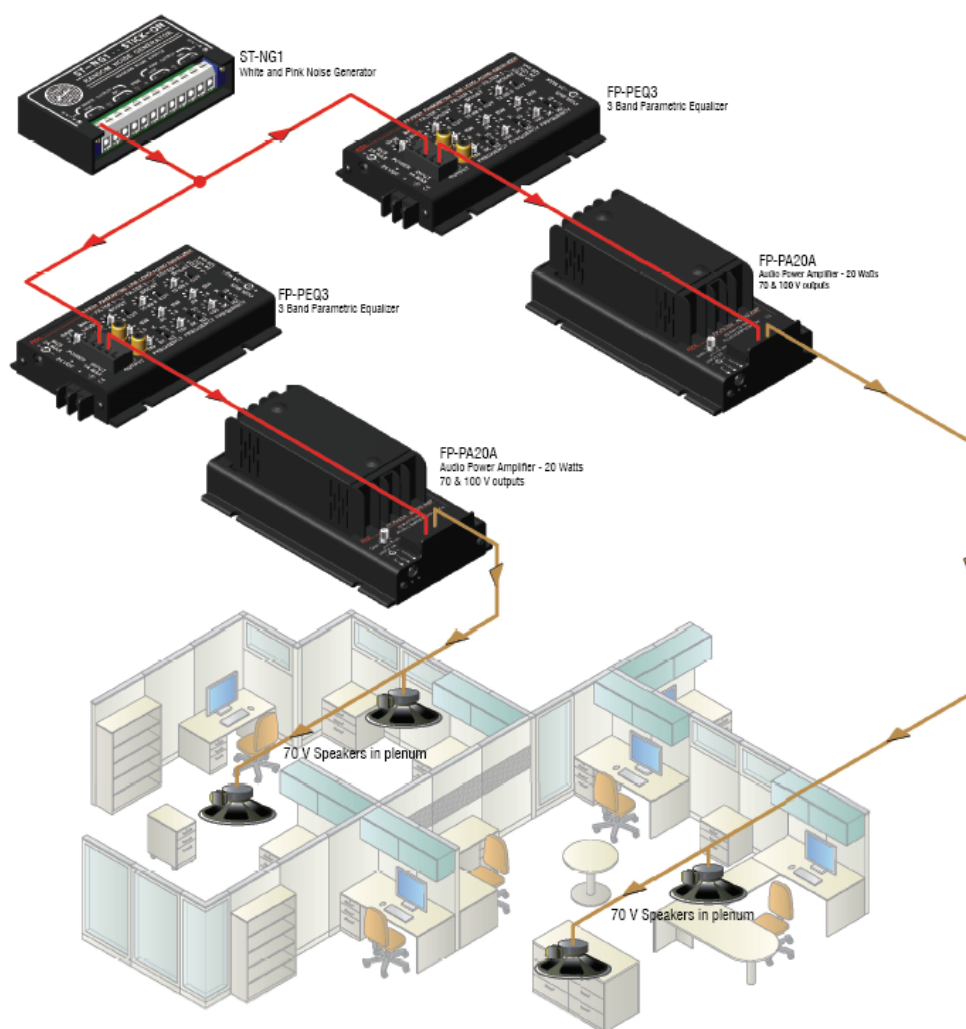




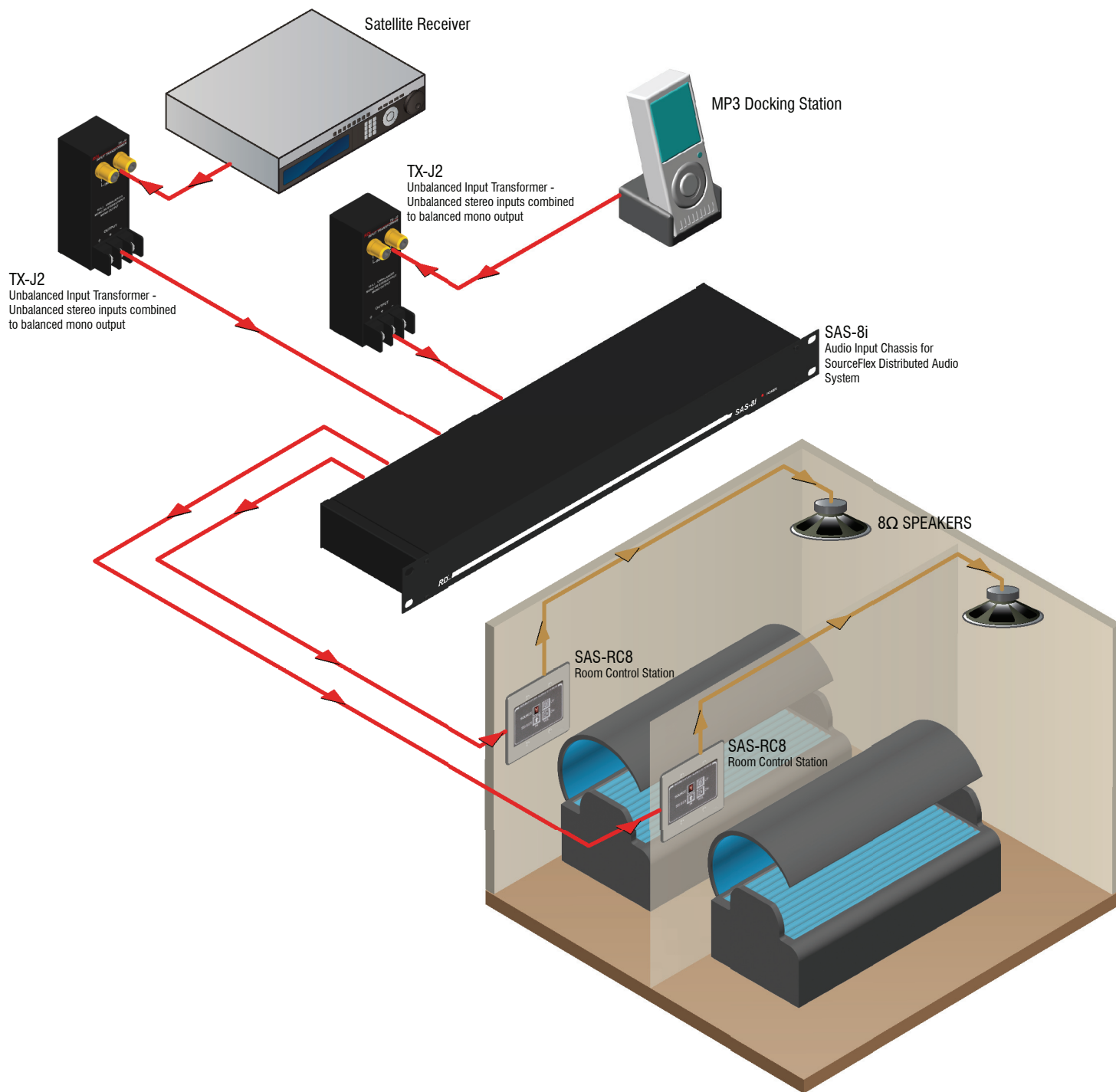
RDLのモジュールを使った応用例

店舗、学校、会議室、集会場の音響設備やセキュリティ・システム、マスキング・ノイズシステムにRDLのモジュールを使う設備例を紹介しています。



SOURCEFLEX SYSTEM - Two Zones

Two Room Tanning Salon

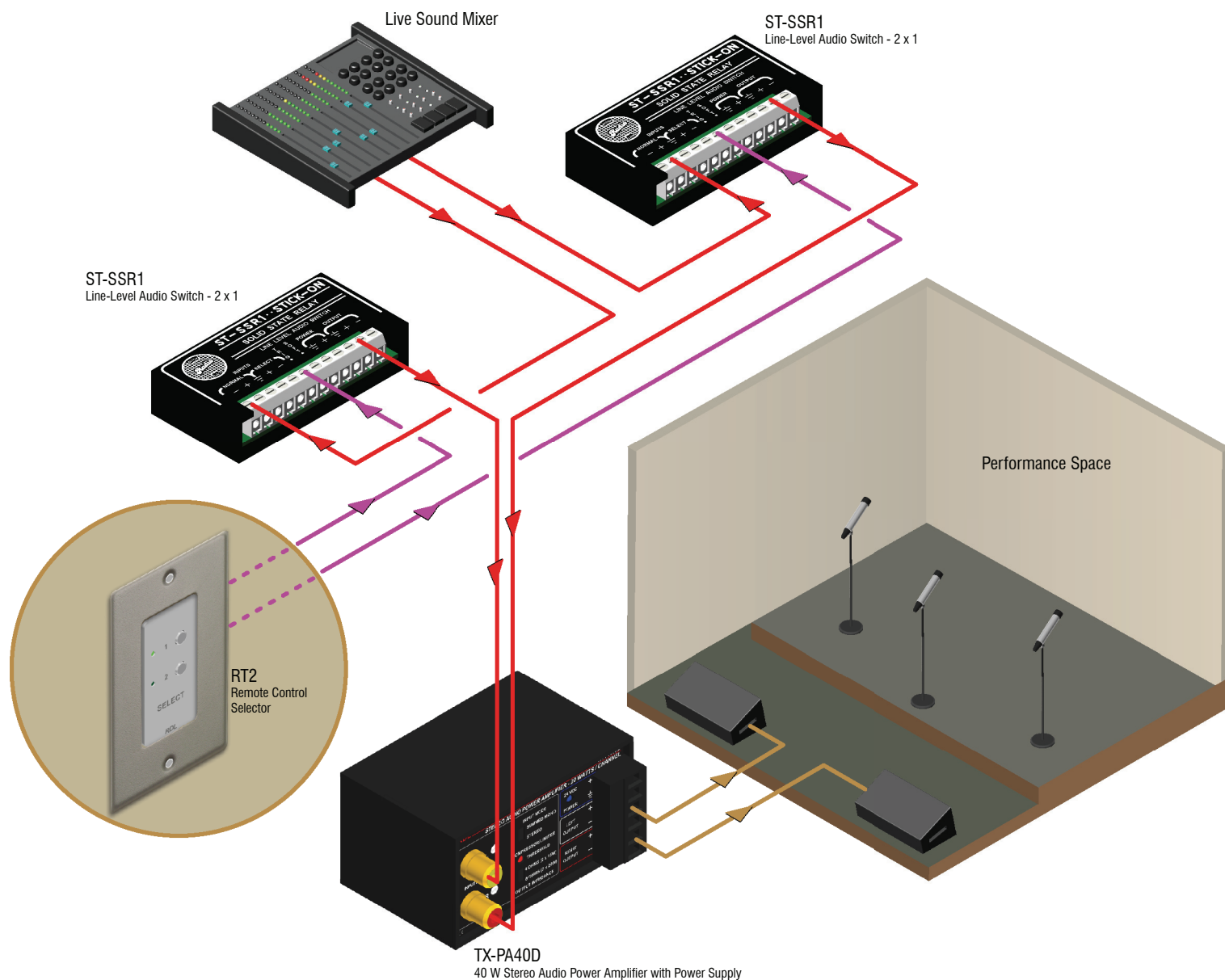


Description:

This application distributes program sources, typically music, to two (up to four) different zones using RDL's SourceFlex system. The stereo outputs from two separate audio sources are converted to balanced mono signals using two RDL TX-J2s. These signals feed SAS-8i SourceFlex Audio Input Chassis inputs. The SAS-8i allows the installer to set the maximum listening level at each station. Each tanning room has an SAS-RC8 Room Control Station that allows customers to select a program source and adjust the audio level. The system shown accommodates up to eight audio sources and supports up to four zones. Additional zones may be added using available RDL control modules.

MANUAL STAGE MONITOR NOISE REDUCTION

Remote Switching To Eliminate Unwanted Noise



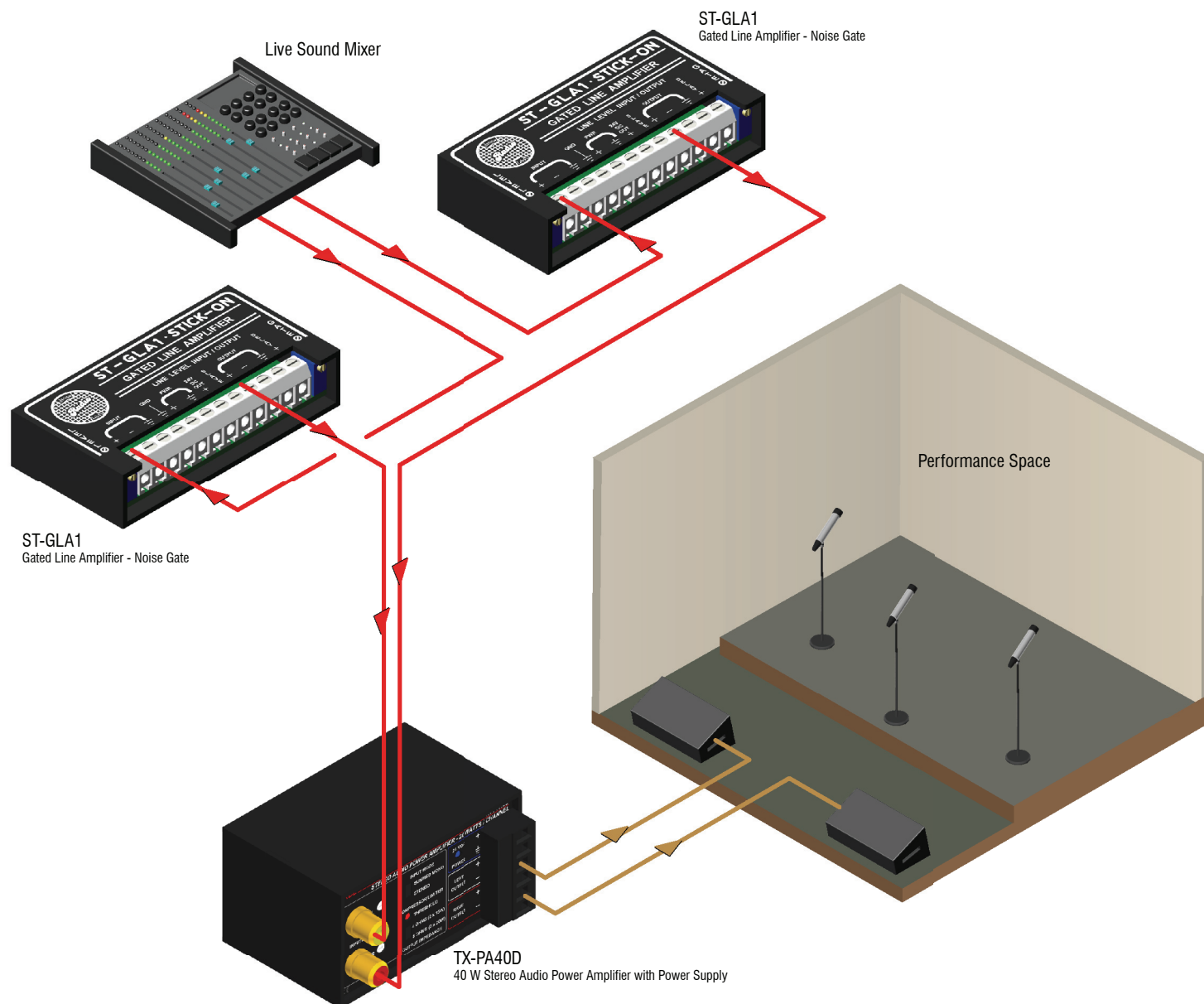
Description:

Audio monitor speaker signals often contain unwanted noise that is distracting to performers between musical selections or when the monitors are not in use. Examples include ambient pickup from live microphones or hum from instruments. During periods when it is desired to mute the monitors, users may manually turn them off using the RDL ST-SSR1 solid-state audio switch module (use 2 for stereo as shown). The RDL RT2 remote control may be mounted in any convenient location (such as podium or wall). The RT2 controls the ST-SSR1(s) to switch on and off the stage monitor feed as required. This application may be used to mute the audio inputs to power amplifiers feeding either fixed or portable monitor speakers. This application is ideal for church choir monitors or for any performance area using stage monitors.

The RDL TX-PA40D 40 W Stereo Audio Power Amplifier is shown in this system. RDL offers a wide range of power amplifiers for monitor and public address applications.

STAGE MONITOR AUTOMATIC NOISE REDUCTION

Automatic Muting To Eliminate Unwanted Noise



Description:

Audio monitor speaker signals often contain unwanted noise that is distracting to performers between musical selections or when the monitors are not in use. Examples include ambient pickup from live microphones or hum from instruments. During these periods when performers are not actively listening to the monitors, the RDL ST-GLA1 (use 2 for stereo as shown) mutes the audio signal to the monitor amplifier(s). The muting threshold is adjusted on the module to activate the audio for valid signal levels. The monitors will be muted at all other times. This application may be used in installations using either fixed or portable monitor speakers. It is ideal for church choir monitors or any performance area using stage monitors.

The RDL TX-PA40D 40 W Stereo Audio Power Amplifier is shown in this system. RDL offers a wide range of power amplifiers for monitor and public address applications.



RDL
Radio Design Labs

www.rdlnet.com

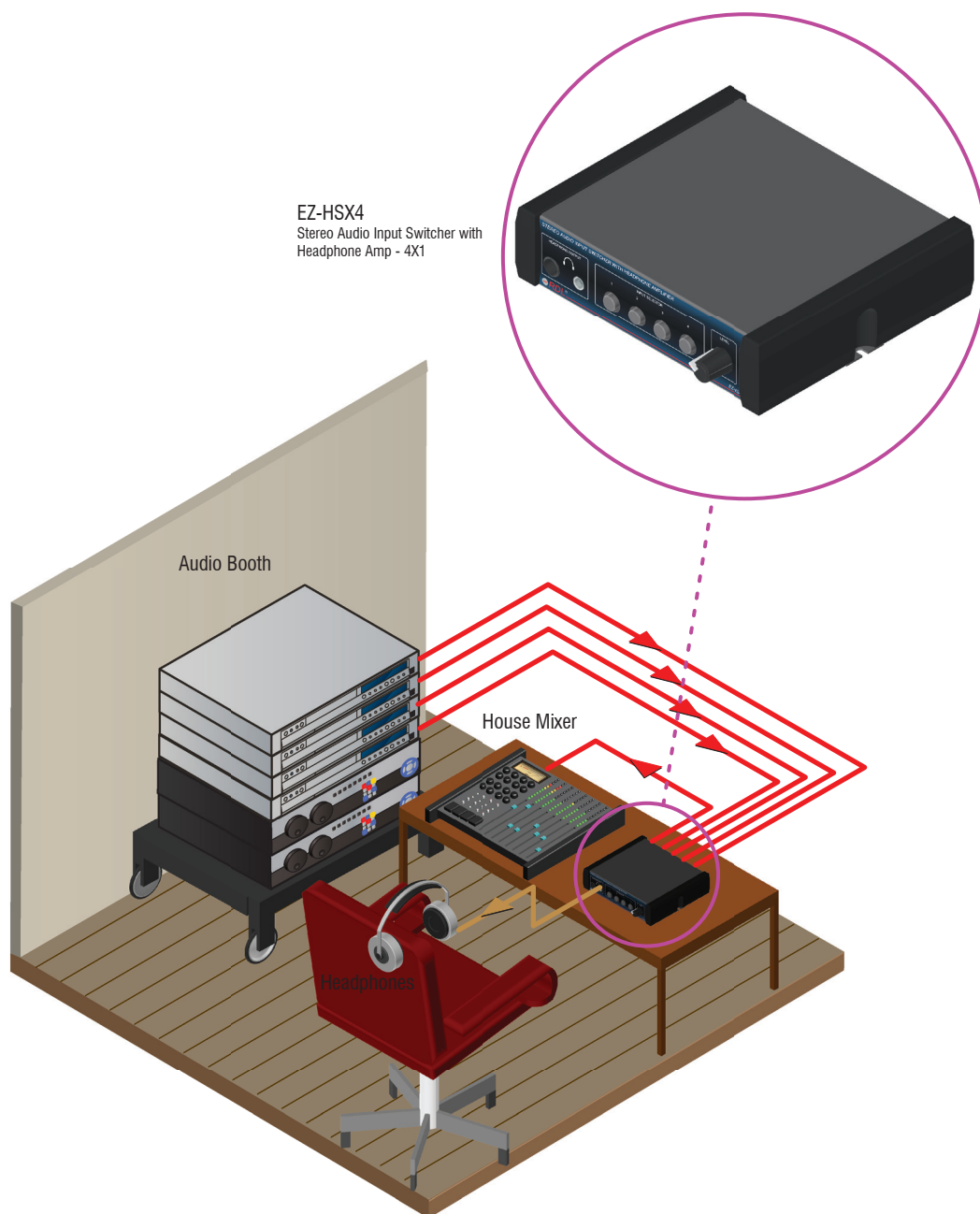
Parts List	
Product	QTY
ST-GLA1	2
TX-PA40D	1

Recommended Pwr. Supplies	
Product	QTY
PS-24AS 24 Vdc 500 mA	1
TX-PA40D POWER SUPPLY	1, Included

Line Color Key	
Red	Line Level Audio Signal
Blue	Loudspeaker Level
Purple	Control Signal
Yellow	Video
Green	Mic Level Audio Signal
Black	Ground
Brown	Power
Orange	Miscellaneous

AUDIO BOOTH WITH AUDITION / CUE CAPABILITIES

EZ-HSX4 Provides 4 Additional Audio Inputs to House Mixer



Description:

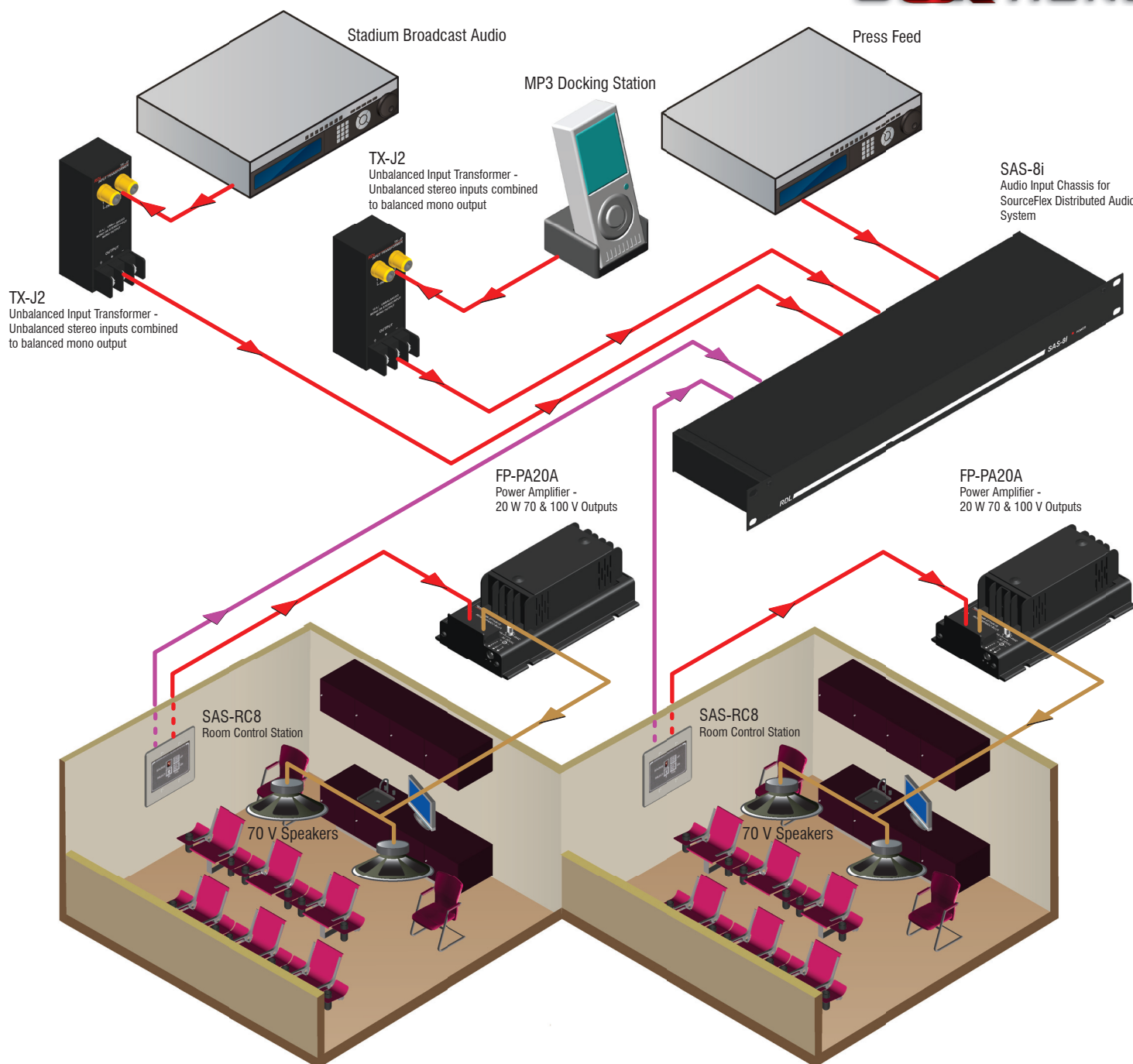
Live sound mixing often requires the use of recorded music or effects from tape, CD players, or other sources. Using the cue or solo options of the main mixer can result in inadvertent errors in the house mix. The EZ-HSX4 four input switcher provides a high quality headphone output which can be used for auditioning recorded audio sources. The EZ-HSX4 provides source selection between four additional audio sources without dedicating additional channels on the main mixer to sources that are seldom used. Any of the sources switched by the EZ-HSX4 can be cued or auditioned without operating the main mixer. This compact EZ series product will extend the functions of any live sound mixer.

The EZ-HSX4 is shipped with a high efficiency power supply that connects to a locking dc power jack.

SOURCEFLEX SYSTEM FOR ARENA BOX SEATING

Distributed Audio System Provides Source Selection In Multiple Zones

SYSTEMS SOLUTIONS AN-2007

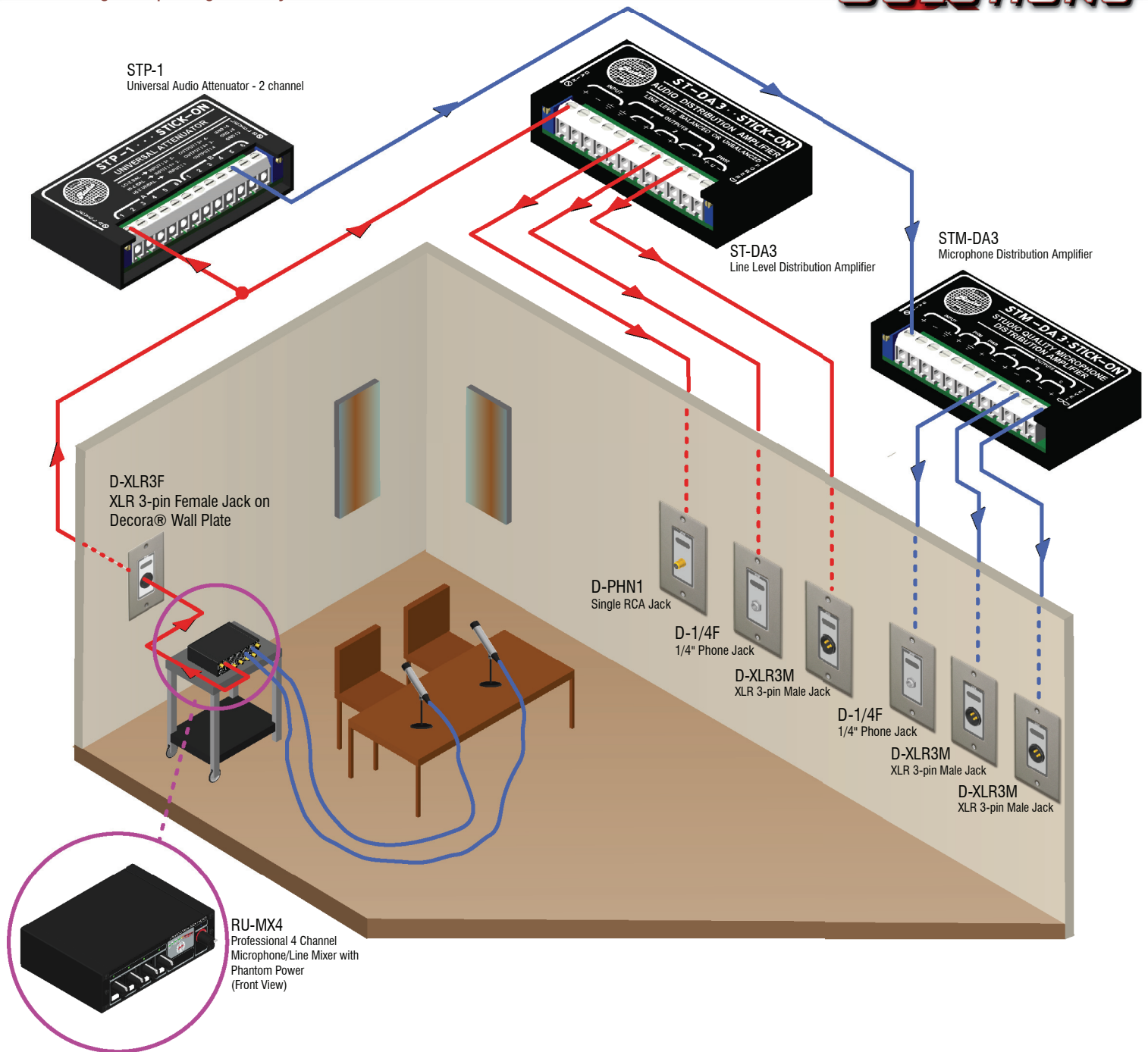


Description:

Attendees select the audio source and listening level in their seating box using a wall-mounted SAS-RC8 Room Control Station. Three sources are available for selection in each seating box: Stadium Broadcast Audio, MP3 music or the Press Feed. The SourceFlex system accommodates a maximum of 8 possible sources, plus one paging input. Mono sources are connected to the rack-mounted SAS-8i Audio Input Chassis. Stereo sources are converted to mono using RDL TX-J2 modules. All control, power and audio signals connect through a single wiring cable between each SAS-RC8 and the SAS-8i. A line-level output from each wall control is amplified by an FP-PA20A 20 Watt Power Amplifier to two or more 70 V loudspeakers. An internal amplifier in the SAS-RC8 may be used to drive 8 Ohm speakers in seating requiring up to 1.5 Watts. The SAS-8i supports a maximum of four separate seating box zones and provides connection of multiple expansion chassis: SAS-82 Two Station Controllers and SAS-8C Eight Station Controllers. There is no practical limit to the number of possible zones. SourceFlex wall controls are available in several styles to match any décor.

