IP RCA Input with a stereo RCA cable.

Set switch to the "RCA" position.

Audio Source Analog Output

D5IP Front

Stereo RCA Patch Cable

D – Connect & Mount IR Emitters

Connect the 3.5 mm plug of each IR emitterinto the "IR OUT" on the D5IP. Place the IR Emitter head onto the source equipment connected to the respective D5IP.

IR Emitter

D5IP Front

CD

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3 Connect Power to the Digital Distribution System

A- Connect AC power cord to the D5PS Power Supply.

B- Connect the 24 VDC power cord from the D5PS Power Supply to the D5SH Digital Distribution Hub.

24VDC   D5PS   D5SH

4 Turn On and Start All Connected Audio Sources

5 Turn On All Zone Keypads (Front of D5KP – "PWR" button)

6 Verify Audio for Each Source
✗ Ramp volume up to the halfway point.

✗ D5SH4: Starting with Source 1, select each source and verify that audio is present through the room speakers.

✗ D5SH: See D5KP instruction manual to configure keypad for one source operation.

7 If Necessary, Adjust Source Input Gain for Analog Source Inputs

There are two reasons that the Source Input Gain DIP switches may need to be adjusted:

✗ The volume levels of analog source inputs are high adjust the DIP switches up or down to boost or cut input level

✗ If there is noticeable distortion (clipping) coming from analog source, even at low volume levels - check the clip indicators on the front of the D5IP to verify clipping and flip the DIP switch to the down (default) position

DIGITAL DELIVERY SYSTEM

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DIGITAL DELIVERY SYSTEM

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QUALITY IN CONTROL

40 YEARS

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2008 Digital Delivery System   PN#08008055