ISOLATED MEDIA FEEDS

Buffering Multiple High Quality Audio Feeds



Description:

Speeches, government meetings, product announcements and other media events are occasions where a number of reporters in the electronic press require a high quality audio feed from the event organizers. The recording equipment in use might require a mic, balanced line level or unbalanced line-level signal. It is critical that each feed is isolated so that if one feed is accidentally shorted or back-fed, no other feed will be affected nor will the public address system. This example uses RDL STICK-ONS® to provide isolated audio output signals driving a variety of audio jacks on a "Media Panel." An RDL RU-MX4 Pro 4-Input Mixer is used as the audio source. The line-level source is distributed through an ST-DA3 Audio Distribution Amplifier to line-level outputs on RCA, 1/4" phone, and XLR jacks. The same source is padded down to mic level using an STP-1 Attenuator and distributed through an STM-DA3 Microphone Distribution Amplifier to the mic outputs. All jacks shown are on Decora® wall plates. These jacks are available in the RDL AMS series should a rack or tabletop mount be preferred. Distribution of video at these events can also be added using RDL composite and VGA/XGA distribution amplifiers.

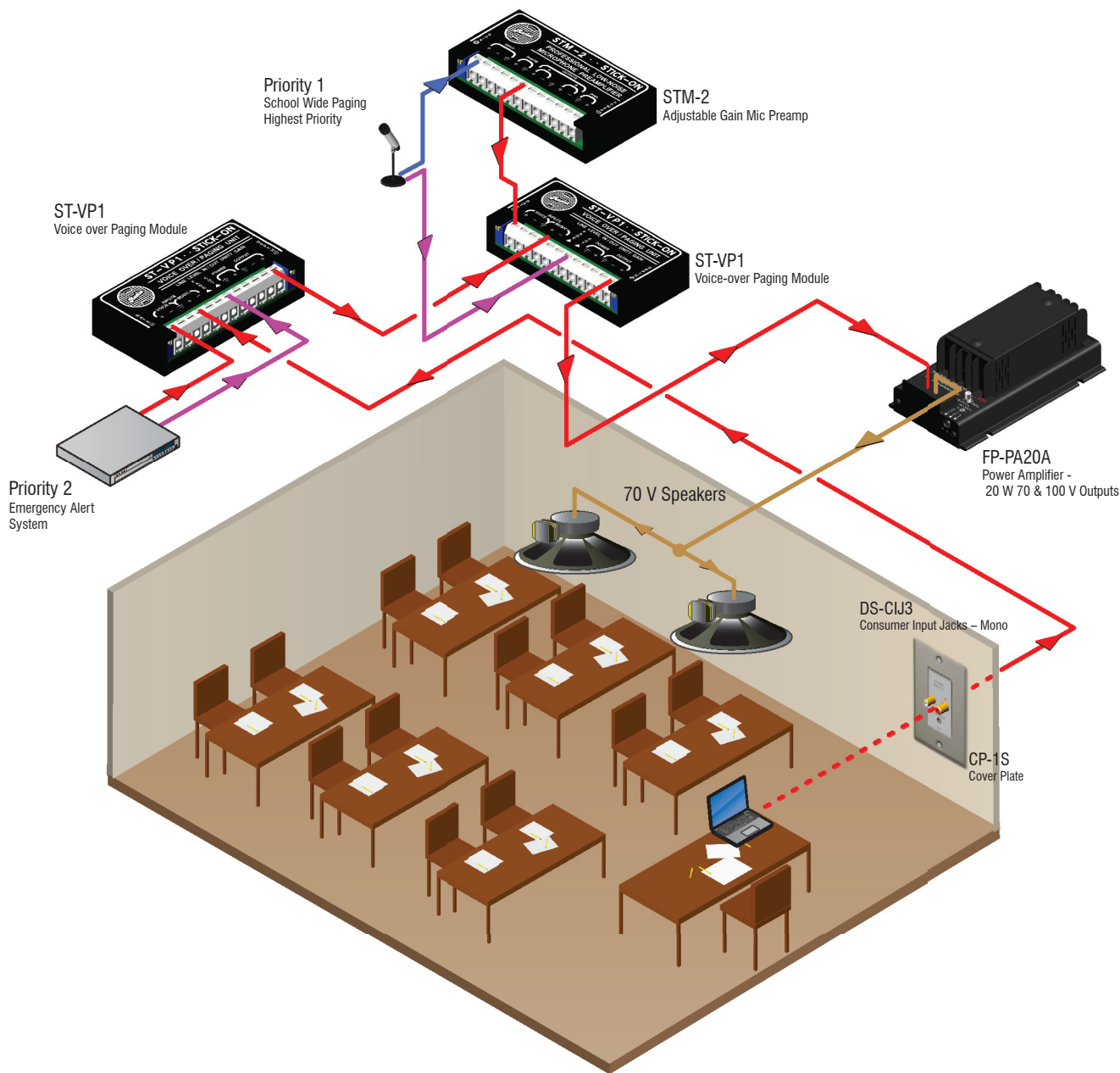
Parts List	
Product	QTY
D-PHN1	1
D-XLR3F	1
D-XLR3M	3
D-1/4F	2
RU-MX4	1
ST-DA3	1
STM-DA3	1
STP-1	1

Recommended Pwr. Supplies	
Product	QTY
PS-24AS 24 Vdc 500 mA	2

Line Color Key	
—	Line Level Audio Signal
—	Loudspeaker Level
—	Control Signal
—	Video
—	Mic Level Audio Signal
—	Ground
—	Power
—	Miscellaneous

PRIORITIZED PAGING

Voice-Over/Paging with Multiple Paging Sources



Description:

In this application several RDL modules are used to create a multiple priority paging system. A local audio source can be overridden by an Emergency Alert System (EAS). Either source is overridden by the School Wide Paging source.

The local source from the laptop is fed into a DS-CIJ3 input plate to provide a balanced mono output to the "Music" input of an ST-VP1 Voice-Over Paging Module and passes thru the unit under normal operating conditions. The EAS line level audio is fed to the "Voice" input on the ST-VP1. A contact closure from the EAS receiver causes the ST-VP1 to switch from the "Music" audio input to the "Voice" audio input.

The output of the first ST-VP1 will feed the "Music" input of a second ST-VP1 to allow override by the highest priority source. An RDL STM-2 mic preamp provides the line level signal to the "Voice" input of the second ST-VP1. PTT contacts switch from the "Music" input to the "Voice" input to give this microphone the highest priority. The output of the second ST-VP1 feeds RDL's FP-PA20A 70 V amplifier and associated 70 V loudspeakers.



RDL
Radio Design Labs

www.rdlnet.com

Parts List

Product	QTY
DS-CIJ3	1
FP-PA20A	1
STM-2	2
ST-VP1	2

Recommended Pwr. Supplies

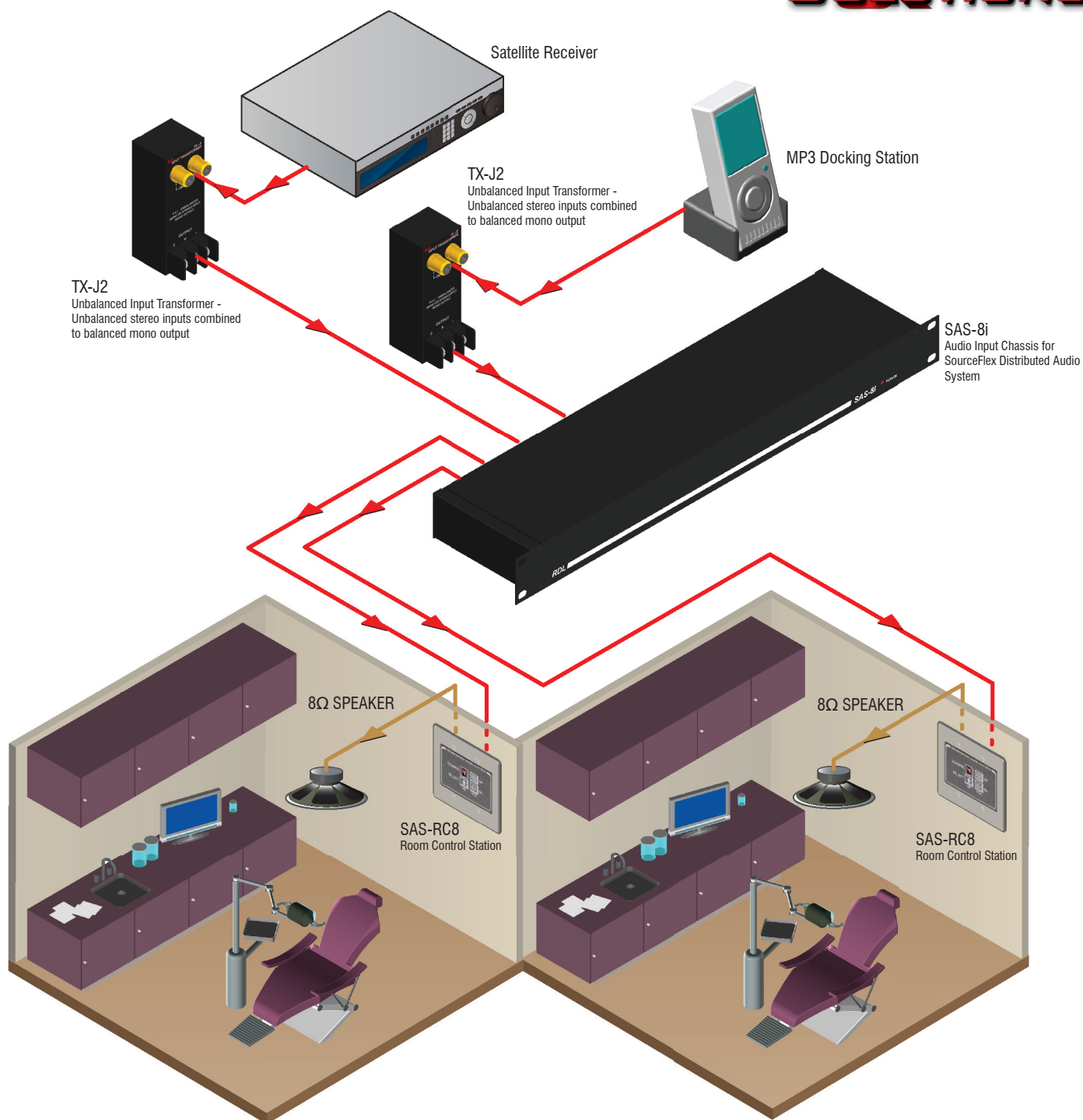
Product	QTY
PS-24AS 24 Vdc 500 mA	1
PS-24U2A 24 Vdc 2 A	1

Line Color Key

Red	Line Level Audio Signal
Blue	Loudspeaker Level
Purple	Control Signal
Yellow	Video
Green	Mic Level Audio Signal
Black	Ground
Brown	Power
Orange	Miscellaneous

SOURCEFLEX SYSTEM - Two Zones

Two Chair Dental Office



Description:

The expandable SourceFlex audio system provides distribution of up to 8 audio sources to multiple locations (or zones) throughout a facility. Source selection and audio level for each zone are controlled by the SAS-RC8.

In this system, two sources are being distributed to two different patient rooms in a dental office. The stereo outputs from two separate audio sources (satellite receiver & MP3 player) are converted to balanced mono signals using two RDL TX-J2s. The mono source signals are fed into the inputs of the SourceFlex Audio Input Chassis (SAS-8i). Each room in the dental office has a wall control station (SAS-RC8), which also provides power for a local speaker. Only one cable run is needed between each control station and the SAS-8i Audio Input Chassis for control and electrical power.



RDL
Radio Design Labs

www.rdlnet.com

Parts List	
Product	QTY
SAS-8i	1
SAS-RC8	2
TX-J2	2

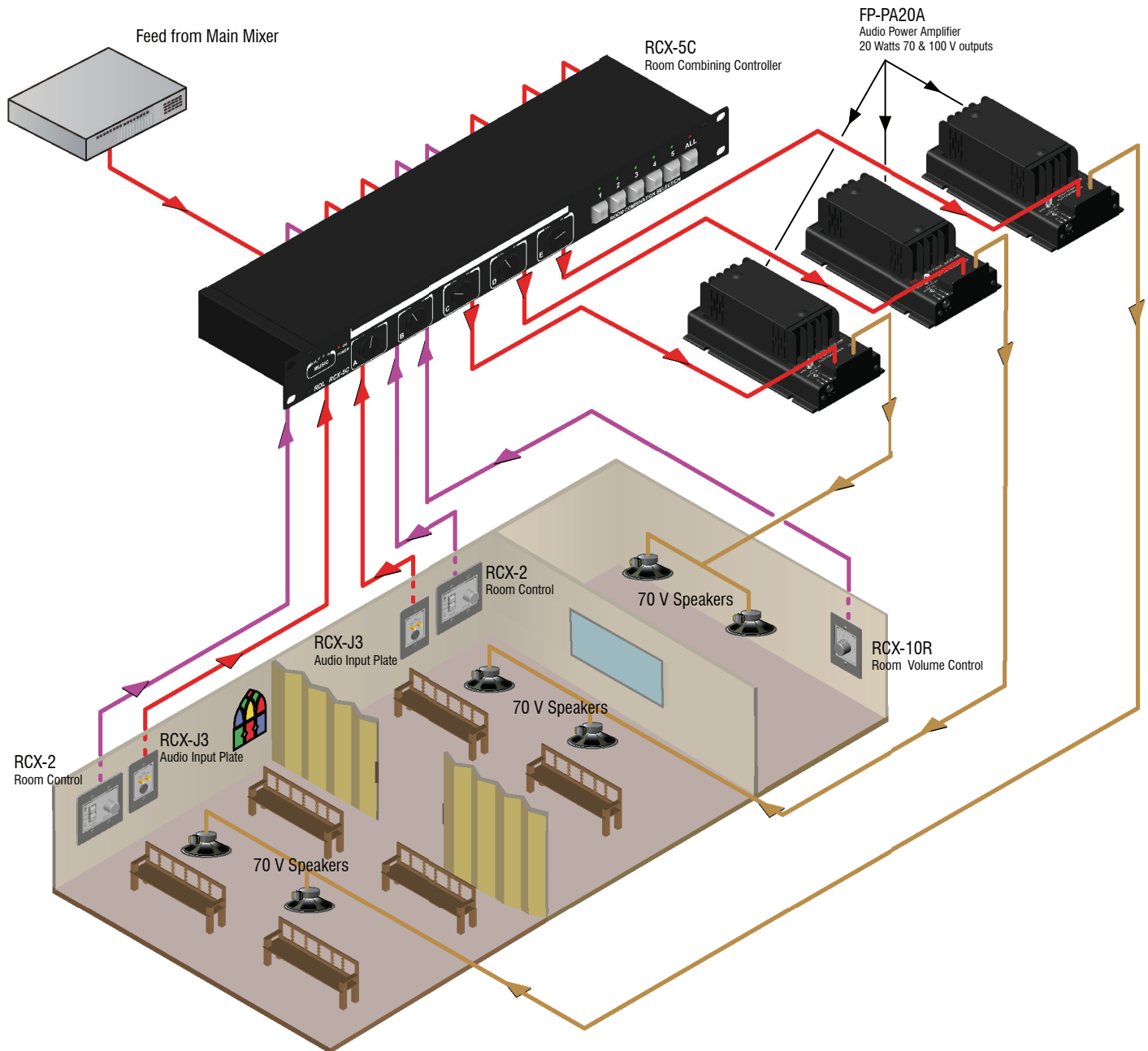
Recommended Pwr. Supplies	
Product	QTY
PS-24U2 24 Vdc 2 A	1

Line Color Key	
—	Line Level Audio Signal
—	Loudspeaker Level
—	Control Signal
—	Video
—	Mic Level Audio Signal
—	Ground
—	Power
—	Miscellaneous

BASIC THREE ROOM COMBINING SYSTEM

Room Combining System with Volume Control

SYSTEMS SOLUTIONS AN-2012



Description:

The RCX Room Combining System allows between two and five separate audio systems to act independently, be combined as one complete system, or be combined in multiple combinations.

Shown in this House of Worship example are three multi-use rooms that are adjacent to the main sanctuary. Each room has its own amplifier system using the RDL FP-PA20A amplifier. Two rooms have local audio sources connected to the RCX-J3 audio input plates. The output of the sanctuary mixer is also fed to the RCX-5C. Two of the rooms are divided with air-walls (retractable walls) which, when removed, create a single larger area. When the rooms combine, so must their associated audio systems. Source selection and audio level control is provided by the RCX-2 room controllers. The third space, separated by a solid wall, does not have a local input plate and only requires audio level control (RCX-10R). The RCX-5C System Controller manages the local input(s) and sanctuary mixer audio allowing the independent audio systems and room controllers to sync up for combined functions or remain separate for independent functions.

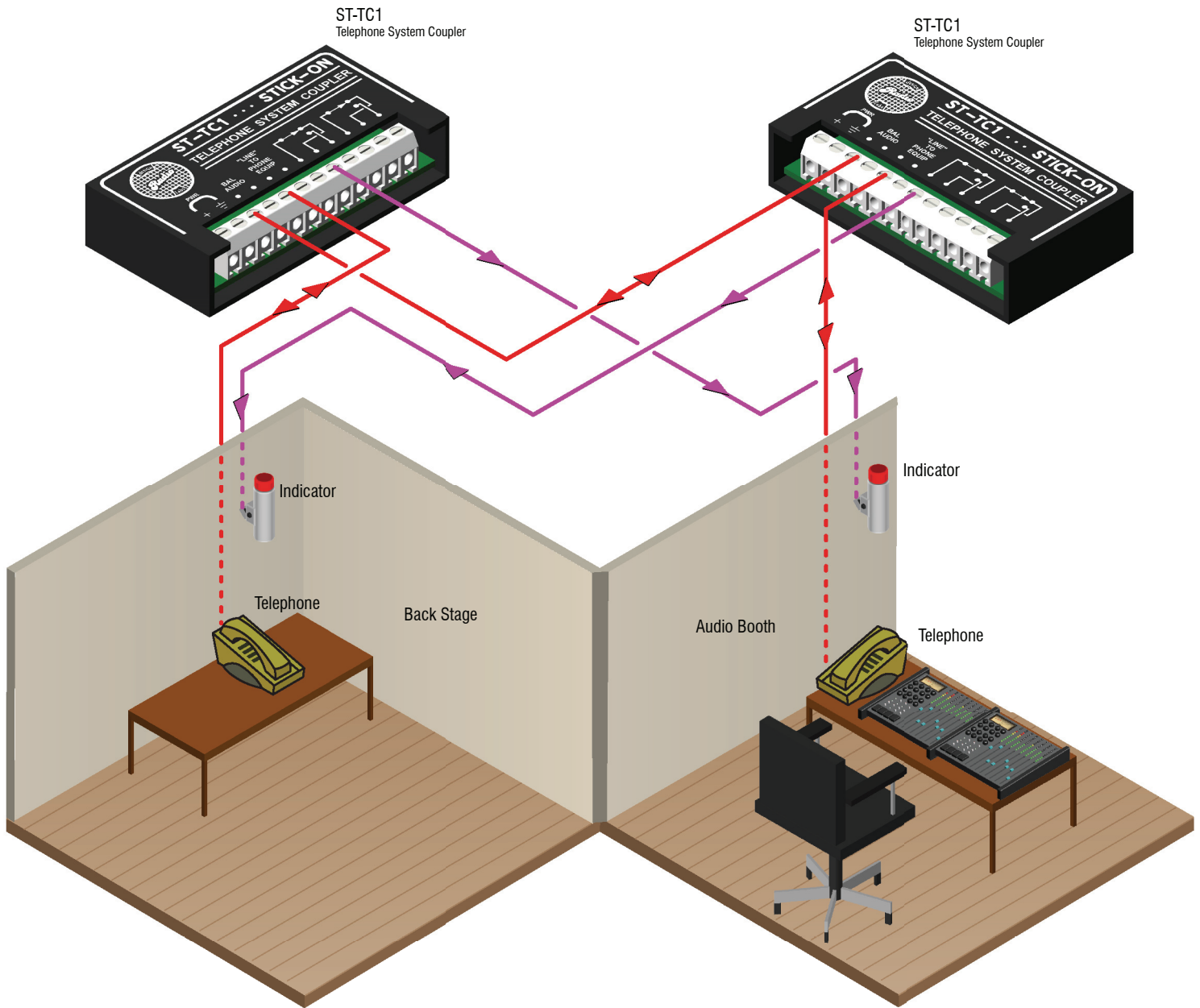
Parts List	
Product	QTY
FP-PA20A	3
RCX-2	2
RCX-5C	1
RCX-10R	1
RCX-J3	2

Recommended Pwr. Supplies	
Product	QTY
PS-24U2A 24 Vdc 2000 mA	4

Line Color Key	
Red	Line Level Audio Signal
Brown	Loudspeaker Level
Purple	Control Signal
Yellow	Video
Blue	Mic Level Audio Signal
Green	Ground
Orange	Power
Black	Miscellaneous

INTERCOM USING TWO STANDARD TELEPHONES

Visual Call Indicator Ideal for Stage or House of Worship Intercom



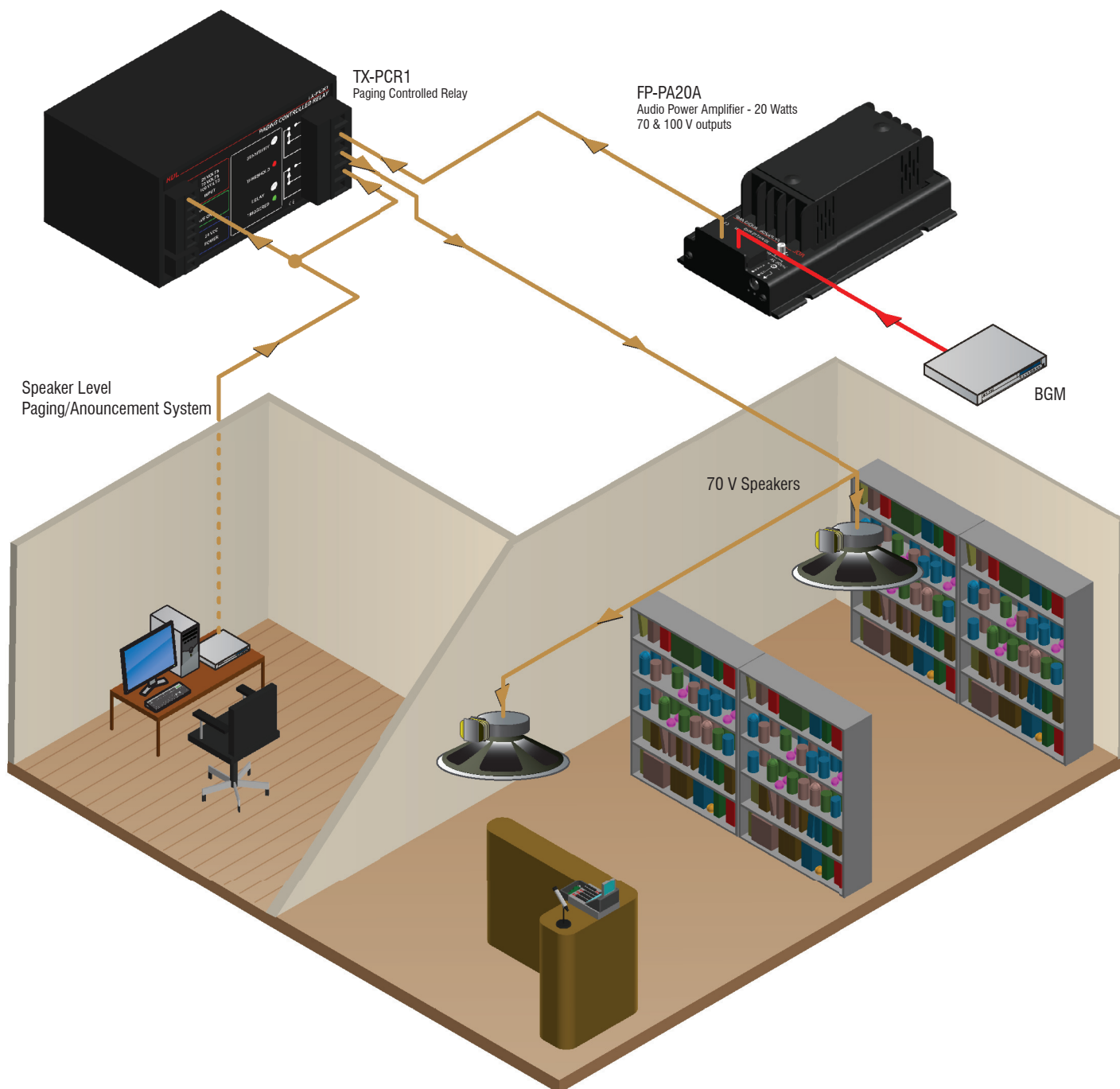
Description:

This application shows a pair of ST-TC1 Telephone System Couplers used for handset communication in a theatre. The ST-TC1 provides “battery” for powering a standard telephone instrument, a circuit for detecting “off hook” condition, a transformer-coupled output, and DPDT relay contacts that switch when “off hook” is detected. These features may be used to develop a “silent ring” intercom system for use in stage, studio and house of worship environments where an audible ring is not acceptable. Each telephone instrument requires a single ST-TC1. A twisted pair cable connects audio between the two modules. Additional pairs carry the annunciation (lamp, flasher, etc.) actuation closure. The annunciation device is active whenever the opposite phone is “off hook”. Six conductors (3 pairs) are required to connect the two locations. Cat5 cable may be used in which case the fourth pair may be used to carry 24 Vdc power between modules if they are not co-located.

COMMERCIAL PRIORITY PAGING SYSTEM

Facility-wide Paging Interrupts Background Music System

SYSTEMS SOLUTIONS AN-2014



Description:

This system demonstrates how an auxiliary 70 V paging system can override the loudspeakers from a local 70 V background music system (BGM) using the TX-PCR1 Paging Controlled Relay.

In normal operation, the BGM 70 V speaker line will route through the normally closed contacts of the TX-PCR1 to the local 70 V loudspeakers. The auxiliary 70 V system (in this case the Paging/Announcement System) feeds both the 70 V input and the normally open contacts on the relay unit (TX-PCR1). When a signal is present on the auxiliary 70 V line, the relay unit senses the signal and throws the DPDT relay routing the auxiliary amplifier to the local loudspeakers.

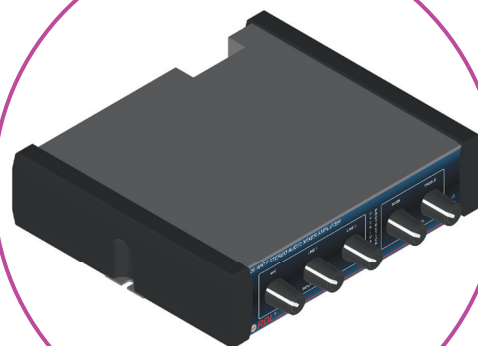
BASIC CLASSROOM W/ INTEGRATED MIXER AMPLIFIER ON AV CART

Microphone, Laptop Audio, DVD Player, 20 Watt Mixer Amplifier

SYSTEMS SOLUTIONS

AN-2015

EZ-MXA20
EZ-MXA20 20 Watt Stereo Audio
Mixer Amplifier with Tone Controls



Description:

The EZ-MXA20 provides a microphone preamp, mixer, limiter, tone control, and a stereo power amplifier in a package less than six inches wide. The EZ-MXA20 handles sound reinforcement whether the audio source is a computer, DVD player, live presenter, or all three. The power amplifier provides 10 Watts per channel into 8 Ohm speakers or 8 Watts per channel into 4 Ohm speakers. Bass and treble tone controls provide equalization of source material. The limiter controls overloads from clipping the amplifier and an LED on the front panel of the EZ-MXA20 indicates when the limiter is active.



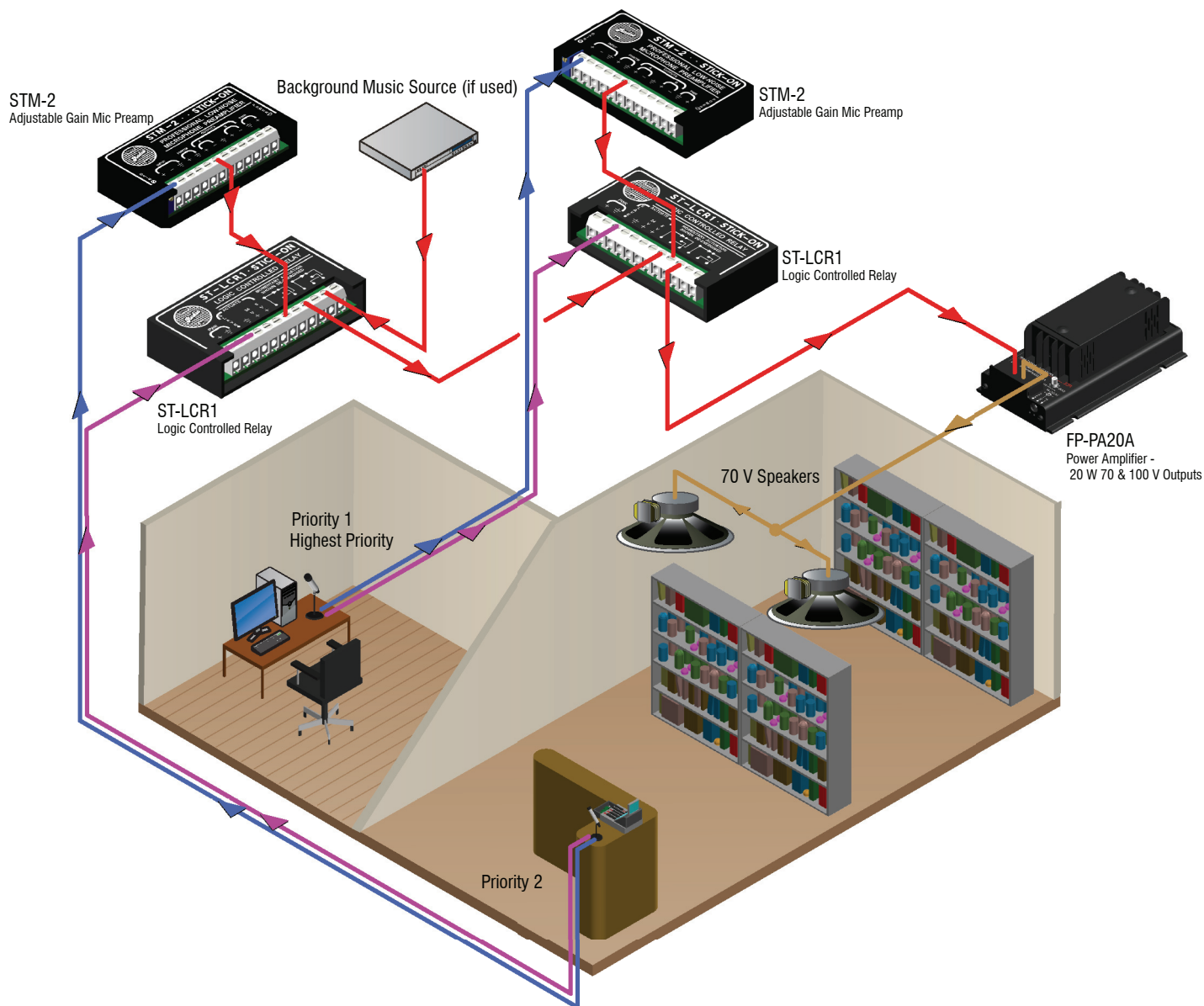
RDL
Radio Design Labs

www.rdlnet.com

Parts List	
Product	QTY
EZ-MXA20	1

Recommended Pwr. Supplies	
Product	QTY
EZ POWER SUPPLY	1, included

Line Color Key	
—	Line Level Audio Signal
—	Loudspeaker Level
—	Control Signal
—	Video
—	Mic Level Audio Signal
—	Ground
—	Power
—	Miscellaneous



Description:

This application provides multiple paging locations, with priority assigned to each location. Each location has a mic with a PTT (push-to-talk) momentary pushbutton that provides external switching contacts. The STM-2 preamp for each microphone should be installed near the associated mic. Wiring between each STM-2 output and the corresponding ST-LCR1 is balanced, connected with shielded or unshielded twisted-pair cable. When a PTT button associated with a microphone is depressed, the music fades down and paging becomes active. The highest priority mic overrides the lower priority mic(s). This arrangement may be carried out for an unlimited number of paging locations. If the background music source provides only unbalanced outputs, an STA-1M Audio Line Amplifier may be used to provide a balanced signal at the proper level.

If solid state switching is preferred, an ST-SSR1 Solid State Audio "Relay" may be substituted for each ST-LCR1.

The FP-PA20A 20 Watt Power Amplifier feeding 70 Volt speakers is used in this example. RDL offers a wide range of power amplifiers for paging and public address applications.

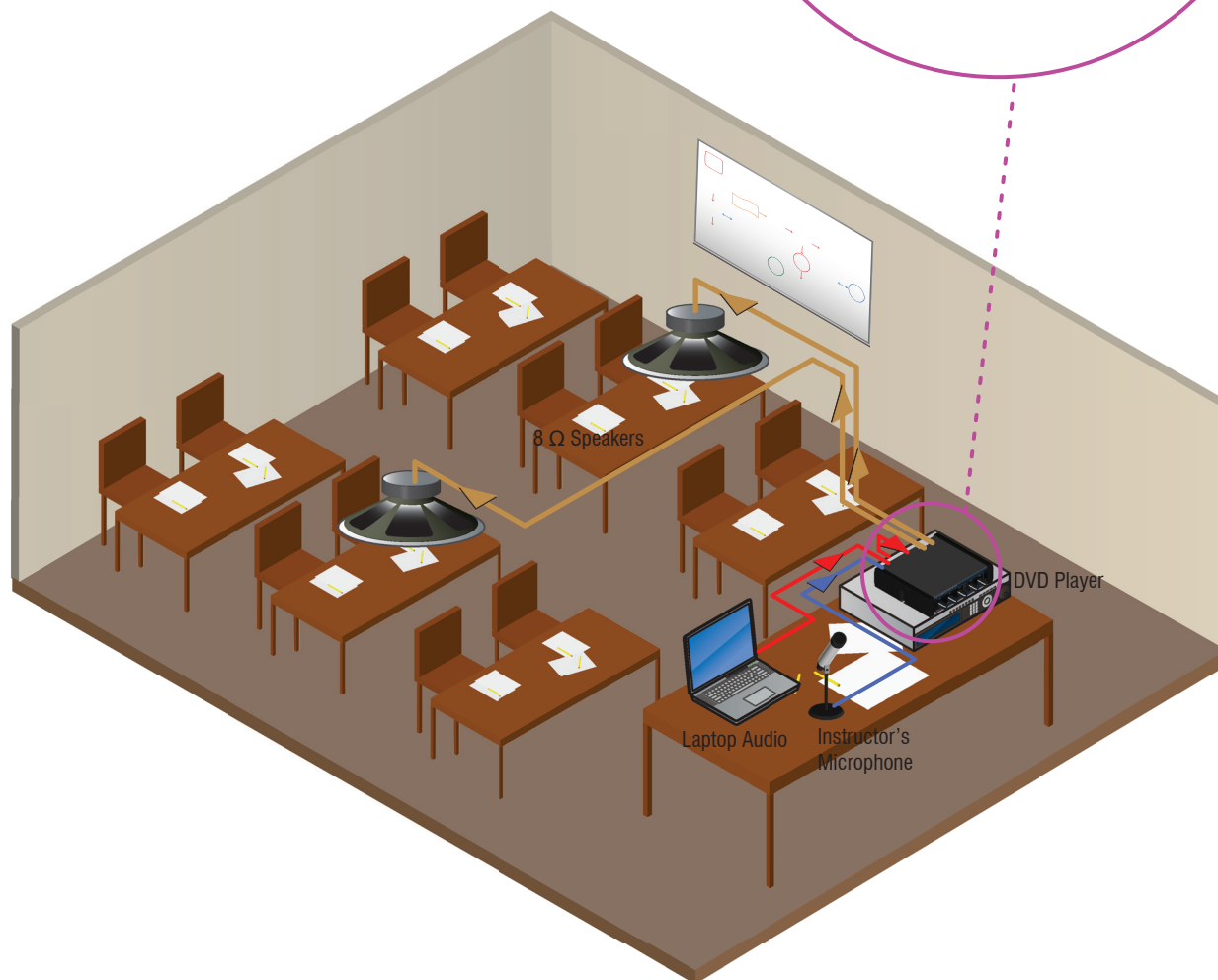
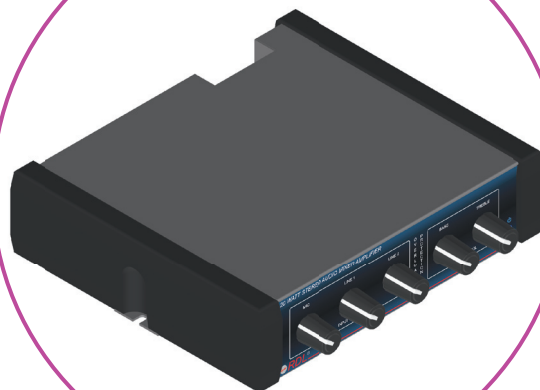
BASIC CLASSROOM WITH INTEGRATED MIXER AMPLIFIER

Microphone, Laptop Audio, DVD Player, 20 Watt Mixer Amplifier

**SYSTEMS
SOLUTIONS**

AN-2017

EZ-MXA20
EZ-MXA20 20 Watt Stereo Audio
Mixer Amplifier with Tone Controls



Description:

The EZ-MXA20 provides a microphone preamp, mixer, limiter, tone control, and a stereo power amplifier in a package less than six inches wide. The EZ-MXA20 handles sound reinforcement whether the audio source is a computer, DVD player, live presenter, or all three. The power amplifier provides 10 Watts per channel into 8 Ohm speakers or 8 Watts per channel into 4 Ohm speakers. Bass and treble tone controls provide equalization of source material. The limiter controls overloads from clipping the amplifier and an LED on the front panel of the EZ-MXA20 indicates when the limiter is active.



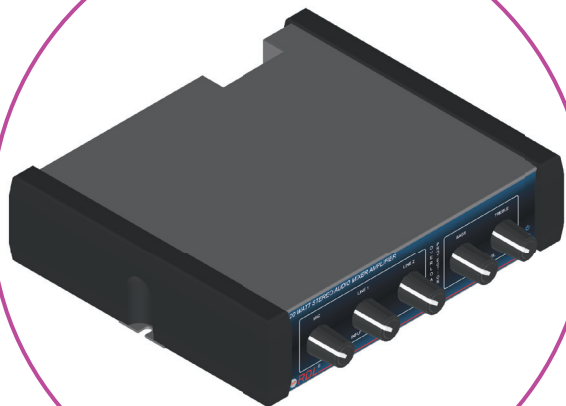
RDL
Radio Design Labs

www.rdlnet.com

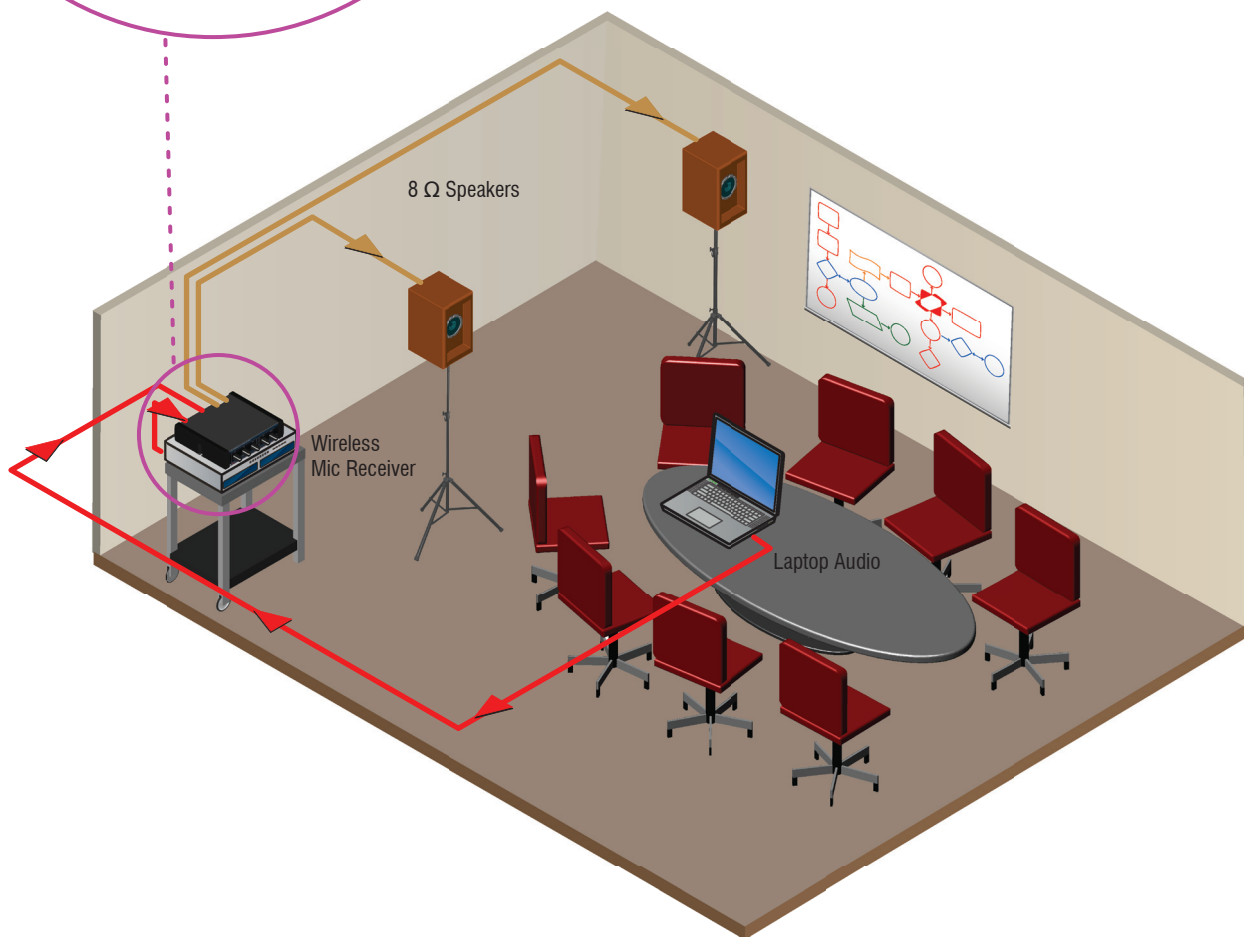
Parts List	
Product	QTY
EZ-MXA20	1

Recommended Pwr. Supplies	
Product	QTY
EZ POWER SUPPLY	1, included

Line Color Key	
Red	Line Level Audio Signal
Brown	Loudspeaker Level
Purple	Control Signal
Yellow	Video
Blue	Mic Level Audio Signal
Green	Ground
Black	Power
Orange	Miscellaneous



EZ-MXA20
EZ-MXA20 20 Watt Stereo Audio
Mixer Amplifier with Tone Controls



Description:

The EZ-MXA20 provides a microphone preamp, mixer, limiter, tone control, and a stereo power amplifier in a package less than six inches wide. The EZ-MXA20 handles sound reinforcement whether the audio source is a computer, CD player, live presenter or all three. The power amplifier provides 10 Watts per channel into 8 Ohm speakers or 8 Watts per channel into 4 Ohm speakers. Bass and treble tone controls provide equalization of source material. The limiter controls overloads from clipping the amplifier and an LED on the front panel of the EZ-MXA20 indicates when the limiter is active.



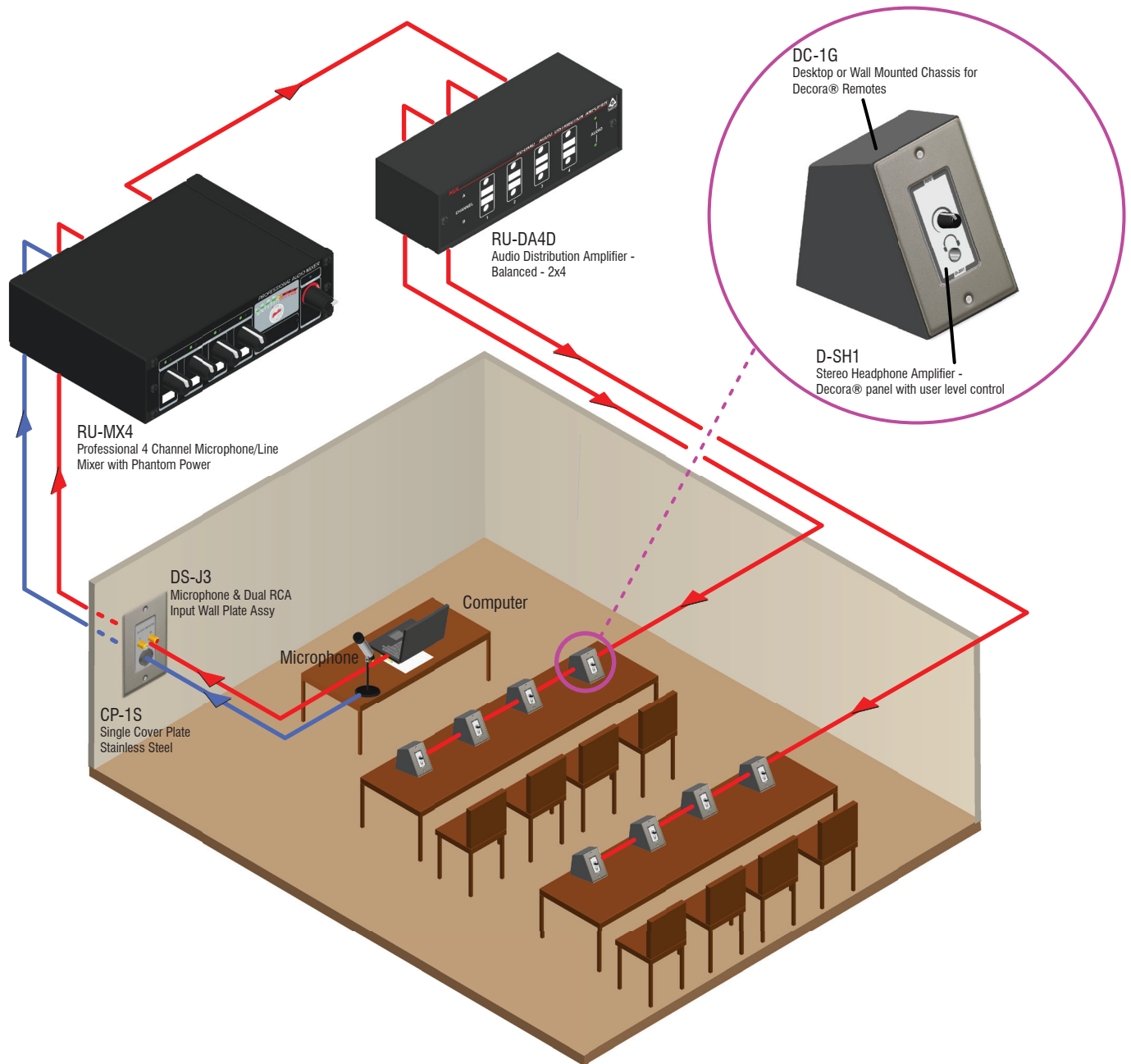
RDL
Radio Design Labs

www.rdlnet.com

Parts List	
Product	QTY
EZ-MXA20	1

Recommended Pwr. Supplies	
Product	QTY
EZ POWER SUPPLY	1, included

Line Color Key	
Red	Line Level Audio Signal
Blue	Loudspeaker Level
Green	Control Signal
Yellow	Video
Purple	Mic Level Audio Signal
Black	Ground
Brown	Power
Orange	Miscellaneous



Description:

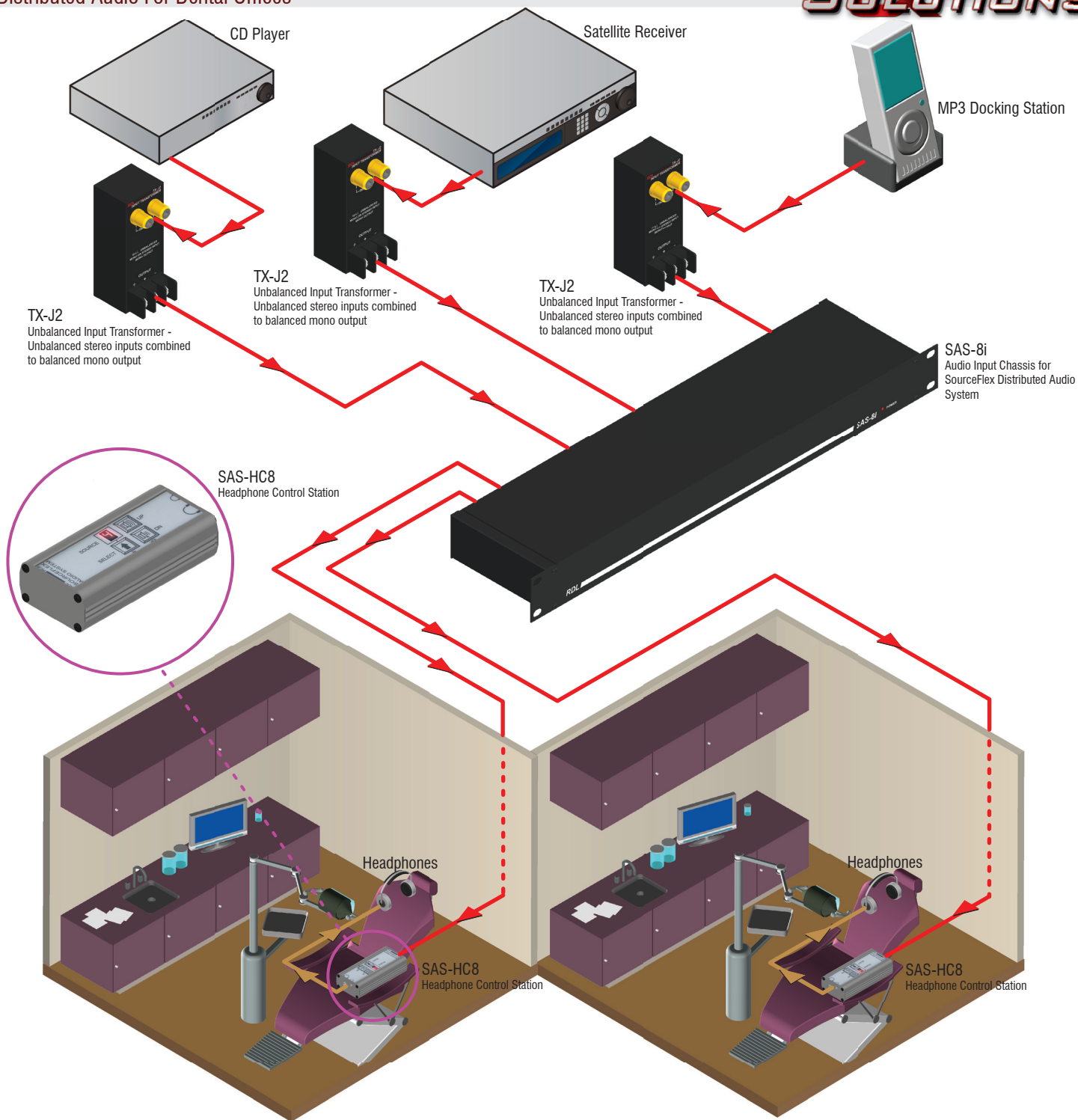
In this system, a computer audio signal and a microphone signal are mixed using the RU-MX4 Pro Audio Mic/Line Mixer. The mixed signal is distributed to multiple headphone listening stations in a language learning lab using an RU-DA4D Audio Distribution Amplifier. Each listening station features a D-SH1 stereo headphone amplifier, which includes an integrated level control. Each D-SH1 is mounted in a DC-1G desktop chassis. The DC-1G is constructed from steel and powder coated to provide years of durability in a classroom environment.

The design of the D-SH1 headphone amplifier makes it easy to create systems with an unlimited number of headphone listening stations. Either 1/4" or 1/8" (D-SH1M) stereo headphone jack options are available. The system design is shown in mono but stereo configurations can be implemented just as easily.

SOURCEFLEX SYSTEM FOR DENTAL CHAIRS

Distributed Audio For Dental Offices

SYSTEMS SOLUTIONS AN-2020



Description:

Patients select the audio source and listening level in the dental chair using an SAS-HC8 Headphone Control Station. Three sources are available for selection in each dental chair location: CD player music, Satellite music or MP3 music. The SourceFlex system accommodates a maximum of 8 possible audio sources, plus one paging input. The stereo audio sources are converted to mono using RDL TX-J2 modules and connected to the rack-mounted SAS-8i Audio Input Chassis. All control, power and audio signals connect through a single wiring cable between each SAS-HC8 and the SAS-8i. The SAS-8i supports a maximum of four separate dental chairs and provides connection of multiple expansion chassis: SAS-82 Two Station Controllers and SAS-8C Eight Station Controllers. There is no practical limit to the number of possible zones.



RDL
Radio Design Labs

www.rdlnet.com

Parts List

Product	QTY
SAS-8i	1
SAS-HC8	2
TX-J2	3

Recommended Pwr. Supplies

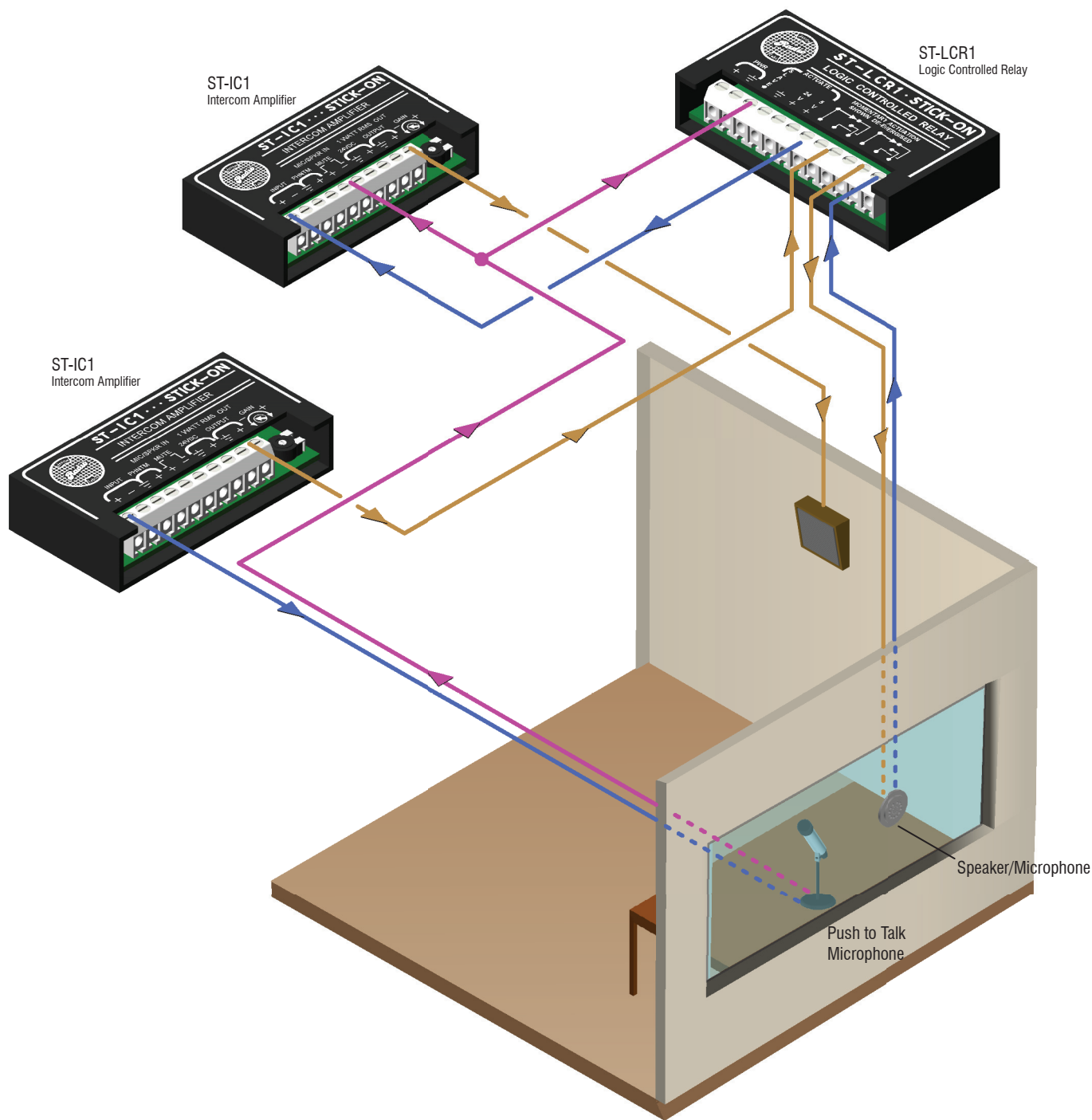
Product	QTY
PS-24V2 24 Vdc 2 A	1

Line Color Key

Red	Line Level Audio Signal
Yellow	Loudspeaker Level
Purple	Control Signal
Blue	Video
Green	Mic Level Audio Signal
Black	Ground
Brown	Power
Orange	Miscellaneous

INTERCOM USING SINGLE REMOTE SPEAKER

Speaker Serves Dual Duty as Microphone and Speaker



Description:

This intercom application reduces the hardware requirements for a secure or weatherproof call box like those found in drive-through talkback systems or secured entryways. The ST-IC1 Intercom Amplifier input accepts a dynamic mic or phantom powered condenser mic. It can also use an 8 Ω or a 45 Ω speaker as a microphone element. An ST-LCR1 Logic Controlled Relay is used in this application to switch a remote speaker so that it can function alternately as a speaker and as a microphone.



RDL
Radio Design Labs

www.rdlnet.com

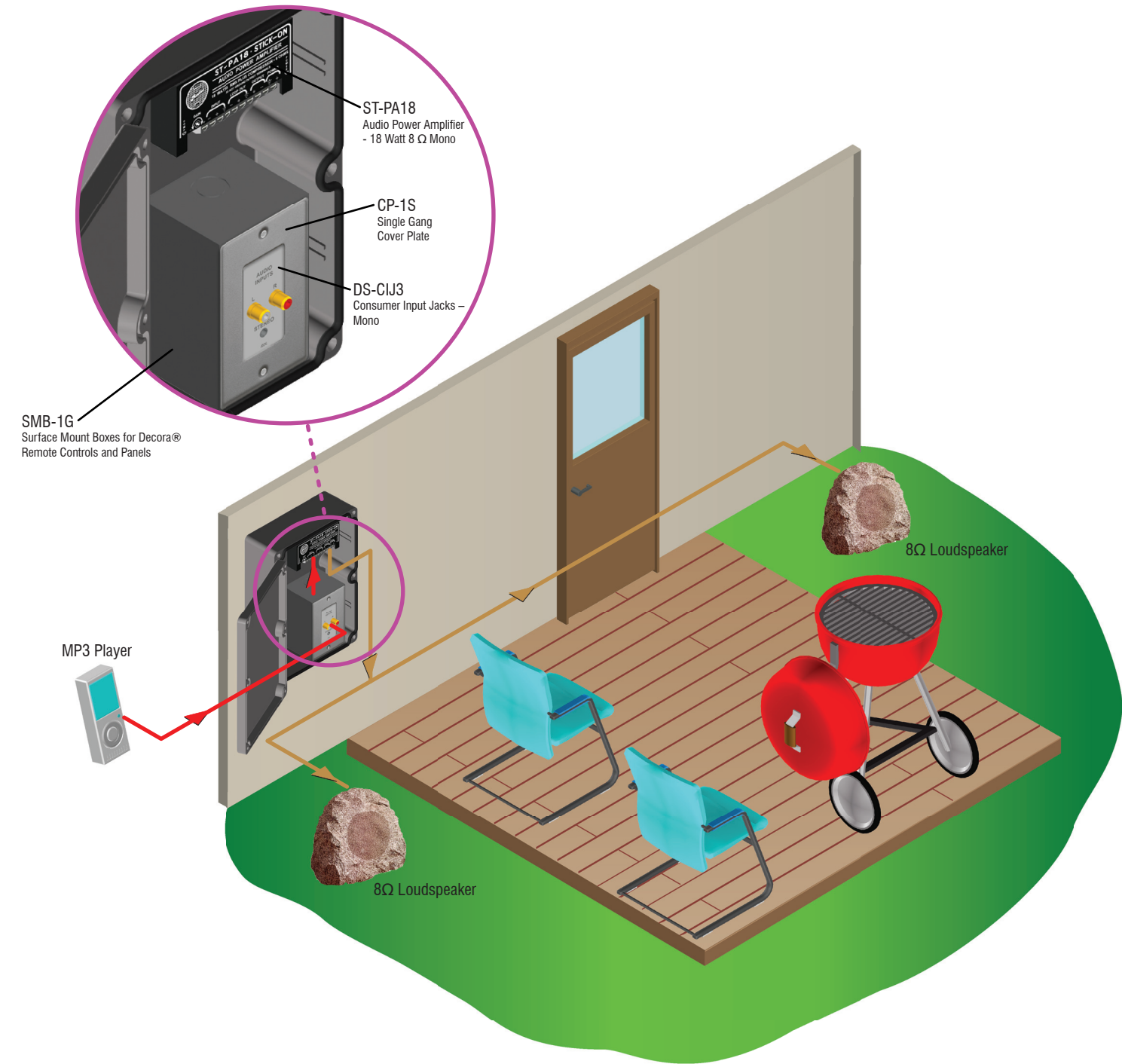
Parts List	
Product	QTY
ST-IC1	2
ST-LCR1	1

Recommended Pwr. Supplies	
Product	QTY
PS-24AS 24 Vdc 500 mA	1

Line Color Key	
Red	Line Level Audio Signal
Brown	Loudspeaker Level
Purple	Control Signal
Yellow	Video
Blue	Mic Level Audio Signal
Green	Ground
Black	Power
Orange	Miscellaneous

PATIO AUDIO SYSTEM

MP3 Music Player with Two Outdoor Rock Loudspeakers



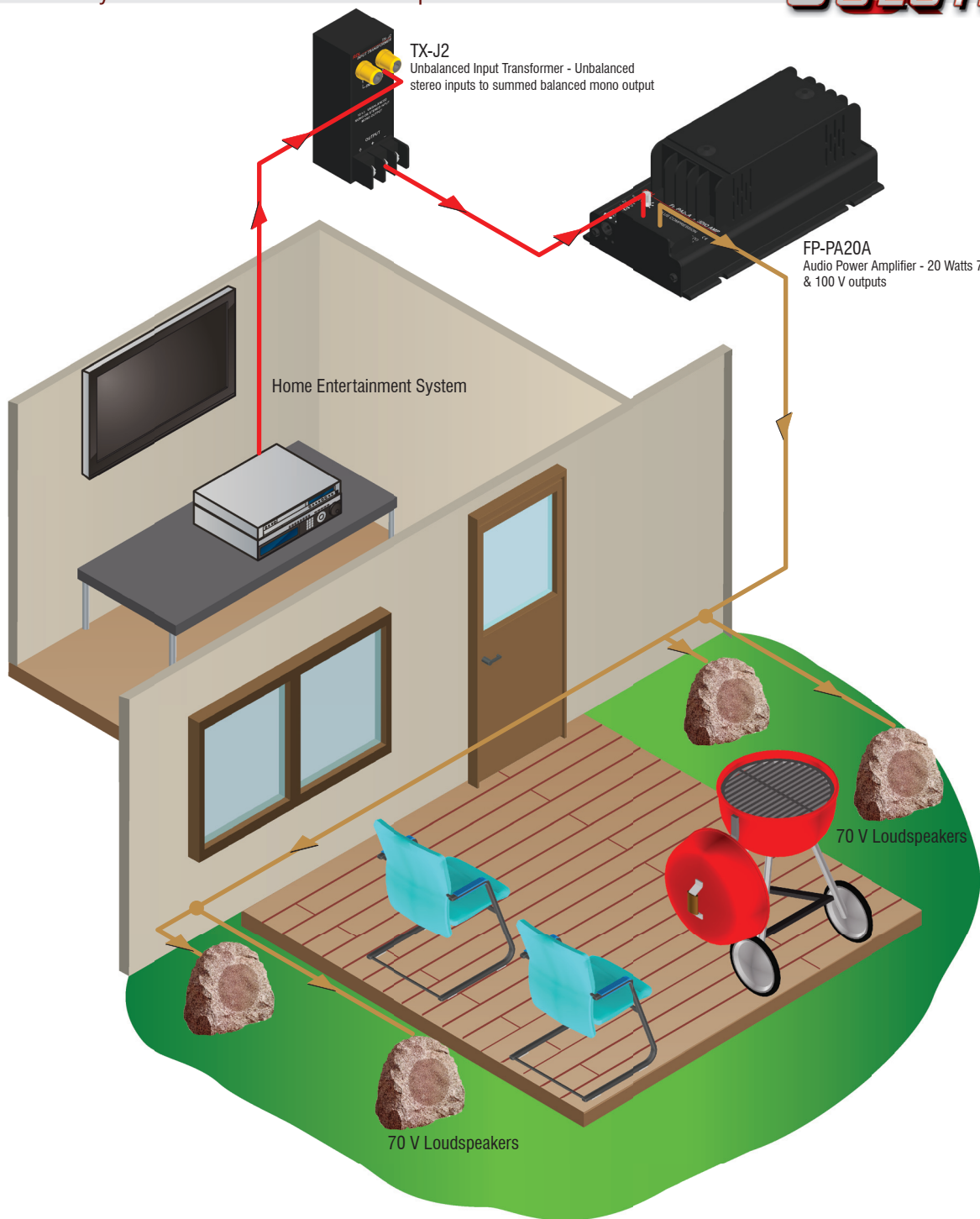
Description:

An outdoor patio is equipped with a DS-CIJ3 Consumer Input Jack Decora® plate that provides connectivity for an MP3 music player or other stereo audio source. The DS-CIJ3 provides a balanced mono sum of the MP3 player source to the ST-PA18 Audio Power Amplifier. The ST-PA18 is a high-efficiency, Class D power amplifier that provides 18 Watts RMS to the rock speakers. The ST-PA18 has an integral audio compressor to control clipping. The DS-CIJ3 (mounted in a CP-1S Stainless Steel Single Gang Cover Plate and SMB-1G Surface Mount Box) and the ST-PA18 are mounted in a standard weatherproof box.

Parts List	
Product	QTY
CP-1S	1
DS-CIJ3	1
SMB-1G	1
ST-PA18	1

Recommended Pwr. Supplies	
Product	QTY
PS-24KS 24 Vdc 1000 mA	1

Line Color Key	
—	Line Level Audio Signal
—	Loudspeaker Level
—	Control Signal
—	Video
—	Mic Level Audio Signal
—	Ground
—	Power
—	Miscellaneous



Description:

A stereo unbalanced audio signal from a home entertainment system is summed and converted to a balanced mono signal using the TX-J2 Unbalanced Input Transformer. An RDL FP-PA20A 20 Watt 70 Volt Audio Power Amplifier powers four 70 Volt outdoor rock speakers in a patio seating area. Each speaker is tapped at 5 Watts, for a total of 20 Watts. The volume is controlled by the home entertainment system.

Using a 70 Volt system allows for the use of smaller cable sizes which reduce system costs and simplify the installation. An RDL FP-PA20B 20 Watt 25 Volt Audio Power Amplifier may be used in place of the FP-PA20A if a 25 Volt system is desired.

Parts List	
Product	QTY
FP-PA20A	1
TX-J2	1

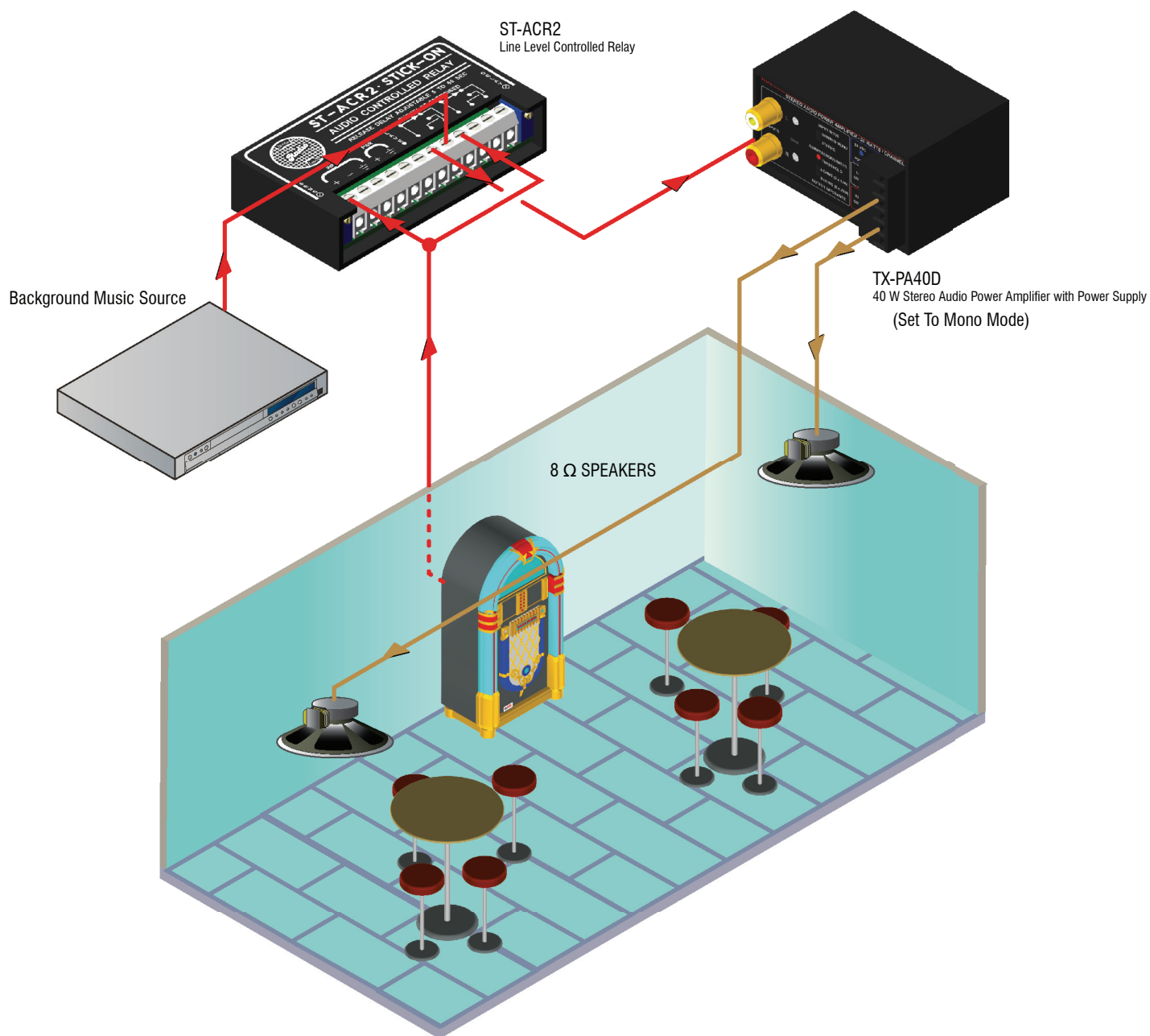
Recommended Pwr. Supplies	
Product	QTY
PS-24V2A 24 Vdc 2 A	1

Line Color Key	
—	Line Level Audio Signal
—	Loudspeaker Level
—	Control Signal
—	Video
—	Mic Level Audio Signal
—	Ground
—	Power
—	Miscellaneous

JUKEBOX OVERRIDES BACKGROUND SOURCE

Line-Level Controlled Relay Provides Automatic Operation

**SYSTEMS
SOLUTIONS** AN-2024



Description:

One of the common uses for the ST-ACR2 Audio Controlled Relay is to provide switching when a priority audio source is active. In this example the priority source is the jukebox which shares the same audio system as the background music source. The ST-ACR2 samples line level audio from the jukebox and switches the audio input to the power amplifier from the jukebox when it senses audio from the jukebox.

The RDL TX-PA40D 40 W Stereo Audio Power Amplifier is shown in this system.



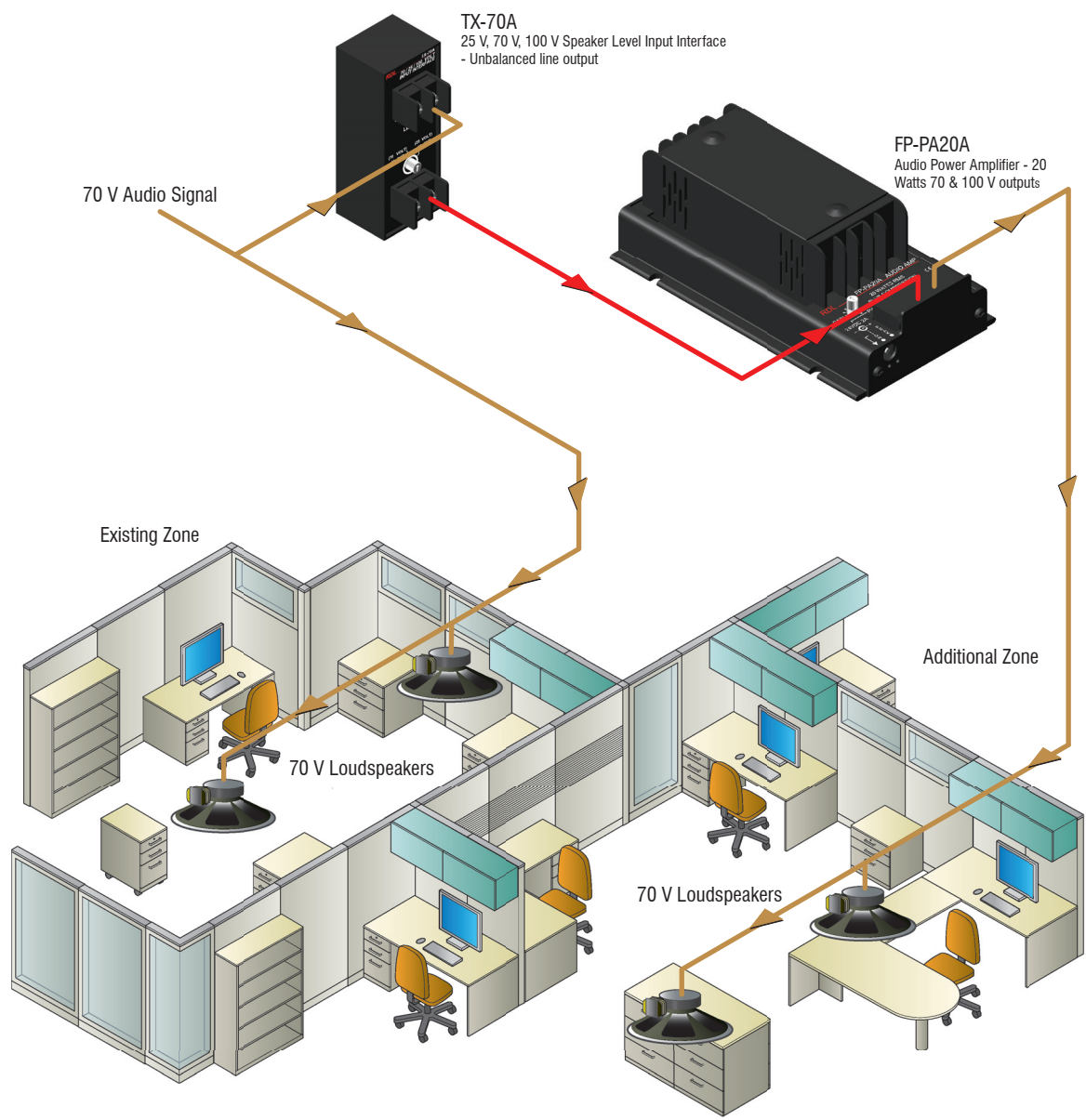
RDL
Radio Design Labs

www.rdlnet.com

Parts List		
Product	QTY	
ST-ACR2	1	
TX-PA40D	1	

Recommended Pwr. Supplies		
Product	QTY	
PS-24AS 24 Vdc 500 mA	1	
TX-PA40D POWER SUPPLY	1, Included	

Line Color Key	
Red	Line Level Audio Signal
Orange	Loudspeaker Level
Purple	Control Signal
Yellow	Video
Blue	Mic Level Audio Signal
Green	Ground
Brown	Power
Black	Miscellaneous











Description:

A 70 V audio signal is being distributed to multiple zones in a facility. The RDL TX-70A provides for the expansion of the existing 70 V system by converting the 70 V signal to an unbalanced line level signal. The unbalanced audio signal feeds the FP-PA20A 20 Watt 70 V Audio Power Amplifier, which powers the speakers in the additional zone. The TX-70A is equipped with a level trimmer for achieving optimal signal level.

Parts List	
Product	QTY
FP-PA20A	1
TX-70A	1

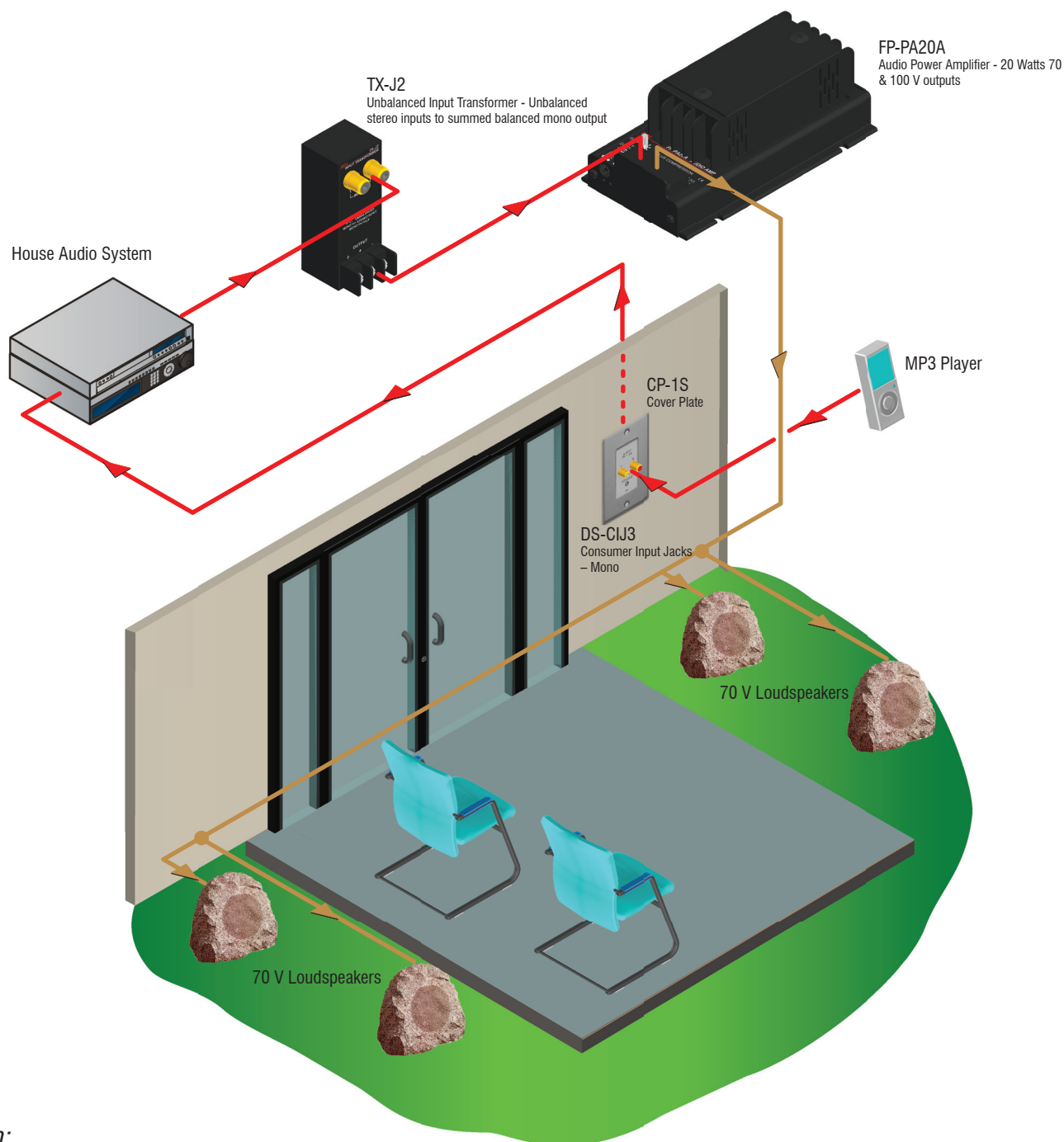
Recommended Pwr. Supplies	
Product	QTY
PS-24V2 24 Vdc 2 A	1

Line Color Key	
	Line Level Audio Signal
	Loudspeaker Level
	Control Signal
	Video
	Mic Level Audio Signal
	Ground
	Power
	Miscellaneous

PATIO AUDIO SYSTEM

House Audio System with MP3 Player and 4 Outdoor Rock Loudspeakers

SYSTEMS SOLUTIONS AN-2026



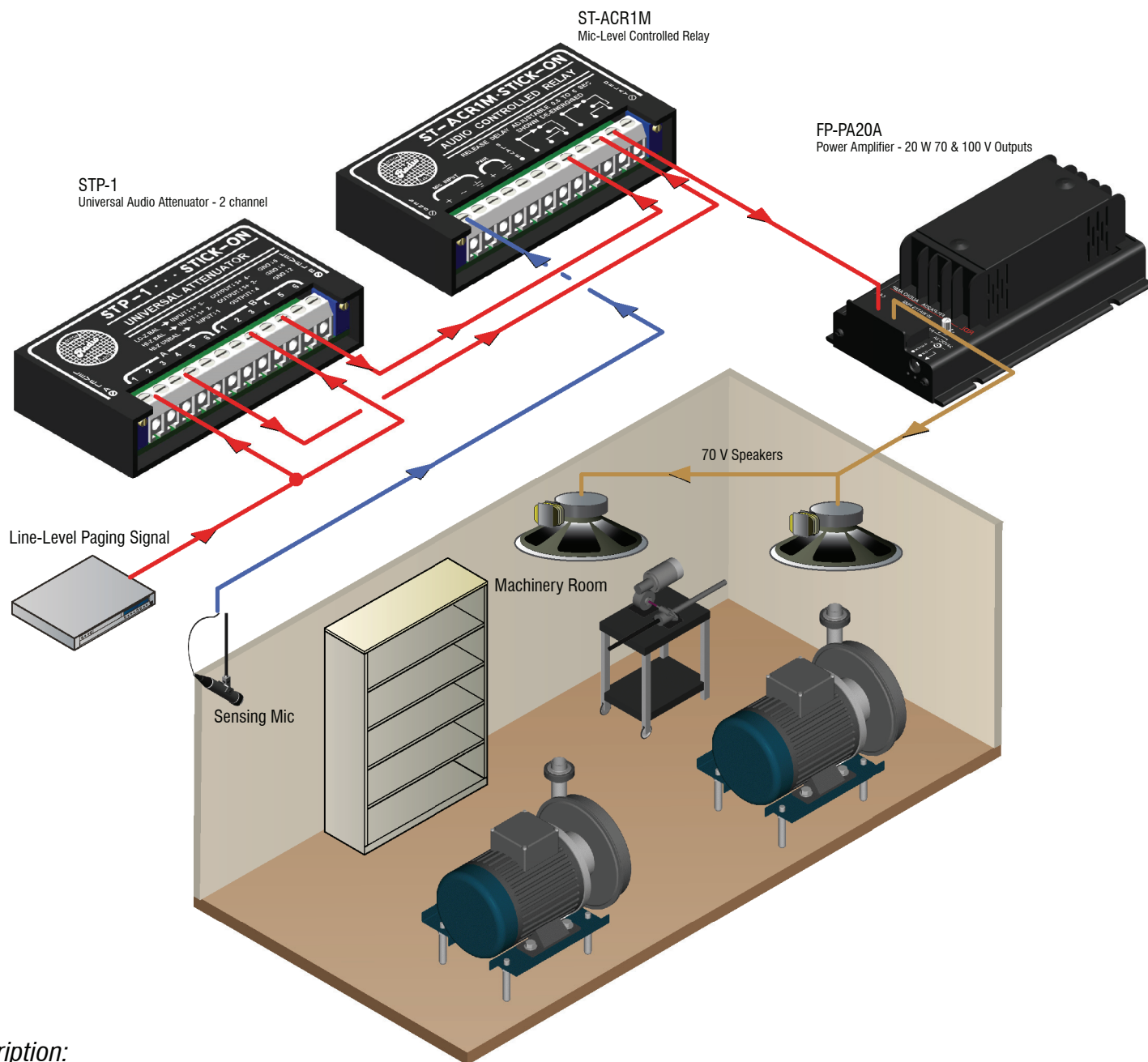
Description:

A stereo unbalanced audio signal from the house audio system is summed and converted to a balanced mono signal using the TX-J2 Unbalanced Input Transformer. The patio is equipped with a DS-CIJ3 Consumer Input Jack Decora® plate that provides connectivity for an MP3 music player or other stereo audio source. Source selection is controlled by the house audio system and volume is controlled using the house audio system and/or the MP3 player, if it's in use.

An RDL FP-PA20A 20 Watt 70 Volt Audio Power Amplifier powers four 70 Volt outdoor rock speakers in a patio seating area. Each speaker is tapped at 5 Watts, for a total of 20 Watts. Using a 70 Volt system allows for the use of smaller cable sizes which reduce system costs and simplify the installation. An RDL FP-PA20B 20 Watt 25 Volt Audio Power Amplifier may be used in place of the FP-PA20A if a 25 Volt system is desired.

ZONE AUTOMATIC PAGING LEVEL CONTROL

Automatic Stepped Level Adjustment for Ambient Level Changes



Description:

The circuit shown is ideal in applications where paging levels are normally sufficient, but at times high ambient noise levels make the paging impossible to hear. This is common in factories where heavy machinery is in use at some times, making higher sound system levels necessary while the machinery is operating, then restoring the normal level when the machinery is no longer running.

In this example, the STP-1 Universal Audio Attenuator is used to set two audio levels (normal and high) for the line-level audio feeding the power amplifier for the machinery room. A sensing microphone is oriented to pick up machinery noise but not paging audio. Machine noise triggers the ST-ACR1M which switches the higher audio input level to the amplifier. In the absence of machine noise, the ST-ACR1M switches back to the standard paging level. An RDL TX-70A Speaker Level Interface can be added to obtain line-level paging audio from a constant voltage speaker line.

An RDL FP-PA20A Power Amplifier is used in this example.

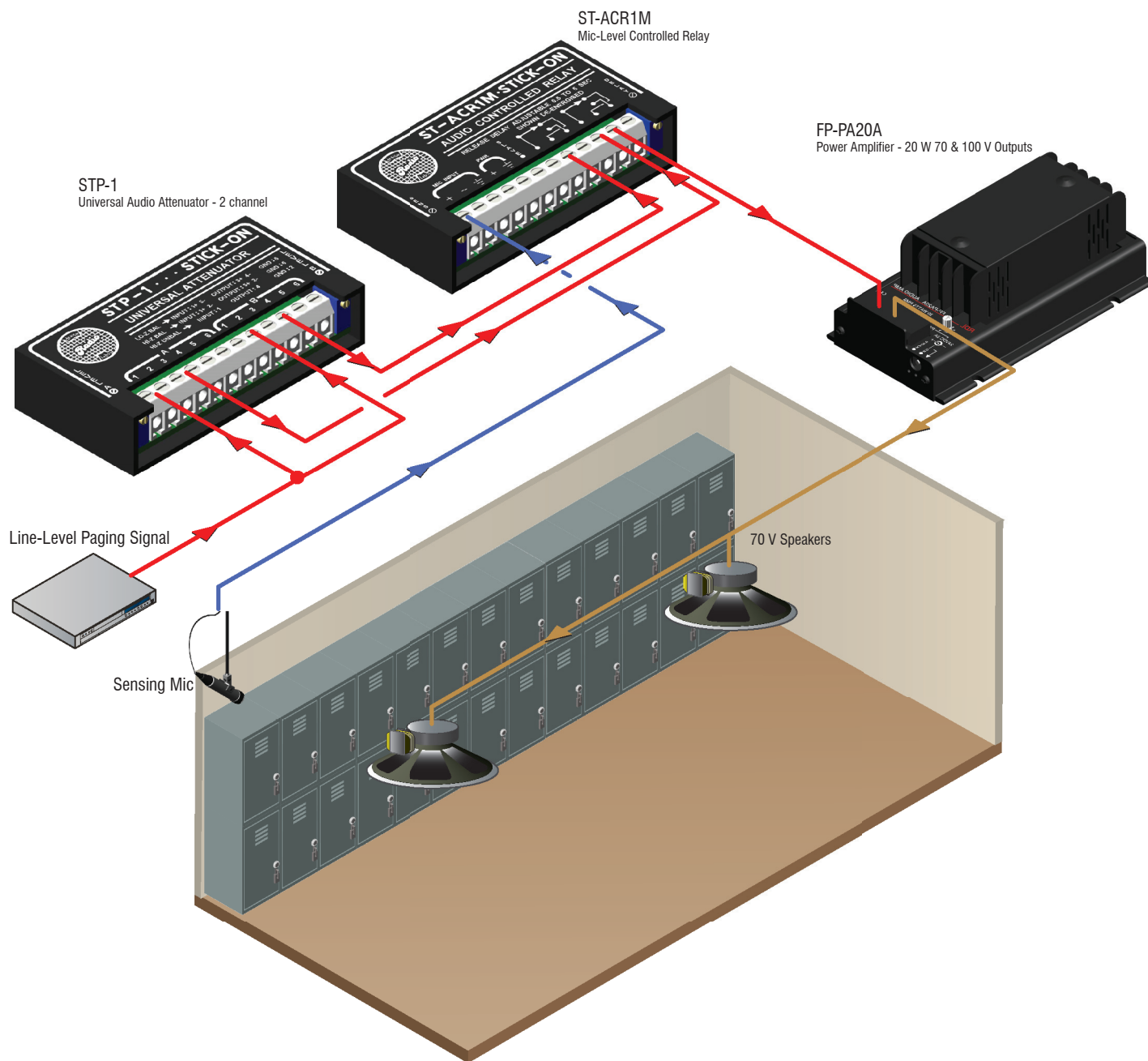
Parts List	
Product	QTY
FP-PA20A	1
STP-1	1
ST-ACR1M	1

Recommended Pwr. Supplies	
Product	QTY
PS-24U2 24 Vdc 2 A	1

Line Color Key	
Red	Line Level Audio Signal
Brown	Loudspeaker Level
Purple	Control Signal
Yellow	Video
Blue	Mic Level Audio Signal
Green	Ground
Black	Power
Orange	Miscellaneous

SINGLE ZONE AUTOMATIC PAGING LEVEL CONTROL

Automatic Stepped Level Adjustment for Ambient Level Changes



Description:

The circuit shown is ideal in applications where paging levels are normally sufficient, but at times high ambient noise levels make the paging impossible to hear. This is common in school hallways which may be empty or crowded, making higher sound system levels necessary during periods of heavy congestion. Normal levels are restored when traffic is minimal.

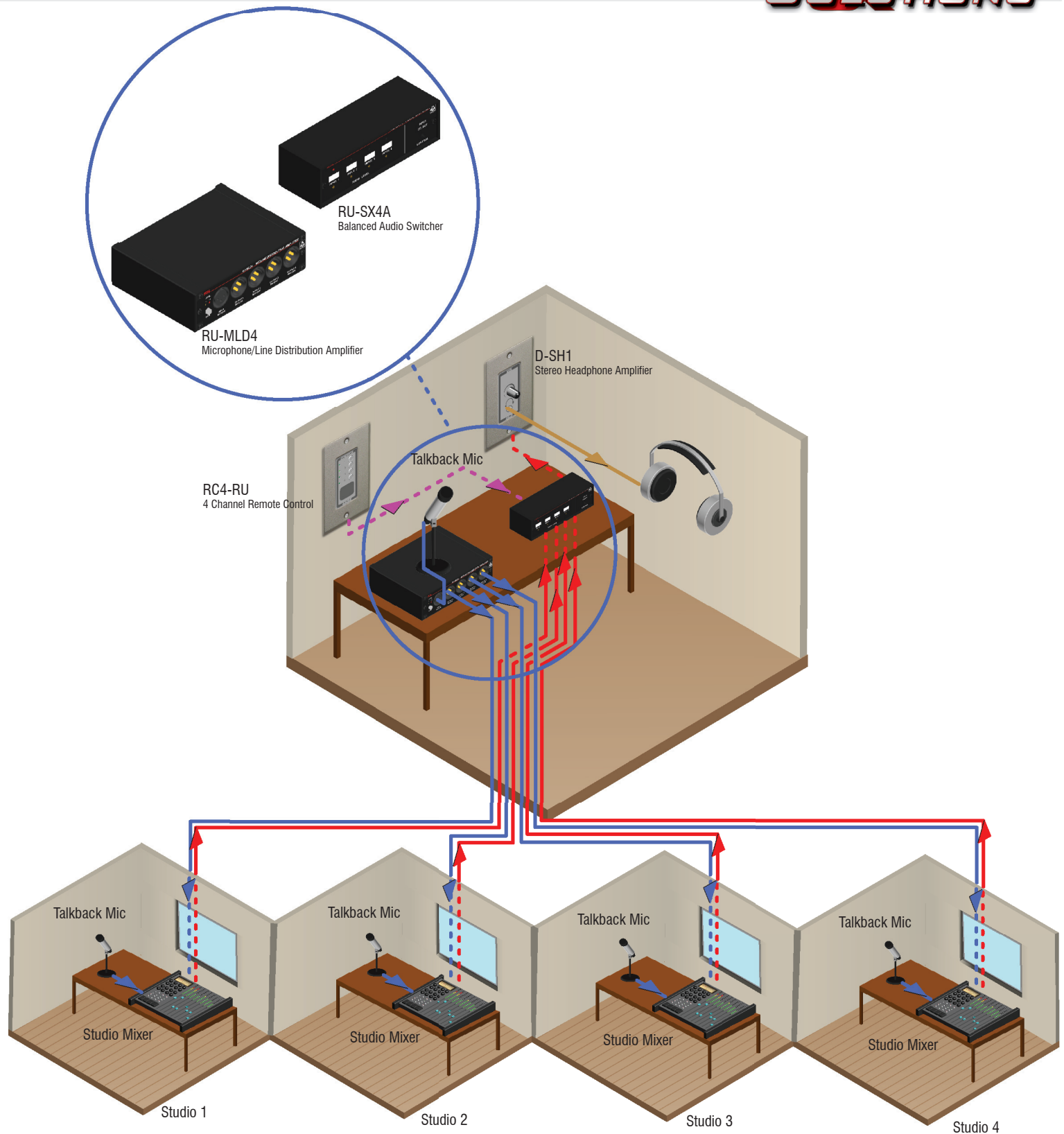
In this example, the STP-1 Universal Audio Attenuator is used to set two audio levels (normal and high) for the line-level audio feeding the power amplifier for the hallway. A sensing microphone is oriented to pick up ambient noise but not paging audio. Ambient noise triggers the ST-ACR1M which switches the higher audio input level to the amplifier. When noise levels return to normal, the ST-ACR1M switches back to the standard paging level. An RDL TX-70A Speaker Level Interface can be added to obtain line-level paging audio from a constant voltage speaker line.

An RDL FP-PA20A Power Amplifier is used in this example.

Parts List	
Product	QTY
FP-PA20A	1
STP-1	1
ST-ACR1M	1

Recommended Pwr. Supplies	
Product	QTY
PS-24U2 24 Vdc 2 A	1

Line Color Key	
Red	Line Level Audio Signal
Blue	Loudspeaker Level
Green	Control Signal
Yellow	Video
Purple	Mic Level Audio Signal
Black	Ground
Brown	Power
Orange	Miscellaneous



Description:

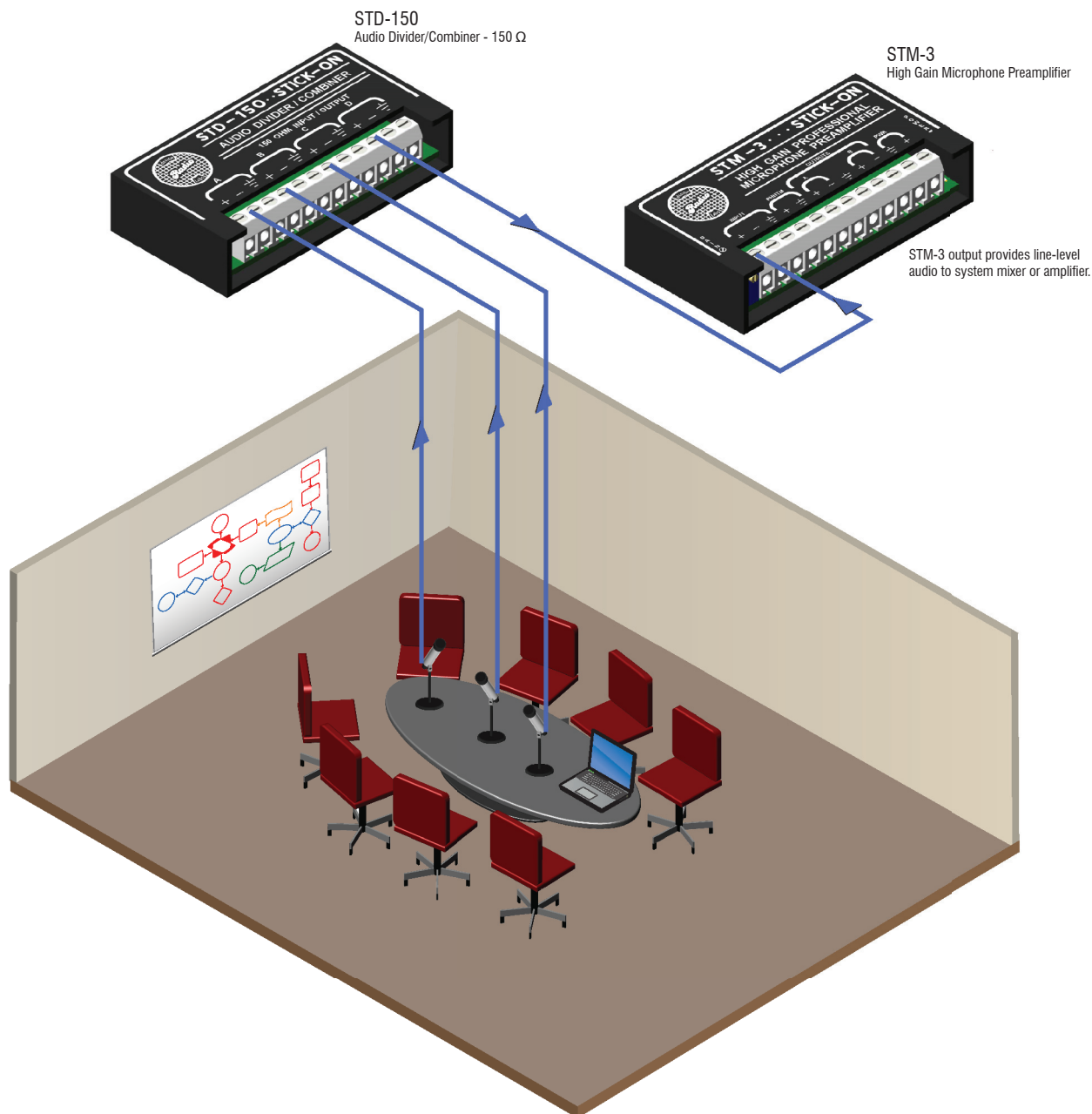
This application allows the master location to talk to all four studios simultaneously and select which studio is heard by the master location.

MIXING THREE PHANTOM-POWERED MICROPHONES

Simple Three Mic Mixing Solution

**SYSTEMS
SOLUTIONS**

AN-2036



Description:

The mixing of multiple phantom-powered mics is often required in various stage or public meeting room installations. The STD-150 mixes the mic signals equally and passes phantom voltage generated by the mic preamp back to each of the mics. Each mic should have the same gain and should operate from a wide range of phantom voltage, as there is a small phantom voltage loss through the STD-150. The STM-3 works well in most applications but for critical, low noise installations the FP-MP1 is recommended. The gain of the three microphones is set on the STM-3. If individual mic gain adjustment is desired, use the RDL FP-MX4 (4 channel ultra-low-noise mixer with switchable phantom and gain for each mic).



RDL
Radio Design Labs

www.rdlnet.com

Parts List

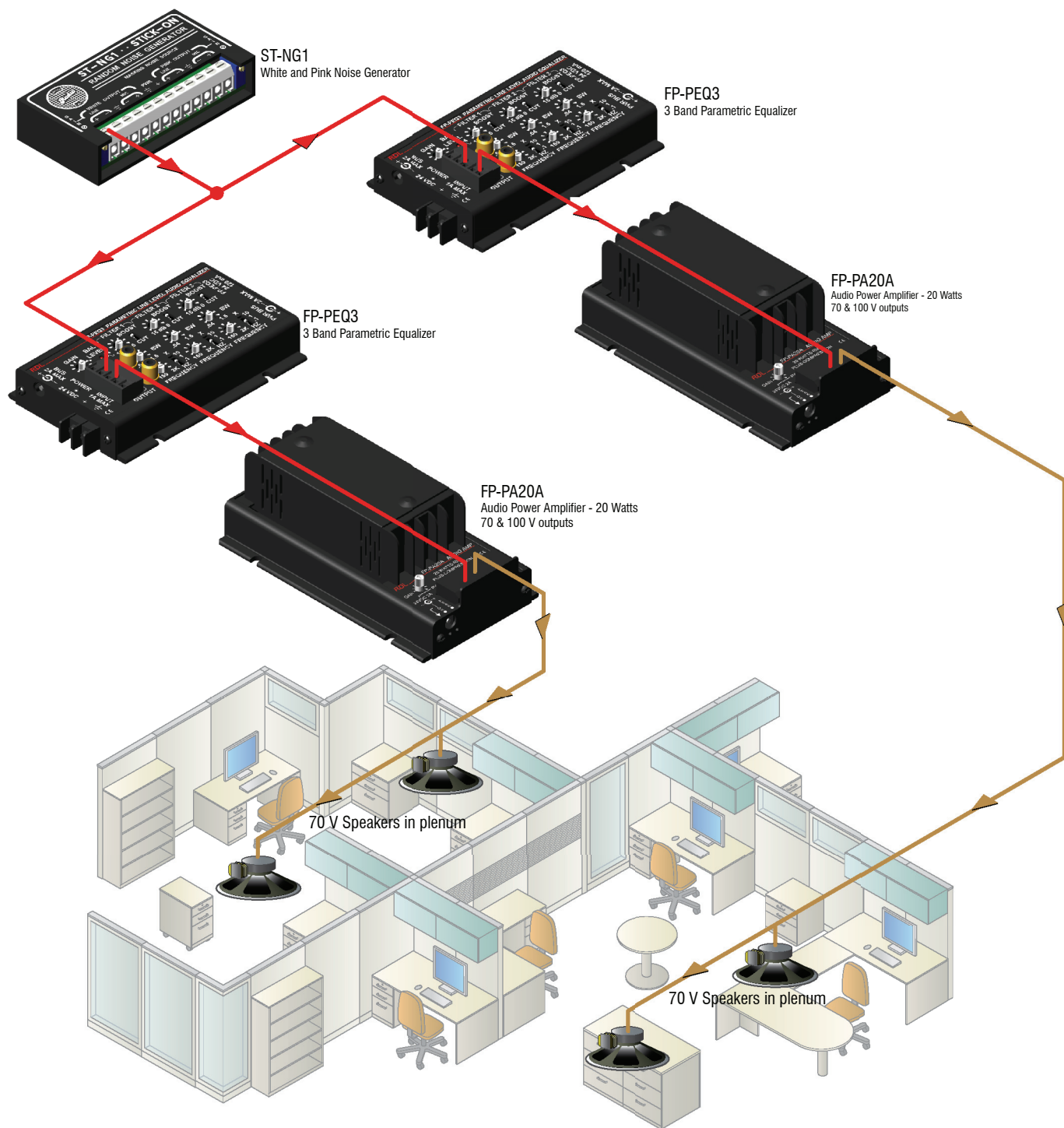
Product	QTY
STM-3	1
STD-150	1

Recommended Pwr. Supplies

Product	QTY
PS-24AS 24 Vdc 500 mA	1

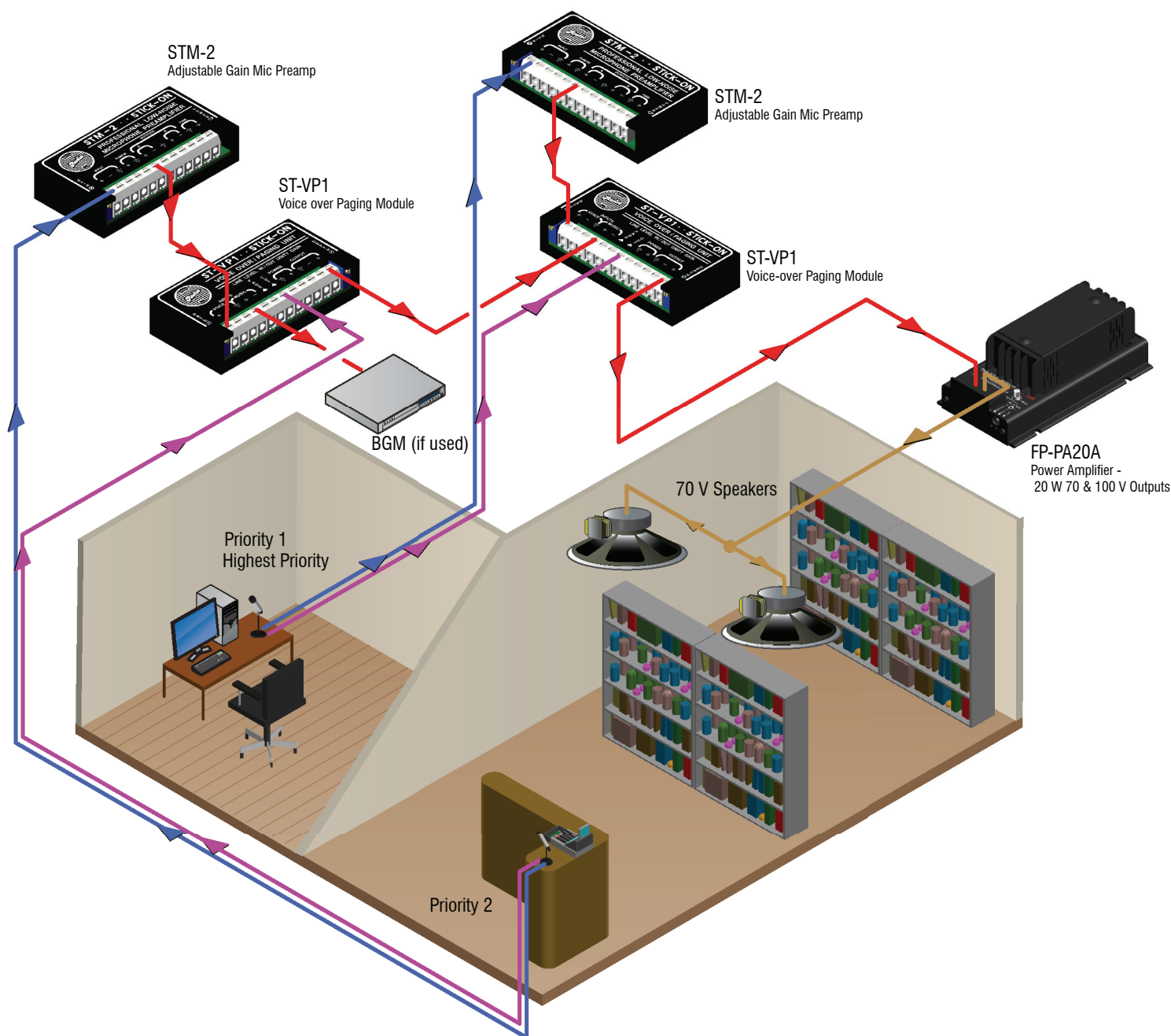
Line Color Key

Line Level Audio Signal
Loudspeaker Level
Control Signal
Video
Mic Level Audio Signal
Ground
Power
Miscellaneous



Description:

This application shows the layout of a two zone noise masking system. The white noise line output from the RDL ST-NG1 feeds the inputs of two RDL FP-PEQ3 parametric equalizers. The FP-PEQ3 equalizers allow the installer to flatten the noise spectrum in each zone. The line output of each FP-PEQ3 is fed through RDL FP-PA20A 20W, 70/100 V power amplifiers. The 70 V output of each FP-PA20A feeds multiple 70 V speakers in its associated zone. Multiple equalizers and amplifiers may be added for larger systems with more zones.



Description:

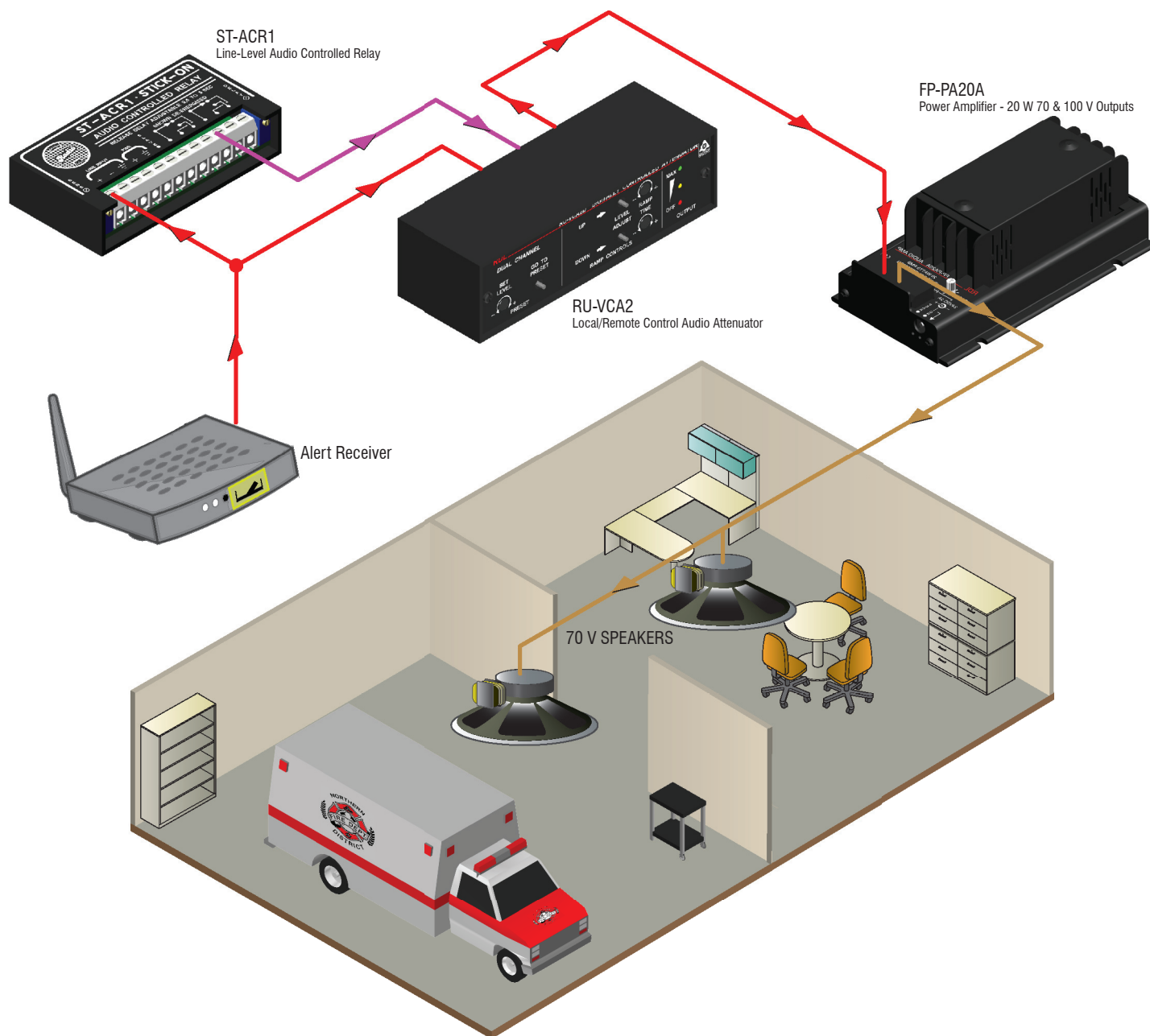
This application provides multiple paging locations, with priority assigned to each location. Each location has a mic with a PTT (push-to-talk) momentary pushbutton that provides external switching contacts. The STM-2 preamp for each microphone should be installed near the associated mic. Wiring between each STM-2 output and the corresponding ST-VP1 is balanced, connected with shielded or unshielded twisted-pair cable. When a PTT button associated with a microphone is depressed, the music fades down and paging becomes active. The highest priority mic overrides the lower priority mic(s). This arrangement may be carried out for an unlimited number of paging locations.

The FP-PA20A 20 Watt Power Amplifier feeding 70 Volt speakers is used in this example. RDL offers a wide range of power amplifiers for paging and public address applications.

AUTOMATIC RAMP OF ALARM SIGNAL

Voltage Controlled Attenuator Controls Alert Activation Tone Bursts and Receiver Noise

SYSTEMS SOLUTIONS AN-2042



Description:

The RU-VCA2 Local/Remote Controlled Audio Attenuator has an internal ramp generator which makes it ideal for switch or relay-operated level control. In this example, the ST-ACR1 Line-Level Audio Controlled Relay is used to operate the RU-VCA2 so that the activation tones sent at the start of the fire dispatch transmission are fed at reduced volume to the speakers. Full volume is reached in time for the alert message. When an alert tone is first received, the ST-ACR1 senses audio and causes the RU-VCA2 to ramp up the audio level. After the message is finished, the audio level is returned to minimum. The RU-VCA2 allows front-panel setup of both ramp up and ramp down rates. The combination of the ST-ACR1 and RU-VCA2 prevents random receiver noise or activation tones from bursting at full volume through the fire station sound system.

The FP-PA20A 20 Watt Power Amplifier with 70 and 100 Volt Outputs is shown in this example.

Parts List

Product	QTY
FP-PA20A	1
RU-VCA2	1
ST-ACR1	1

Recommended Pwr. Supplies

Product	QTY
PS-24AS 24 Vdc 500 mA	1
PS-24U2 24 Vdc 2 A	1

Line Color Key

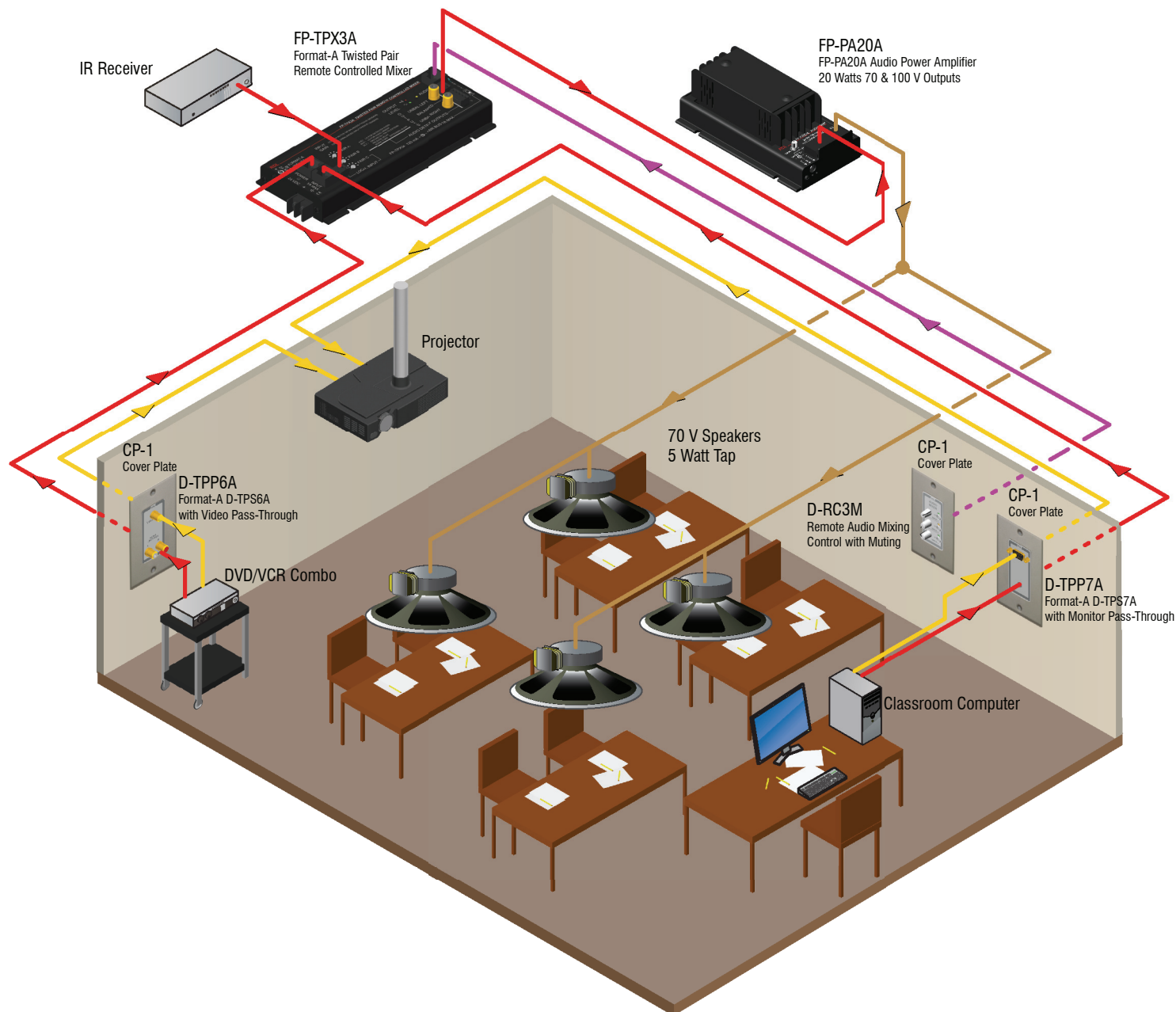
Red	Line Level Audio Signal
Orange	Loudspeaker Level
Purple	Control Signal
Yellow	Video
Blue	Mic Level Audio Signal
Green	Ground
Brown	Power
Black	Miscellaneous

CLASSROOM WITH WALL-MOUNTED THREE-INPUT MIXER

Computer, Auxiliary Input, IR Receiver, Projector, Twisted Pair Audio Wiring, 20 Watt 70 or 100 Volt Audio Amplifier

SYSTEMS SOLUTIONS

AN-2043



Description:

This classroom is equipped with a computer and with jacks for an auxiliary audio/video source such as a DVD player or VCR. The computer is connected to a jack plate at the front of the room. The auxiliary input is shown at the rear. Audio from the audio/video input plates is connected to two inputs of a three input audio mixer located near the projector using twisted-pair cable. The third mixer input is fed from the line-level output of an IR receiver. (Note: A paging source could be connected to the third mixer input instead of the IR receiver, if desired.) The video is connected directly to the projector using coaxial and monitor cables. The projector audio output is not used. The mixer controls the level of each audio source using the associated wall mounted mixer remote control. The three knobs on the wall control provide separate audio level adjustment for the computer, auxiliary input and IR receiver. The audio power amplifier provides a 70 V or 100 V constant-voltage output to drive multiple speakers. The four speakers shown may each be tapped for 5 watts. All wall controls and panels are offered in RDL standard white/gray or in stainless steel with custom labeling available.



RDL
Radio Design Labs

www.rdlnet.com

Parts List

Product	QTY
CP-1	3
D-RC3M	1
D-TTP7A	1
D-TTP6A	1
FP-PA20A	1
FP-TPX3A	1

Recommended Pwr. Supplies

Product	QTY
PS-24U2A 24 Vdc 2000 mA	1

Line Color Key

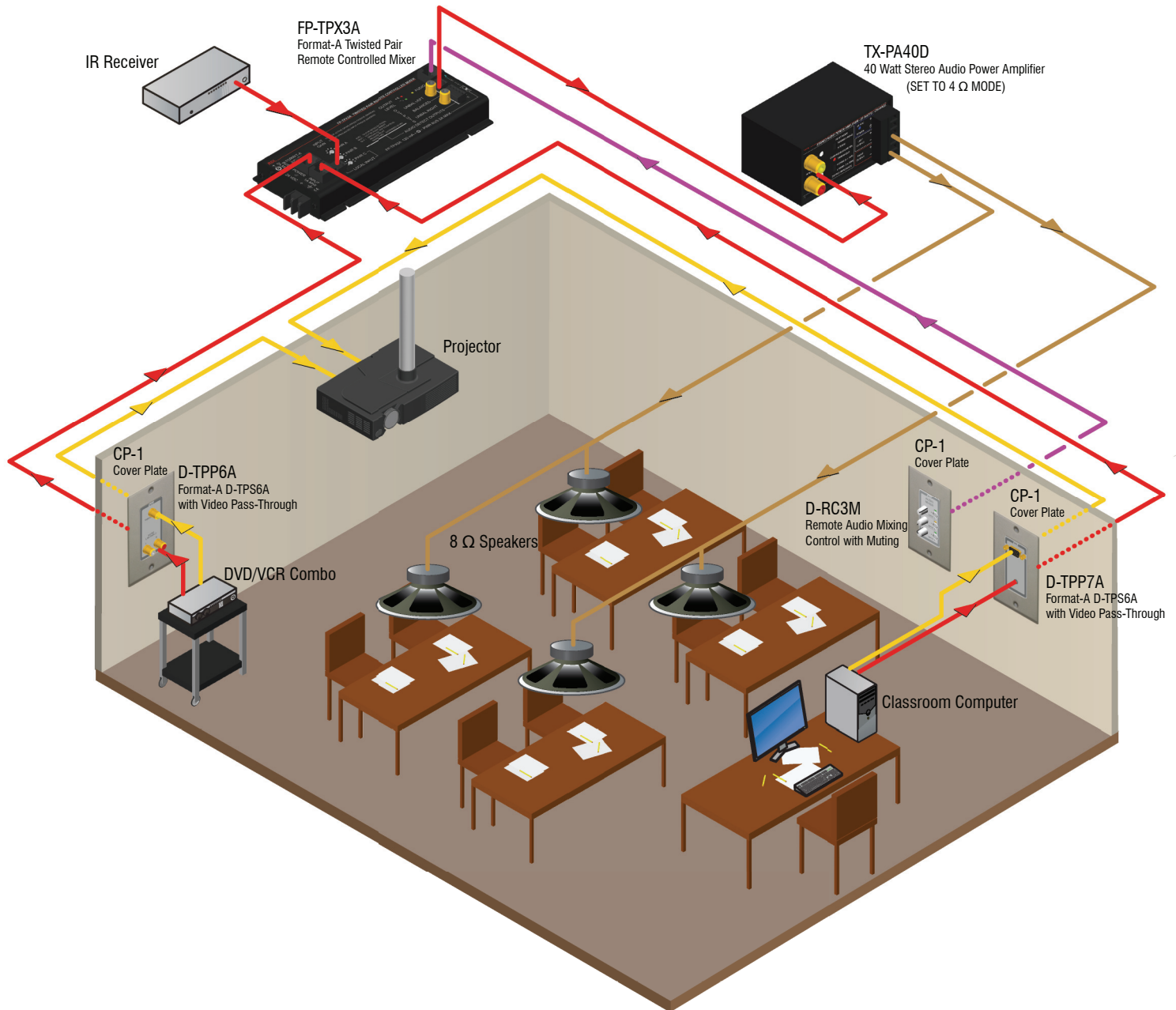
Red	Line Level Audio Signal
Yellow	Loudspeaker Level
Purple	Control Signal
Blue	Video
Green	Mic Level Audio Signal
Black	Ground
Brown	Power
Orange	Miscellaneous

CLASSROOM WITH WALL-MOUNTED THREE-INPUT MIXER

Computer, Auxiliary Input, IR Receiver, Projector, Twisted Pair Audio Wiring, 40 Watt Audio Amplifier

SYSTEMS SOLUTIONS

AN-2044



Description:

This classroom is equipped with a computer and with jacks for an auxiliary audio/video source such as a DVD player or VCR. The computer is connected to a jack plate at the front of the room. The auxiliary input is shown at the rear. Audio from the audio/video input plates is connected to two inputs of a three input audio mixer located near the projector using twisted-pair cable. The third mixer input is fed from the line-level output of an IR receiver. (Note: A paging source could be connected to the third mixer input instead of the IR receiver, if desired.) The video is connected directly to the projector using coaxial and monitor cables. The projector audio output is not used. The mixer controls the level of each audio source using the associated wall mounted mixer remote control. The three knobs on the wall control provide separate audio level adjustment for the computer, auxiliary input and IR receiver. Each output channel of the power amplifier drives two 8 Ω speakers. All wall controls and panels are offered in RDL standard white/gray or in stainless steel with custom labeling available.



RDL
Radio Design Labs

www.rdlnet.com

Parts List

Product	QTY
CP-1	3
D-RC3M	1
D-TPP6A	1
D-TPP7A	1
FP-TPX3A	1
TX-PA40D	1

Recommended Pwr. Supplies

Product	QTY
TX-PA40D POWER SUPPLY	1, Included
PS-24AS	1

Line Color Key

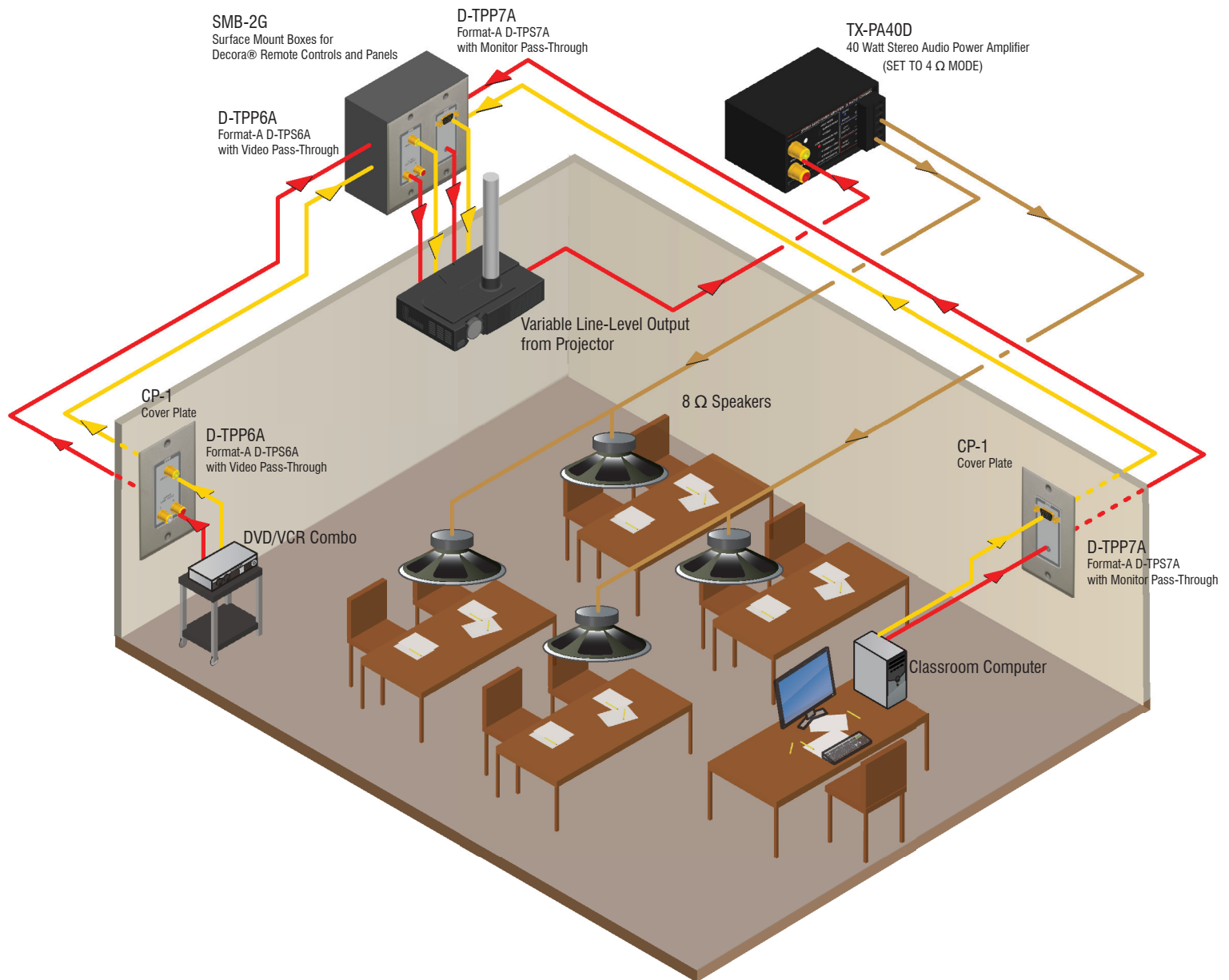
Red	Line Level Audio Signal
Yellow	Loudspeaker Level
Purple	Control Signal
Blue	Video
Green	Mic Level Audio Signal
Brown	Ground
Orange	Power
Black	Miscellaneous

CLASSROOM WITH PROJECTOR AUDIO/VIDEO SWITCHING

Computer, Auxiliary Input, Projector w/ variable output, Twisted Pair Audio Wiring, 40 Watt Audio Amplifier

SYSTEMS SOLUTIONS

AN-2045



Description:

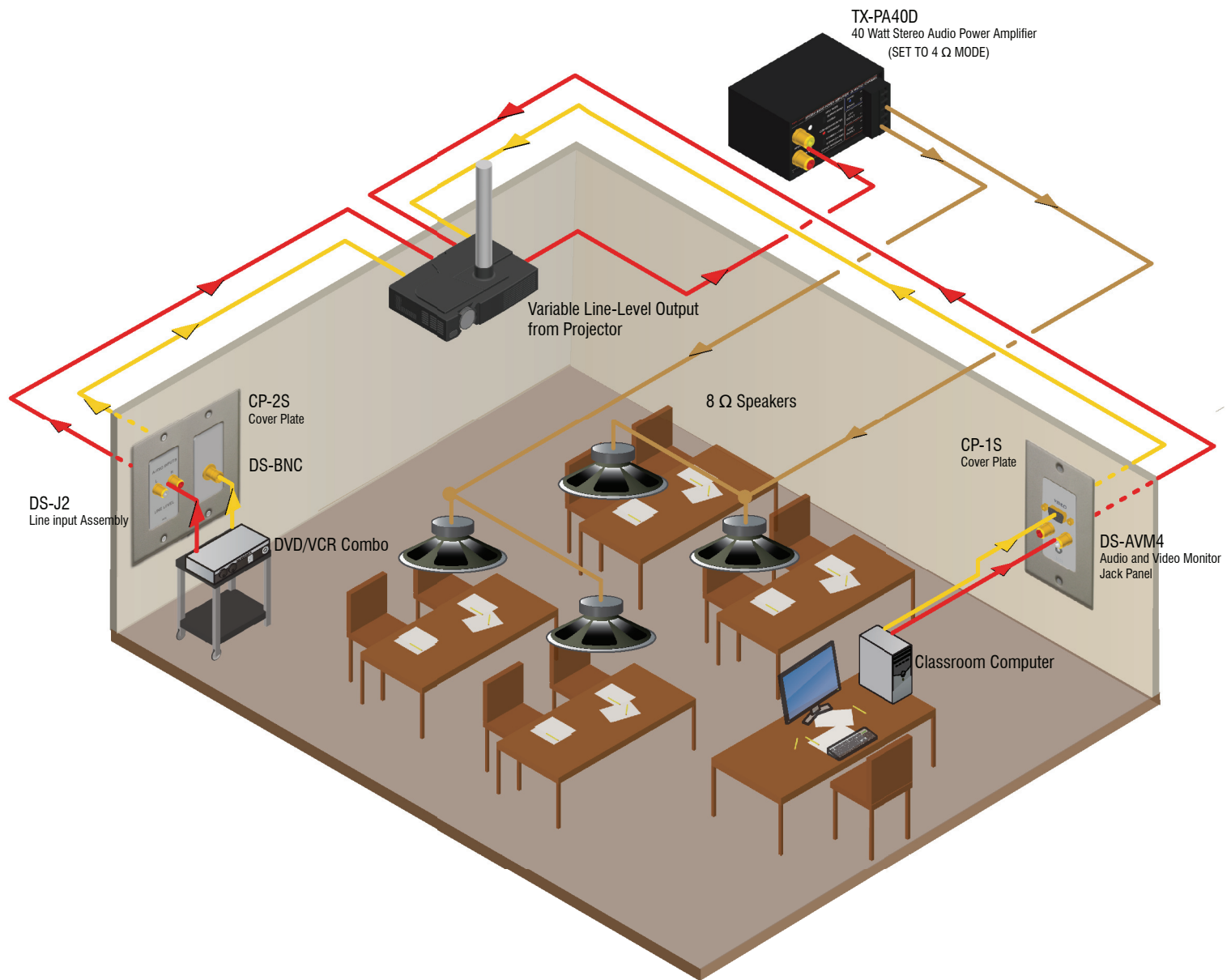
This classroom is equipped with a computer and with jacks for an auxiliary audio/video source such as a DVD or VCR player. The computer is connected to a jack plate at the front of the room. The auxiliary input is shown at the rear. Audio from each of the audio/video input plates is connected to the projector using twisted-pair cable. The video is connected using coaxial and monitor cables. Identical jack plates are mounted in the classroom wall and in a box near the projector so the room may be pre-wired. Installation of the projector is facilitated by plugging its cables into the jacks. The projector is used to switch between sources and to control the audio level to the speakers. The projector must be equipped with a variable level audio output. Each output channel of the power amplifier drives two 8 Ω speakers. All wall controls and panels are offered in RDL standard white/gray or in stainless steel with custom labeling available.

CLASSROOM W/ PROJECTOR AUDIO/VIDEO SWITCHING

Computer, Auxiliary Input, Projector w/ variable output, 40 Watt Stereo Audio Amplifier

SYSTEMS SOLUTIONS

AN-2046

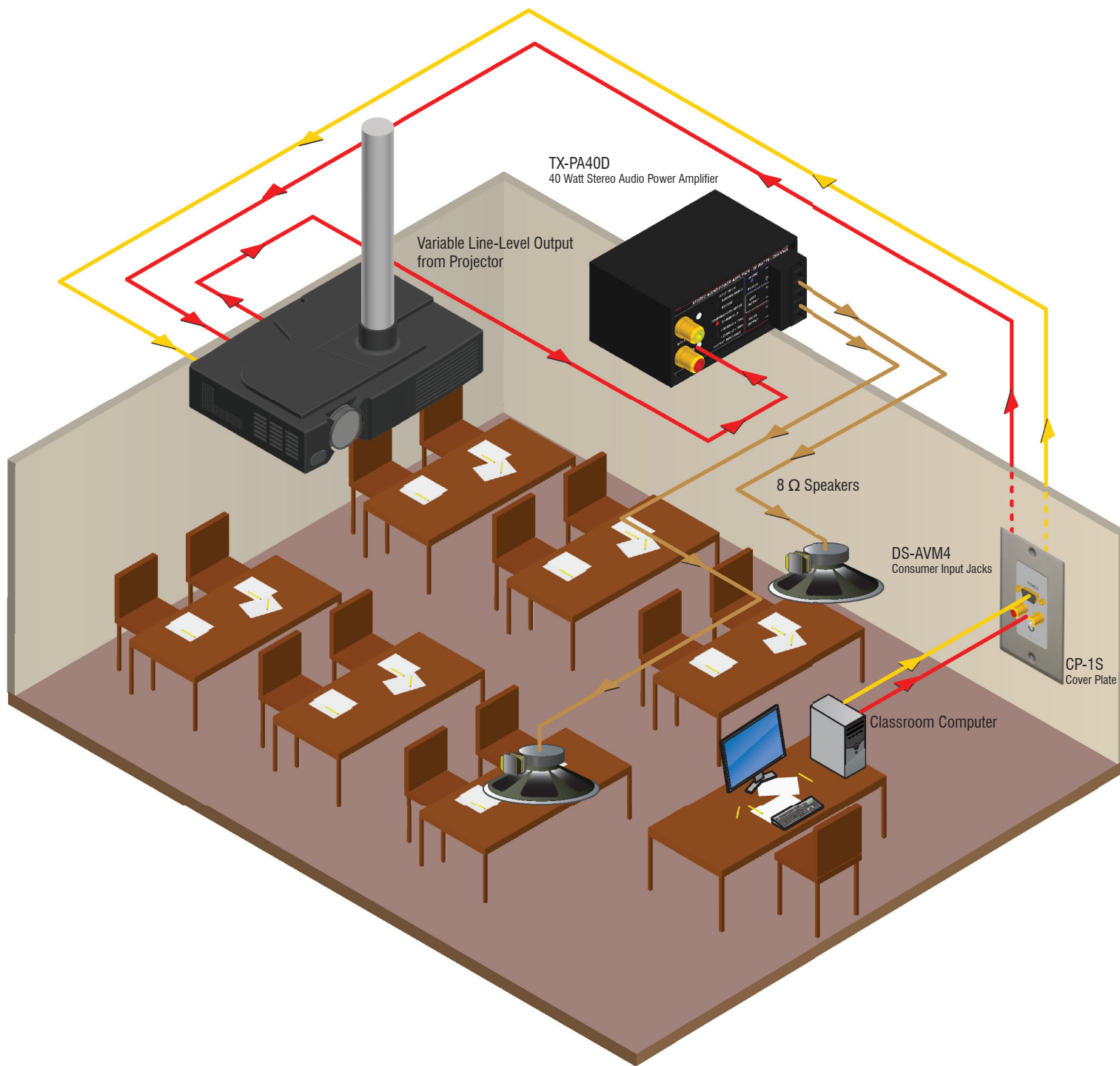


Description:

This classroom is equipped with a computer and with jacks for an auxiliary audio/video source such as a DVD player or VCR. The computer is connected to a jack plate at the front of the room. The auxiliary input is shown at the rear. Audio and video from each of the audio/video input plates is connected to the projector using standard audio wiring, a video coaxial cable and a monitor cable. The projector is used to switch between sources and to control the audio level to the speakers. The projector must be equipped with a variable level audio output. Each output channel of the power amplifier powers two 8 Ω speakers. All wall controls and panels are offered in RDL standard white/gray or in stainless steel with custom labeling available.

BASIC CLASSROOM WITH PROJECTOR

Computer, Projector w/ variable output, 40 Watt Stereo Audio Amplifier



Description:

This classroom is equipped with a computer, projector and overhead speakers. The computer is connected to a jack plate at the front of the room. Audio and video from the audio/video input plate is connected to the projector using standard audio wiring and monitor cable. The projector is used to control the audio level to the speakers. The projector must be equipped with a variable level audio output. Each output channel of the power amplifier powers one 8 Ω speaker. All wall controls and panels are offered in RDL standard white/gray or in stainless steel with custom labeling available.

Parts List	
Product	QTY
CP-1S	1
DS-AVM4	1
TX-PA40D	1

Recommended Pwr. Supplies	
Product	QTY
TX-PA40D POWER SUPPLY	1, Included

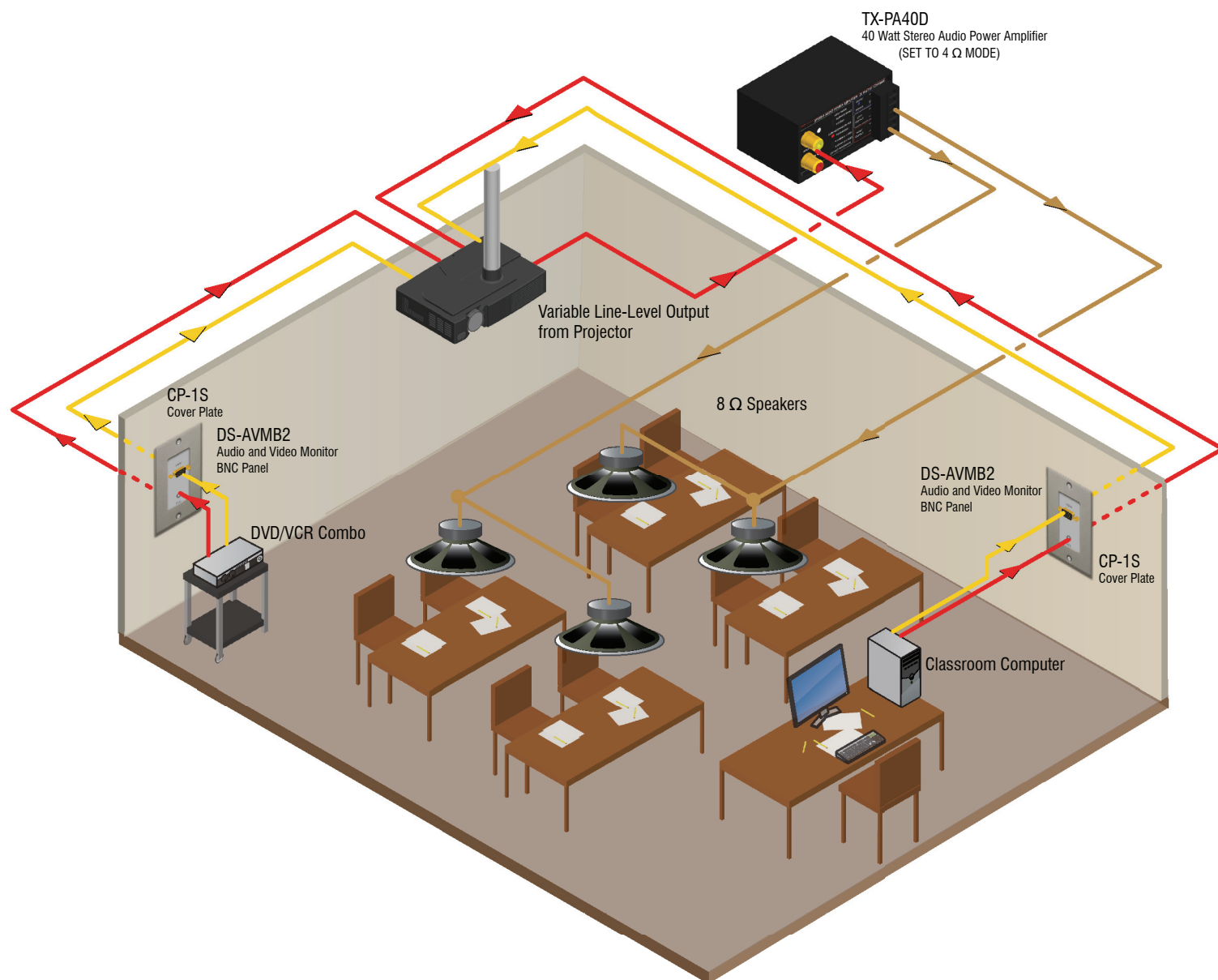
Line Color Key	
Red	Line Level Audio Signal
Yellow	Loudspeaker Level
Blue	Control Signal
Green	Video
Purple	Mic Level Audio Signal
Brown	Ground
Orange	Power
Black	Miscellaneous

CLASSROOM W/ PROJECTOR AUDIO/VIDEO SWITCHING

Computer, Auxiliary Input, Projector w/ variable output, 40 Watt Stereo Audio Amplifier

SYSTEMS SOLUTIONS

AN-2048



Description:

This classroom is equipped with a computer and with jacks for an auxiliary audio/video source such as a DVD player or VCR. The computer is connected to a jack plate at the front of the room. The auxiliary input is shown at the rear. Audio and video from each of the audio/video input plates is connected to the projector using standard audio wiring and RGBHV BNC monitor cables. The projector is used to switch between sources and to control the audio level to the speakers. The projector must be equipped with a variable level audio output. Each output channel of the power amplifier powers two 8 Ω speakers. All wall controls and panels are offered in RDL standard white/gray or in stainless steel with custom labeling available.



RDL
Radio Design Labs

www.rdlnet.com

Parts List

Product	QTY
CP-1S	2
DS-AVMB2	2
TX-PA40D	1

Recommended Pwr. Supplies

Product	QTY
TX-PA40D POWER SUPPLY	1, Included

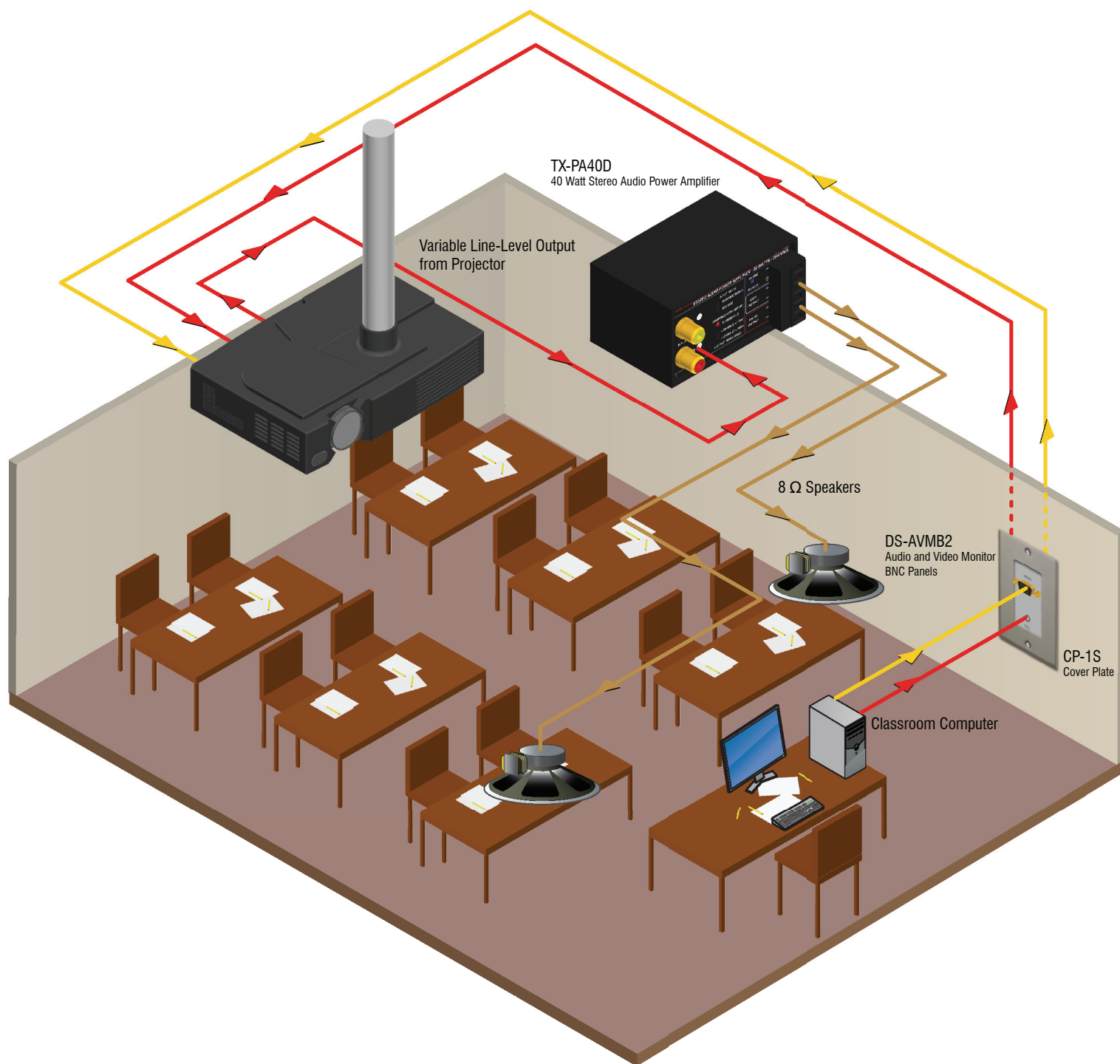
Line Color Key

Red	Line Level Audio Signal
Brown	Loudspeaker Level
Yellow	Control Signal
Blue	Video
Green	Mic Level Audio Signal
Grey	Ground
Orange	Power
Black	Miscellaneous

BASIC CLASSROOM WITH PROJECTOR

Computer, Projector w/ variable output, 40 Watt Stereo Audio Amplifier

SYSTEMS SOLUTIONS AN-2049



Description:

This classroom is equipped with a computer, projector and overhead speakers. The computer is connected to a jack plate at the front of the room. Audio and video from the audio/video input plate is connected to the projector using standard audio wiring and monitor cable. The projector is used to control the audio level to the speakers. The projector must be equipped with a variable level audio output. Each output channel of the power amplifier powers one 8 Ω speaker. All wall controls and panels are offered in RDL standard white/gray or in stainless steel with custom labeling available.

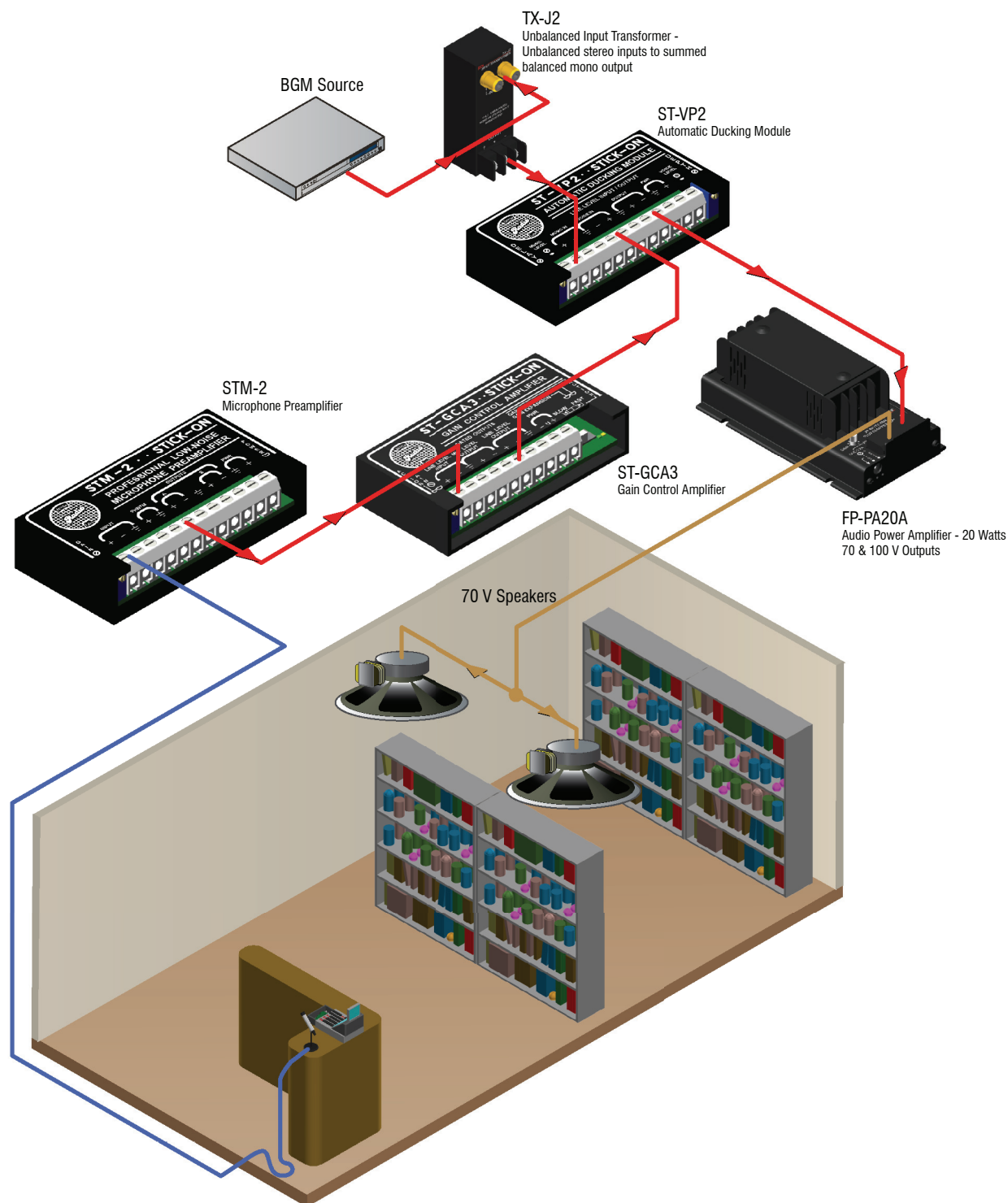
Parts List	
Product	QTY
CP-1S	1
DS-AVMB2	1
TX-PA40D	1

Recommended Pwr. Supplies	
Product	QTY
TX-PA40D POWER SUPPLY	1, Included

Line Color Key	
Red	Line Level Audio Signal
Yellow	Loudspeaker Level
Purple	Control Signal
Blue	Video
Green	Mic Level Audio Signal
Brown	Ground
Orange	Power
Black	Miscellaneous

BASIC PAGING OVER BACKGROUND MUSIC

User-Controlled Voice-Over Paging with 70 V Amplification of BGM and Paging



Description:

This system allows a push-to-talk tabletop microphone to interrupt background music during paging. The system can be set up to completely remove the background music or to simply duck the music to a preset level. The ST-VP2 Automatic Ducking Module allows the end user to dial in exactly how much 'ducking' of the music is desired. The ST-GCA3 Gain Control Amplifier insures consistency of level from the paging source. The system uses a 20 watt 70 V amplifier driving two 70 V speakers each tapped at 10 Watts.

Parts List	
Product	QTY
FP-PA20A	1
STM-2	1
ST-GCA3	1
ST-VP2	1
TX-J2	1

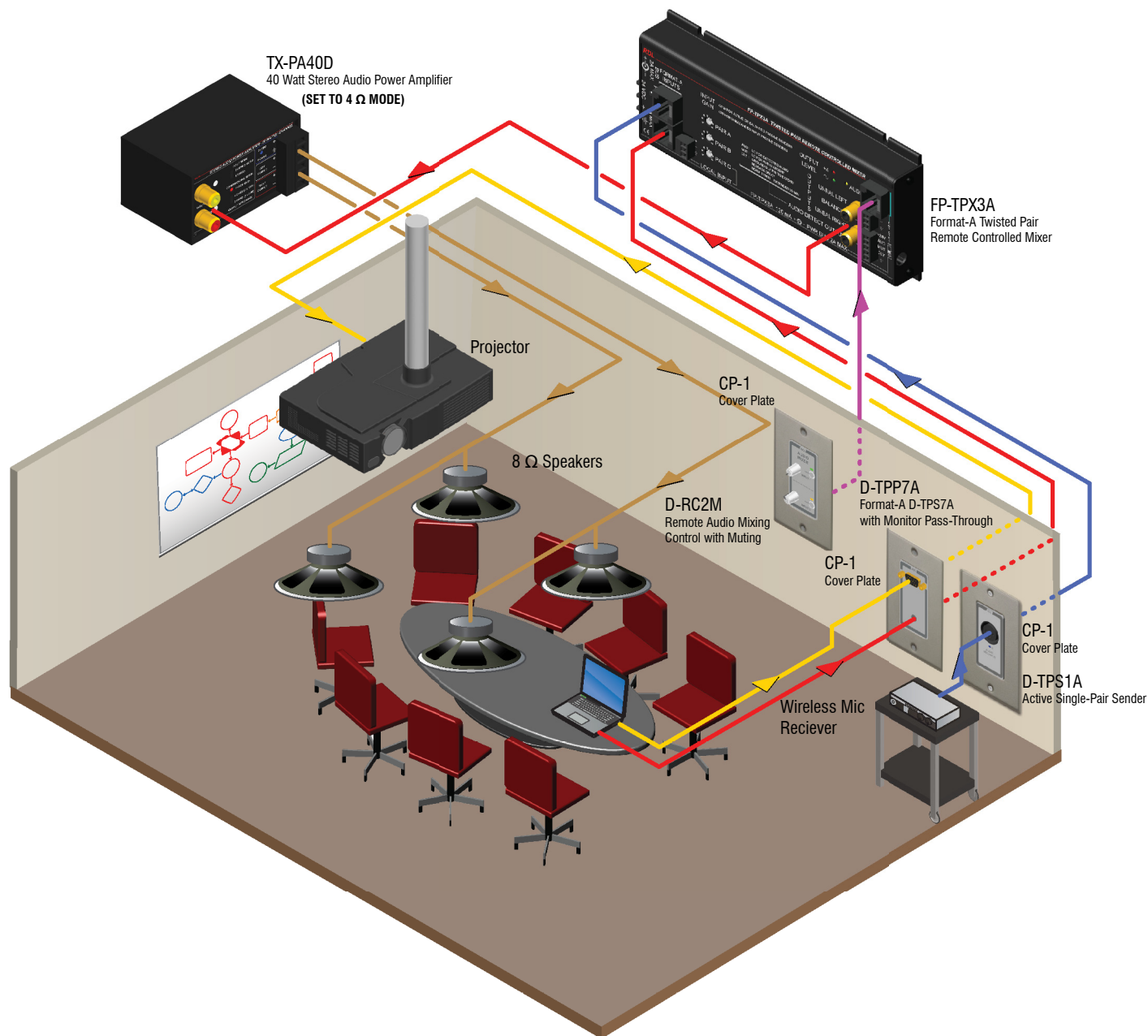
Recommended Pwr. Supplies	
Product	QTY
PS-24U2A 24 Vdc 2000 mA	1
PS-24AS 24 Vdc 500 mA	1

Line Color Key	
—	Line Level Audio Signal
—	Loudspeaker Level
—	Control Signal
—	Video
—	Mic Level Audio Signal
—	Ground
—	Power
—	Miscellaneous

CORPORATE CONFERENCE/PRESENTATION CENTER

Audio/Visual, Wireless Mic System, 2 Channel Mixing with 40 Watt Amplifier

SYSTEMS SOLUTIONS AN-2051



Description:

This Conference/Presentation center is equipped with multiple wall input plates for auxillary audio/video sources such as a laptop computer and wireless microphone. The system includes a mixer with remote volume and muting control. Wall plates are shown at the front of the room where presentations are normally staged. The video input jack is wired directly to the projector using a standard VGA video cable. All signal and control connections between the three wall plates and the mixer use CAT5 wire. The remote controlled mixer is used to set audio levels from the audio input wall plates. The volume and muting controls are located at the front of the room allowing easy access before and during presentations. The amplifier is switched to mono and 4 Ω ; the output is driving four 8 Ω speakers. All wall controls and panels are available in RDL standard white/gray or in stainless steel with custom labeling available.

Parts List

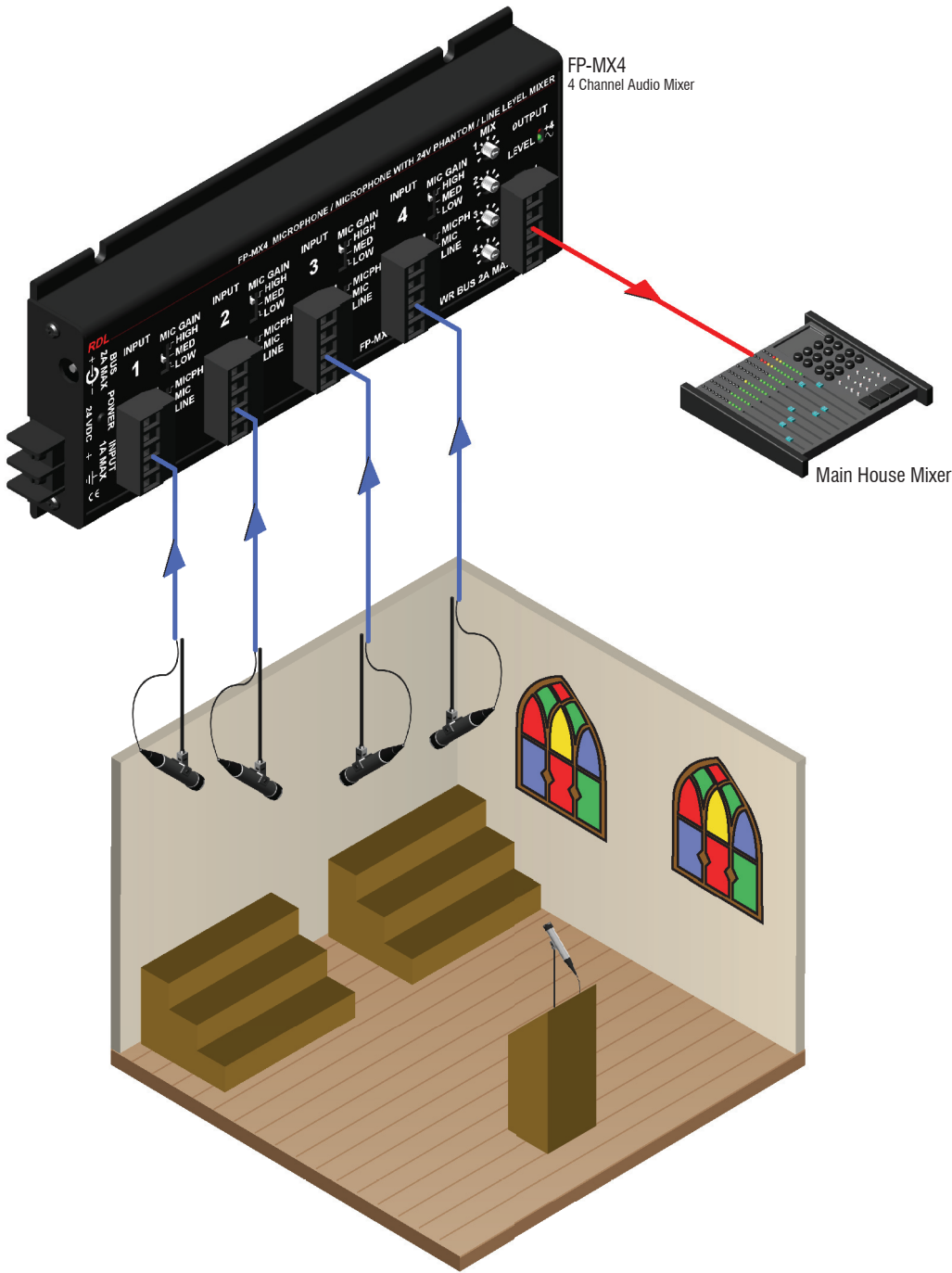
Product	QTY
CP-1	3
D-RC2M	1
D-TPP7A	1
D-TPS1A	1
FP-TPX3A	1
TX-PA40D	1

Recommended Pwr. Supplies

Product	QTY
TX-PA40D Power Supply	1, Included
PS-24AS 24 Vdc 500 mA	1

Line Color Key

Red	Line Level Audio Signal
Yellow	Loudspeaker Level
Blue	Control Signal
Green	Video
Purple	Mic Level Audio Signal
Brown	Ground
Black	Power
Orange	Miscellaneous

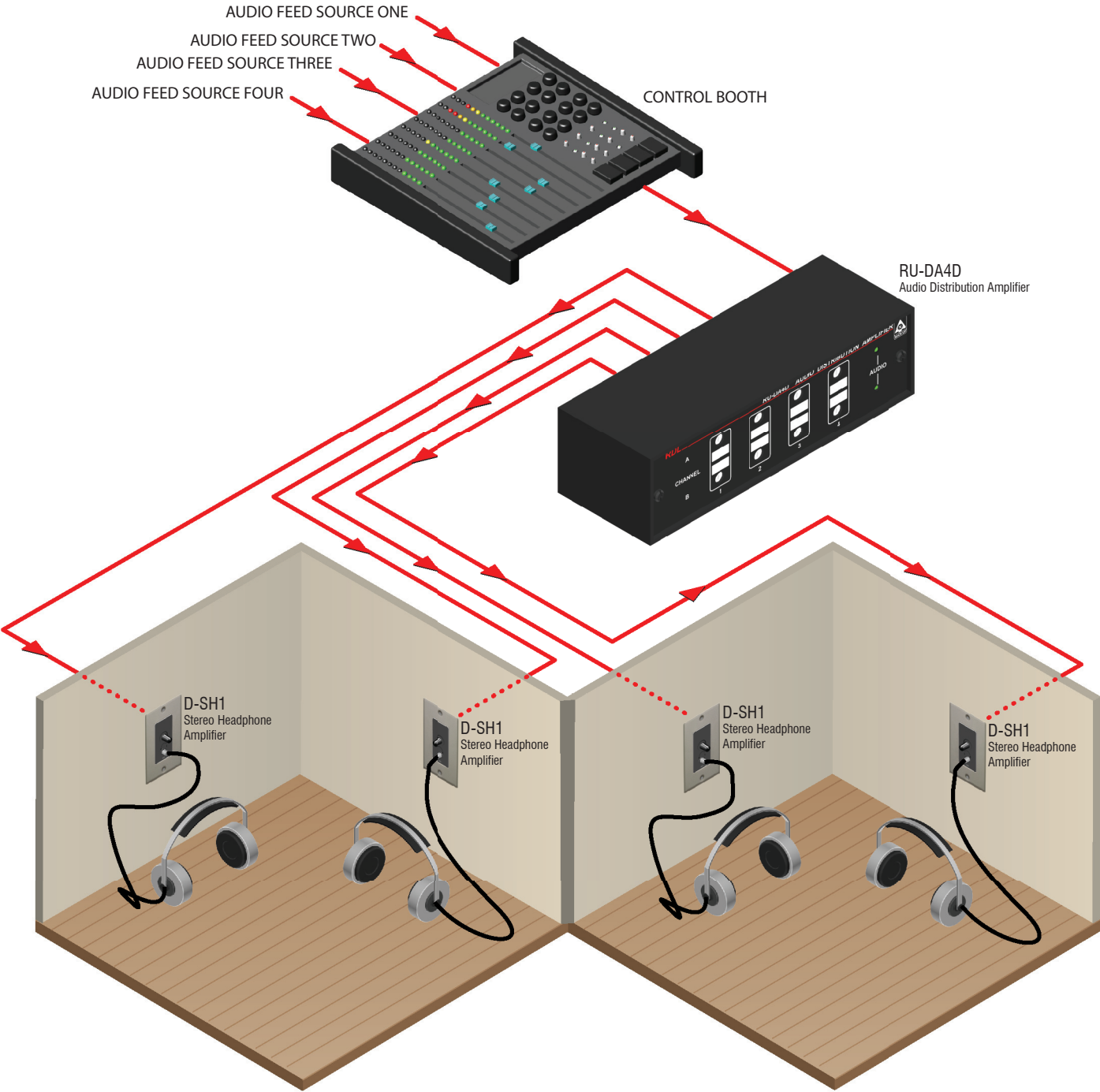


Description:

This is a simple four channel mixing system for choir microphones in a house of worship. The FP-MX4 Four Channel Audio Mixer mounts to any flat surface, typically above or near the choir loft. Each mic input has switch-selectable phantom power and an individual gain trimmer. The mixer can be set up and adjusted for different mic types or distances from the choir. The FP-MX4 output is available at both mic and line level, so it may be wired to either a mic or line input of the main house mixer. If choir monitors are installed, the FP-MX4 output is normally connected to feed only the main mix, not the monitors. This compact FP-MX4 provides simple, cost effective, studio-quality mic mixing.

STUDIO HEADPHONE MONITOR DISTRIBUTION

Four Channel Audio Distribution for Individual Audio Monitoring via Headphones



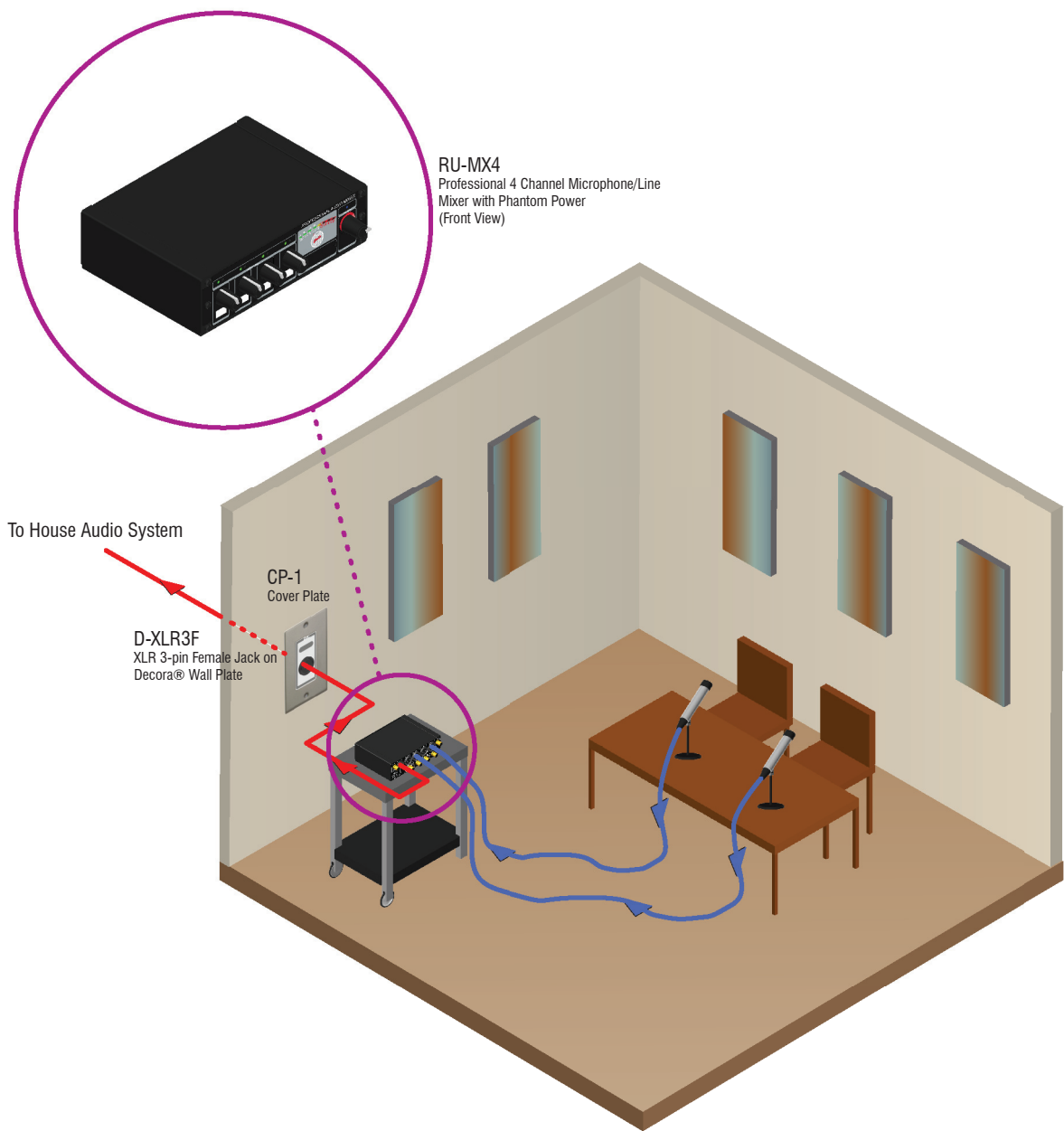
Description:

This example shows a four channel audio distribution system. The system uses a compact, studio quality, stereo audio distribution amplifier to feed four separate headphone amplifiers. The headphone amplifiers have individual volume controls for easy user adjustability. The output amplifiers deliver more than 50 mW into either high or low impedance headphones through a durable, metal 1/4" (6.3 mm) headphone jack.

Parts List	
Product	QTY
D-SH1	1
RU-DA4D	1
ST-PD5	1 (NOT SHOWN)

Recommended Pwr. Supplies	
Product	QTY
PS-24KS 24 Vdc 1000mA	1









Line Color Key	
—	Line Level Audio Signal
—	Loudspeaker Level
—	Control Signal
—	Video
—	Mic Level Audio Signal
—	Ground
—	Power
—	Miscellaneous

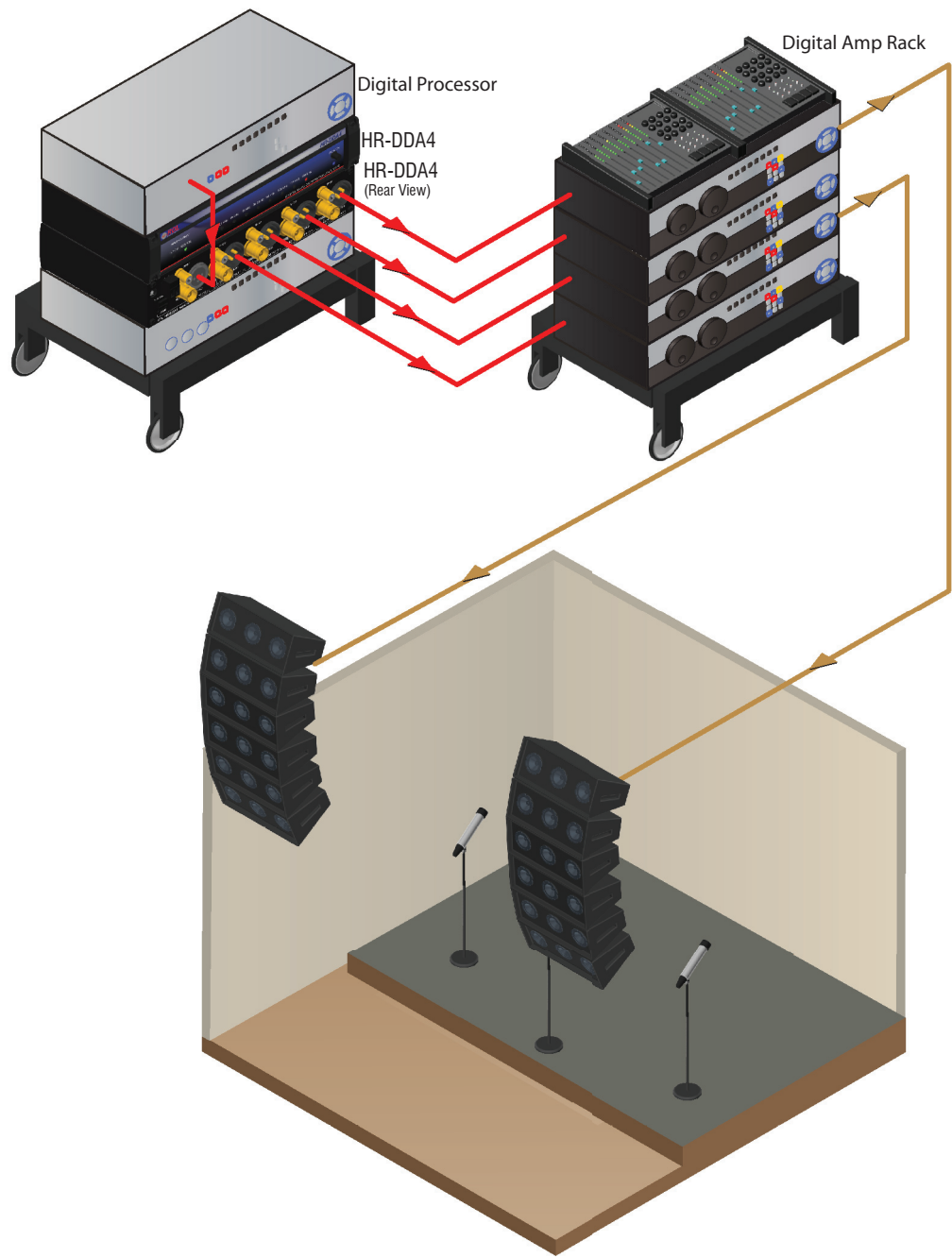


Description:
This system uses an RU-MX4 four-channel studio-quality mic/line mixer for rental staging applications. A cart is used for moving the mixer, microphones, and other AV gear to the location where they are required. The mixer output feeds a high quality XLR wall plate that is directly wired into the house audio system. The mixer provides user-adjustable input gain for level matching as well as an output trim and level meter for total adjustability in a compact package. The RU-MX4 provides phantom power for condenser microphones and has a switchable soft-knee compressor to avoid transient overloads.

Parts List	
Product	QTY
D-XLR3F	1
RU-MX4	1
CP-1 (W or G)	1

Recommended Pwr. Supplies	
Product	QTY
PS-24AS 24 Vdc 500 mA	1

Line Color Key	
	Line Level Audio Signal
	Loudspeaker Level
	Control Signal
	Video
	Mic Level Audio Signal
	Ground
	Power
	Miscellaneous











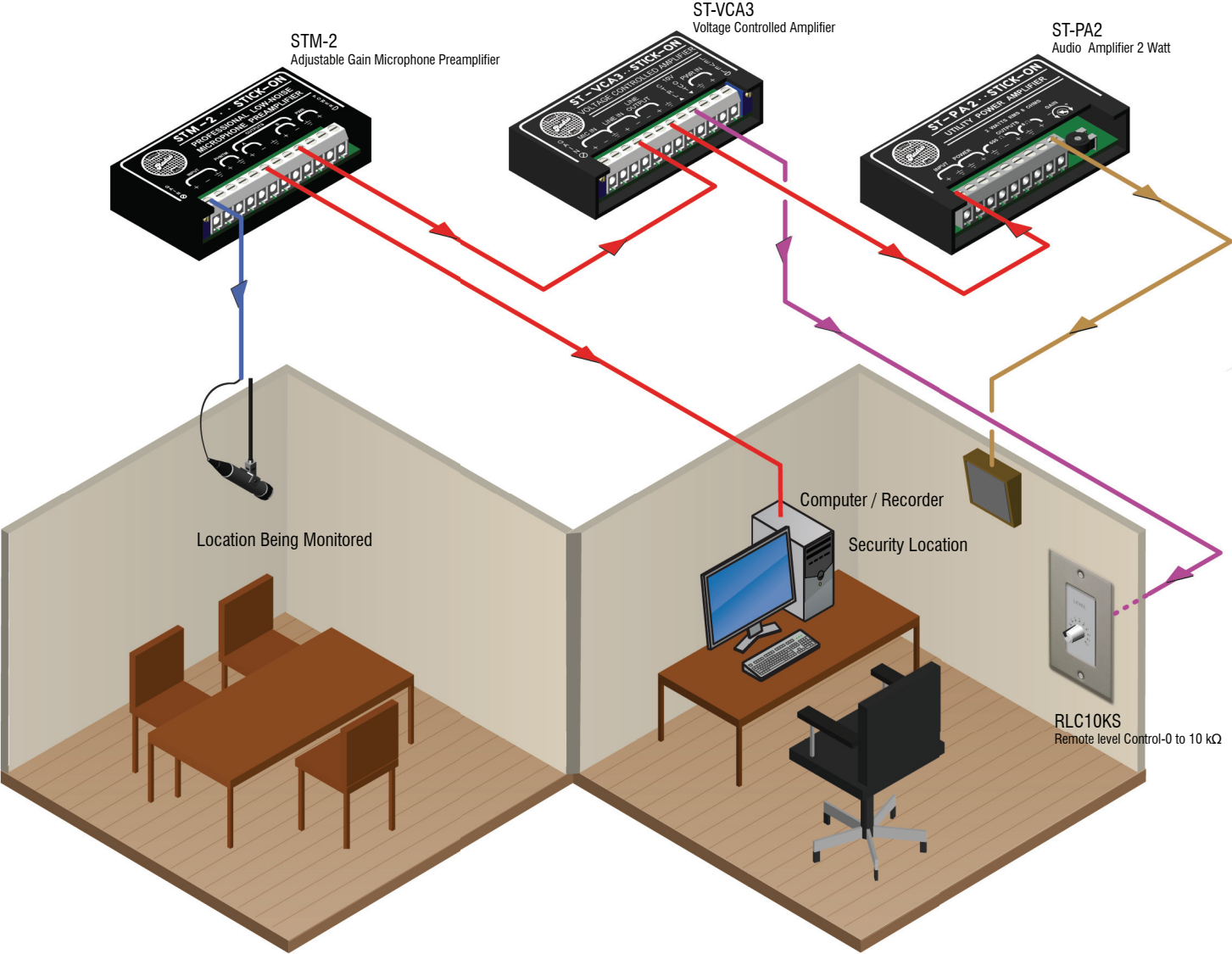
Description:

This system uses a digital audio distributor to route the venue audio out to multiple digital amplifiers. Any of the outputs of the HR-DDA4 can be switched to provide S/PDIF (coaxial or optical), AES/EBU, or AES3ID formats.

Parts List	
Product	QTY
HR-DDA4	1

Recommended Pwr. Supplies	
Product	QTY
PS-24AS 24 Vdc 500 mA	1

Line Color Key	
	Line Level Audio Signal
	Loudspeaker Level
	Control Signal
	Video
	Mic Level Audio Signal
	Ground
	Power
	Miscellaneous



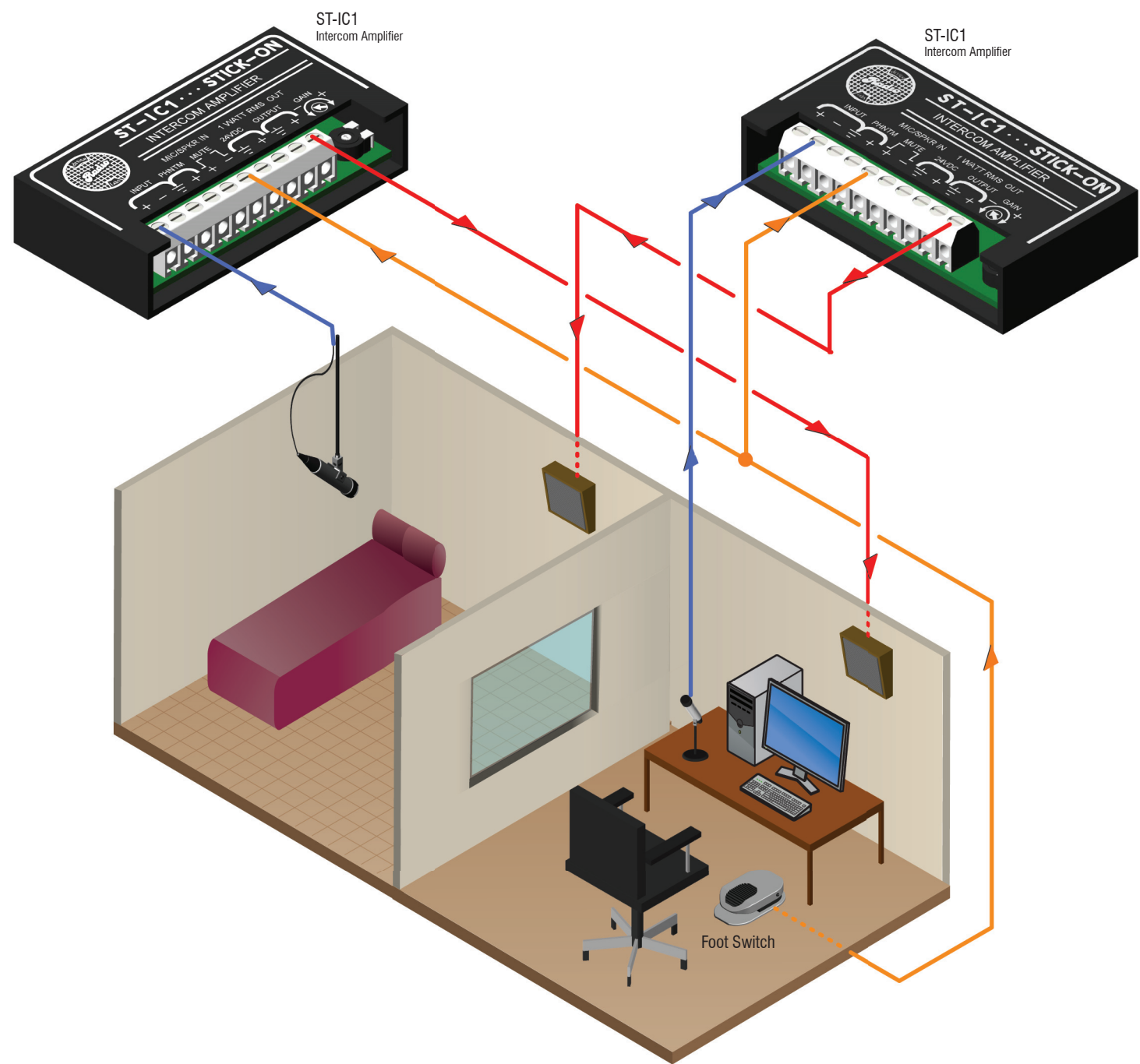
Description:

This system gives the user the ability to monitor and record audio from a remote location. The STM-2 Microphone Preamplifier feeds both a recorder and a monitor amplifier in the monitoring location. The 2 Watt amplifier feeds a single 8Ω speaker in the room where the recording is taking place. The remote volume control gives the user the ability to adjust the volume as needed. The wall control is offered in RDL standard white/gray or in stainless steel with custom labeling available.

Parts List	
Product	QTY
RLC10KS	1
STM-2	1
ST-PA2	1
ST-VCA3	1

Recommended Pwr. Supplies	
Product	QTY
PS-24AS 24Vdc 500mA	1

Line Color Key	
Red	Line Level Audio Signal
Purple	Loudspeaker Level
Yellow	Control Signal
Blue	Video
Green	Mic Level Audio Signal
Brown	Ground
Orange	Power
Grey	Miscellaneous



Description:

This intercom system allows a health care worker to communicate with a patient in the adjacent room while keeping both hands free for taking notes, using a computer, or accessing reference material. This system is set up with two intercom amplifiers that are both switchable by the health care worker. A foot switch provides a dry contract to control the directional flow of the audio. The ST-IC1 intercom amplifiers can provide phantom power to condenser microphones and will directly drive a low impedance speaker.

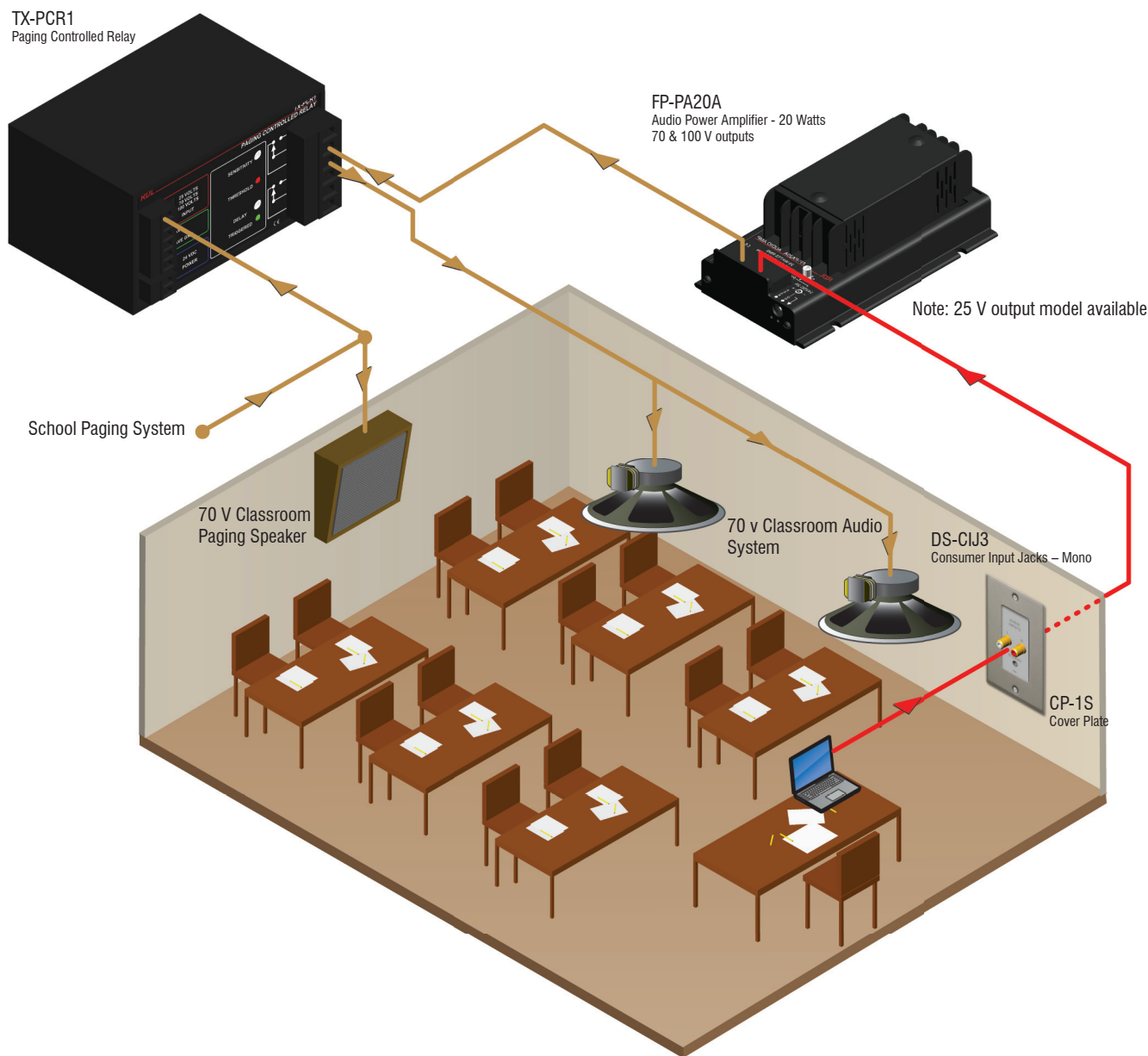
Parts List	
Product	QTY
ST-IC1	2

Recommended Pwr. Supplies	
Product	QTY
PS-24AS 24 Vdc 500 mA	1

Line Color Key	
Red	Line Level Audio Signal
Orange	Loudspeaker Level
Blue	Control Signal
Yellow	Video
Green	Mic Level Audio Signal
Grey	Ground
Brown	Power
Black	Miscellaneous

SCHOOL AUDIO/PAGING SYSTEM

School Paging Interrupts Classroom Audio



Description:

This system uses a TX-PCR1 Paging Controlled Relay to interrupt classroom audio to allow a page to be heard clearly. Classroom audio is fed through a wall plate to the 70 Volt amplifier. The 70 V speaker output is routed through normally closed contacts of the paging controlled relay to the classroom speakers. The paging controlled relay samples the 70 V audio to the classroom paging speaker. Whenever school-wide paging is active the relay is energized and the classroom audio is interrupted. This allows the page to be heard without interference from the classroom audio. The wall plate used in this example is available in the normal RDL grey/white or in stainless steel with custom labeling available.

Parts List

Product	QTY
CP-1S	1
DS-CIJ3D	1
FP-PA20A	1
TX-PCR1	1

Recommended Pwr. Supplies

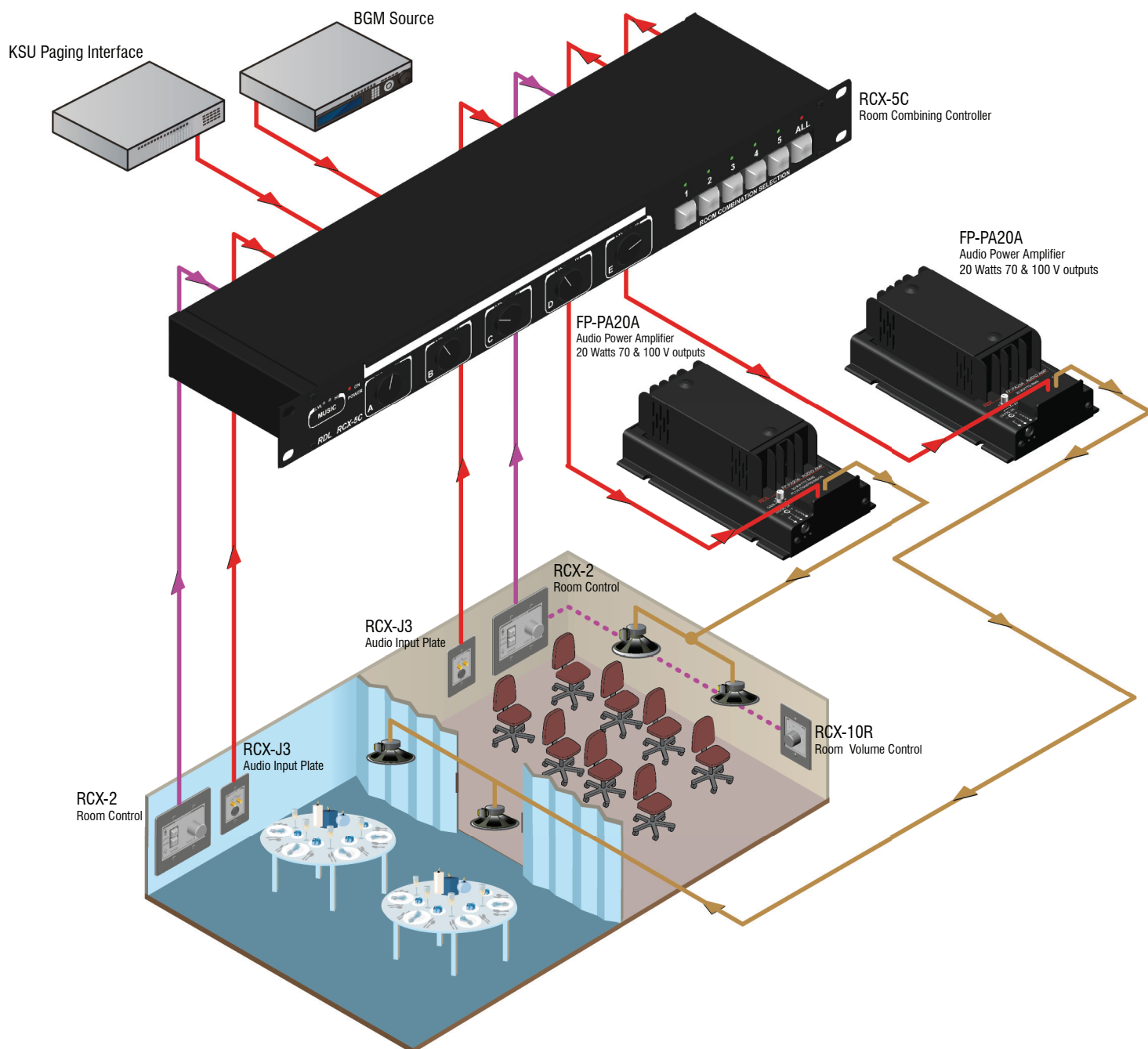
Product	QTY
PS-24U2A 24 Vdc 2000 mA	1
PS-24AS 24 Vdc 500 mA	1

Line Color Key

Red	Line Level Audio Signal
Blue	Loudspeaker Level
Green	Control Signal
Yellow	Video
Purple	Mic Level Audio Signal
Black	Ground
Brown	Power
Orange	Miscellaneous

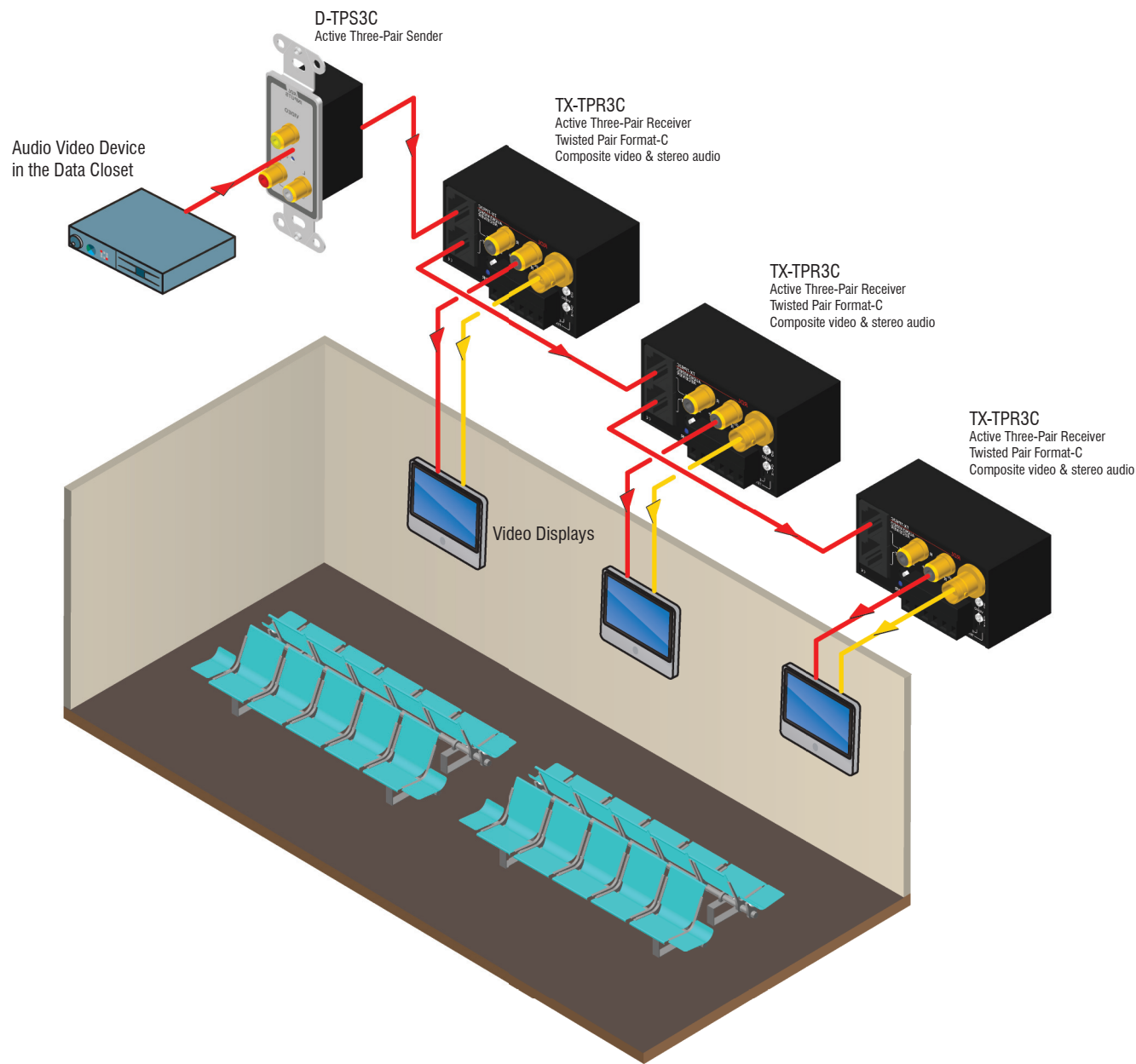
BASIC TWO ROOM COMBINING SYSTEM

Room Combining System with Background Music and Volume Control



Description:

This system is set up in a basic two room combining configuration. The rooms can be separated/joined by a movable wall. The room audio can be combined and uncombined at the main control unit in the rack. Each room is equipped with a local audio input wall plate that accepts both mic-level and line-level audio. A room control plate allows volume control and the selection of local sources or background music. The second room in this system is equipped with an additional volume control at the opposite end of the room. When the rooms are separated the local inputs are associated with that room only. When the rooms are combined, the local audio from each room is combined, creating one large room. This example uses an FP-PA20A 20 Watt 70 V amplifier for each room. Facility-wide paging is available through the rack mounted system controller. The RCX-5C can be used for room combining systems of two to five rooms.











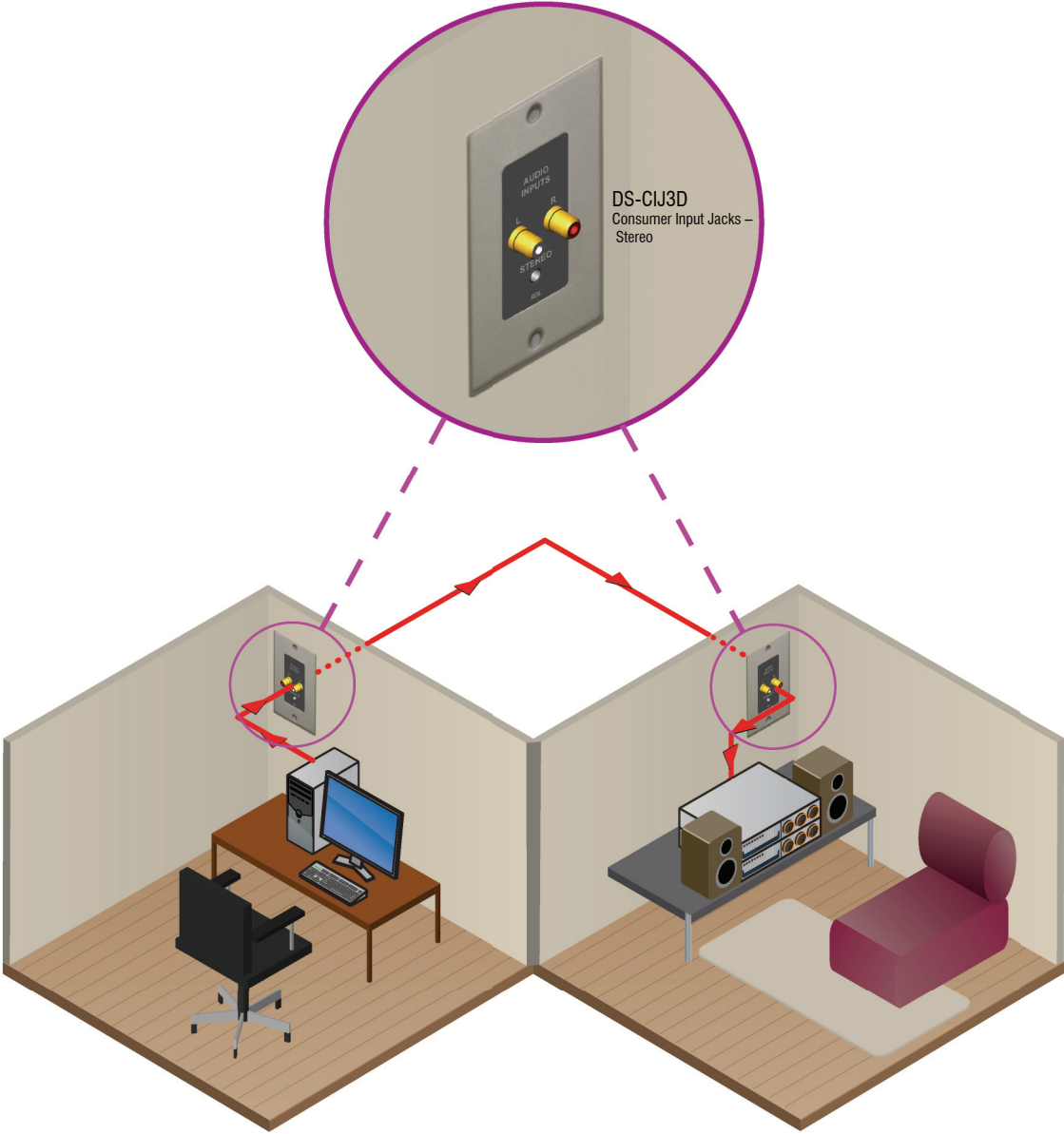
Description:

This RDL Format-C twisted pair system allows for the distribution of both audio and composite video over a standard CAT5 cable. This simplifies and speeds up system installation by allowing one economical cable to deliver both audio and video signals. The Format-C sender in the data closet feeds the audio and video to receivers mounted behind each flat panel display. Twisted pair cables loop from one receiver to the next. A Format-C distributor would allow for configurations with multiple distribution branches.

Parts List	
Product	QTY
D-TPR3C	1
TX-TPR3C	3

Recommended Pwr. Supplies	
Product	QTY
PS-24KS 24 Vdc 1000 mA	1

Line Color Key	
	Line Level Audio Signal
	Loudspeaker Level
	Control Signal
	Video
	Mic Level Audio Signal
	Ground
	Power
	Miscellaneous











Description:

This simple setup allows the audio from a computer or other audio source to be shared with the audio system in another room. In this example the audio is fed from the computer into a wall plate that is wired directly to a wall plate in the second room. The two wall plates are connected with two balanced shielded audio cables. These wall plates are available in RDL's grey/white color or in stainless steel. Custom labeling is available.

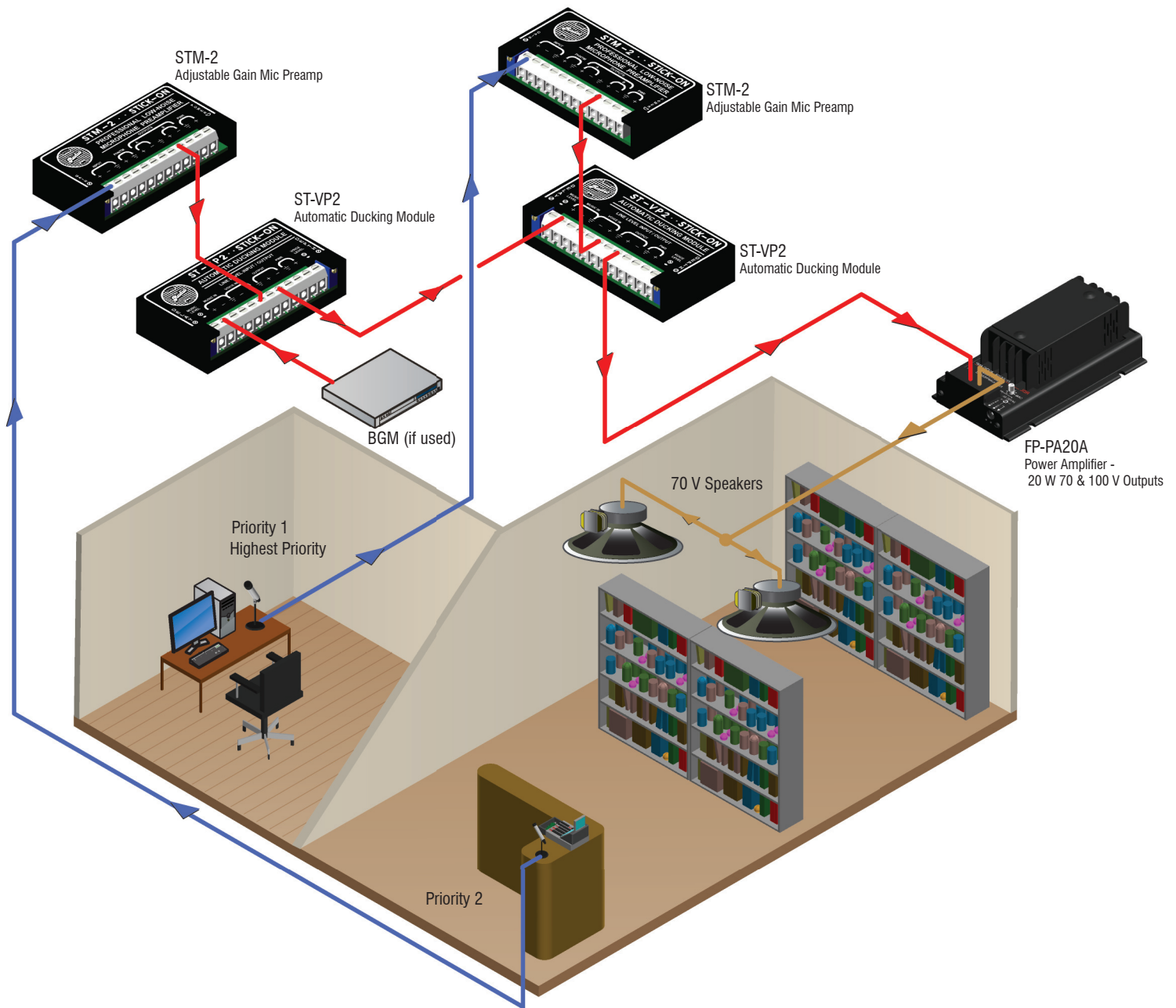
Parts List	
Product	QTY
DS-CIJ3D	2

Recommended Pwr. Supplies	
Product	QTY
N/A	

Line Color Key	
	Line Level Audio Signal
	Loudspeaker Level
	Control Signal
	Video
	Mic Level Audio Signal
	Ground
	Power
	Miscellaneous

PRIORITIZED PAGING

Automatic Ducking with Multiple Paging Locations



Description:

This application provides multiple paging locations, with priority assigned to each location. Each location has a mic equipped with a PTT (push-to-talk) momentary pushbutton. The STM-2 preamp for each microphone should be installed near the associated mic. Wiring between each STM-2 output and the corresponding ST-VP2 is balanced, connected with shielded or unshielded twisted-pair cable. When any microphone is used, the music fades down and paging becomes active. The highest priority mic overrides the lower priority mic(s). This arrangement may be carried out for an unlimited number of paging locations.

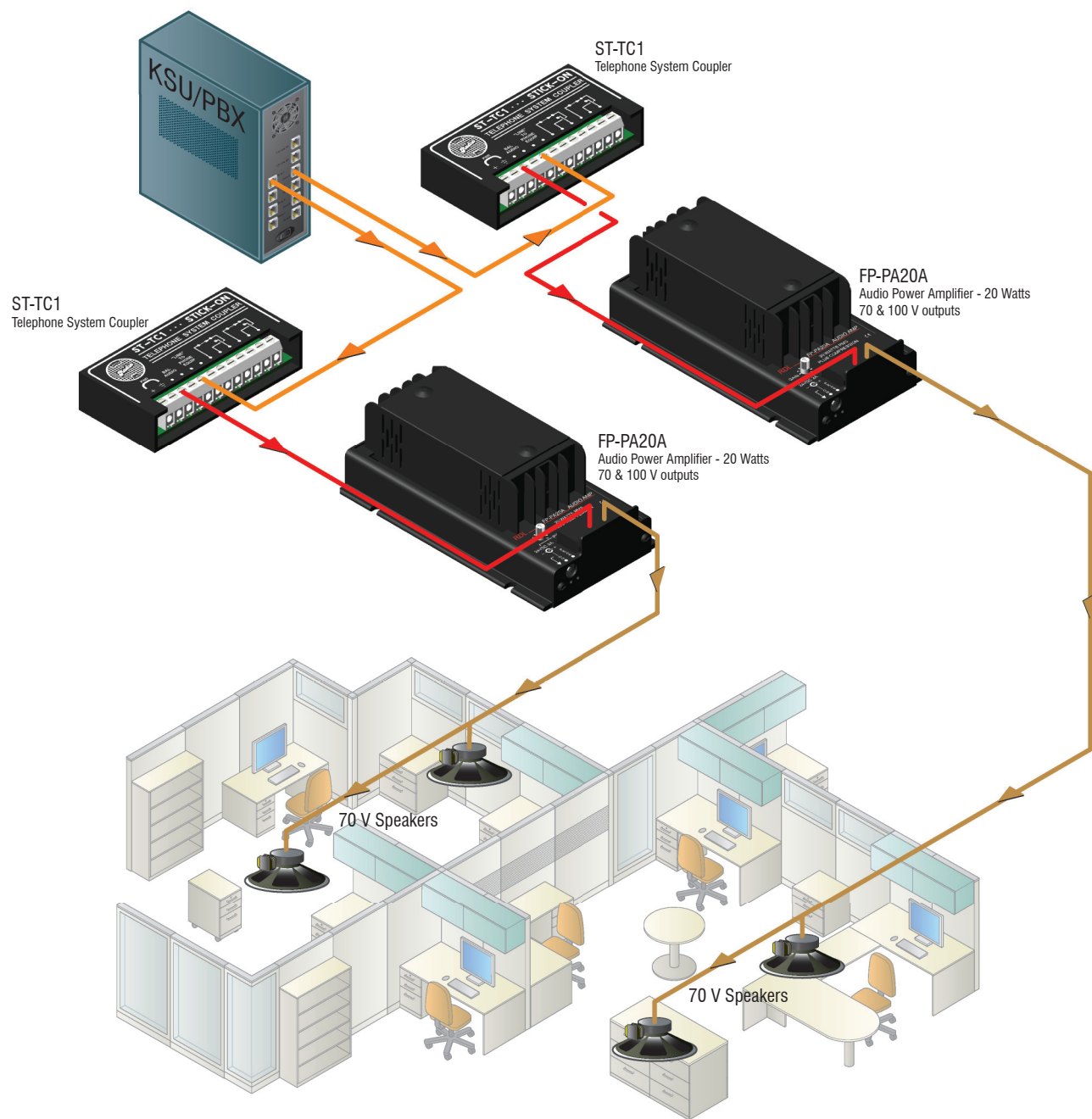
The FP-PA20A 20 Watt Power Amplifier feeding 70 Volt speakers is used in this example. RDL offers a wide range of power amplifiers for paging and public address applications.

Parts List	
Product	QTY
FP-PA20A	1
STM-2	2
ST-VP2	2

Recommended Pwr. Supplies	
Product	QTY
PS-24AS 24 Vdc 500 mA	1
PS-24U2A 24 Vdc 2 A	1

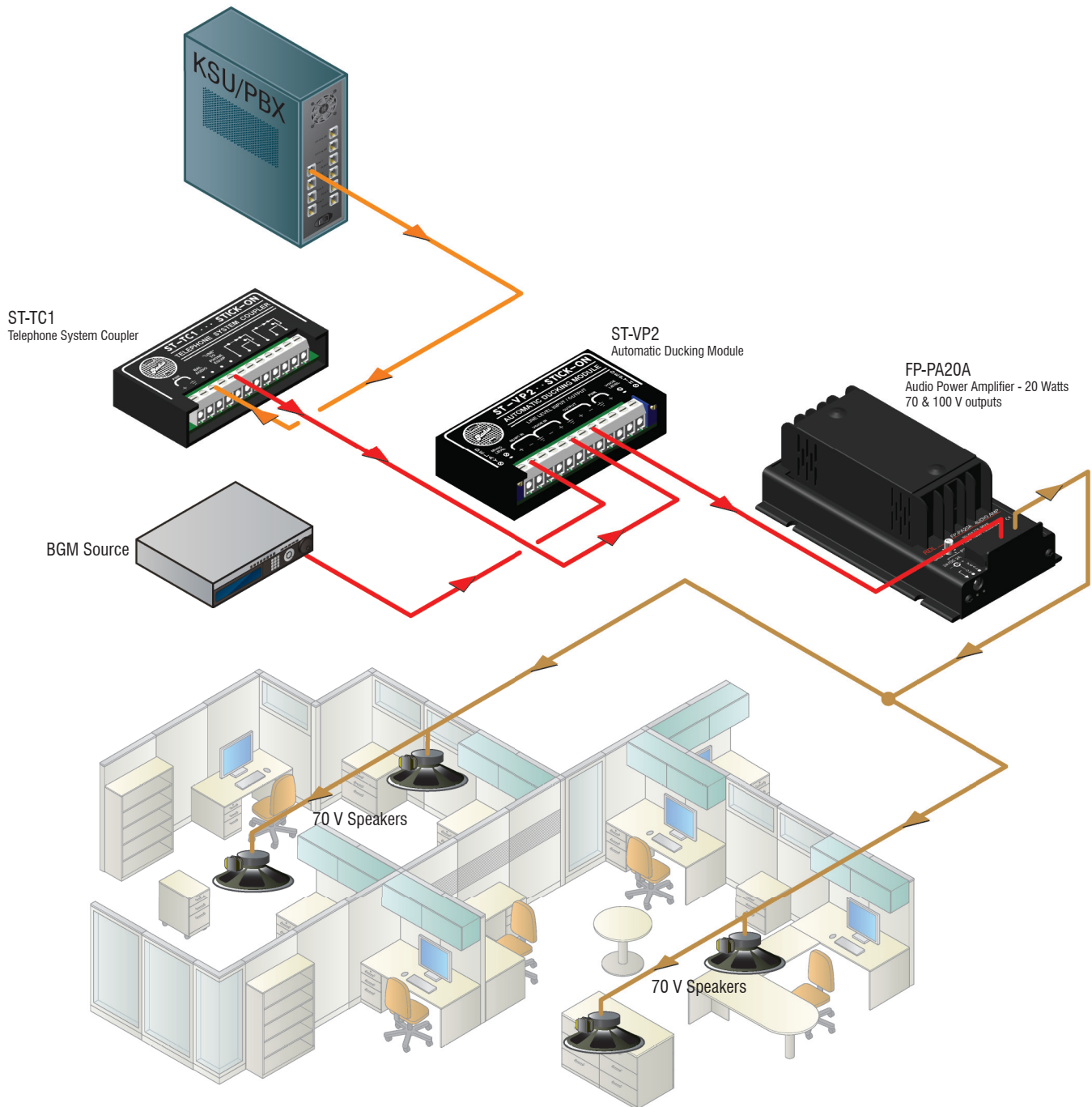
Note: If an STM-2 Mic Preamp is located separate from the other modules, it may be powered by locally using an additional PS-24AS.

Line Color Key	
—	Line Level Audio Signal
—	Loudspeaker Level
—	Control Signal
—	Video
—	Mic Level Audio Signal
—	Ground
—	Power
—	Miscellaneous



Description:

This example shows how to utilize telephone line (input) ports on an existing KSU to add two zones of paging from the telephone system. The ST-TC1 acts as a virtual phone line when interfaced with a KSU FX port. When either "line" is selected using any phone instrument connected to the KSU, the associated ST-TC1 provides an audio path from the instrument mouthpiece to the paging amplifier. In this example two FP-PA20A 70 volt amplifiers are powering 70 Volt loudspeakers in the two office areas. The ST-TC1 provides relay contact closures when it is activated by a telephone instrument. The relay contacts can be used to provide additional functions when paging is active, including visual indicators or triggering a radio transmitter.

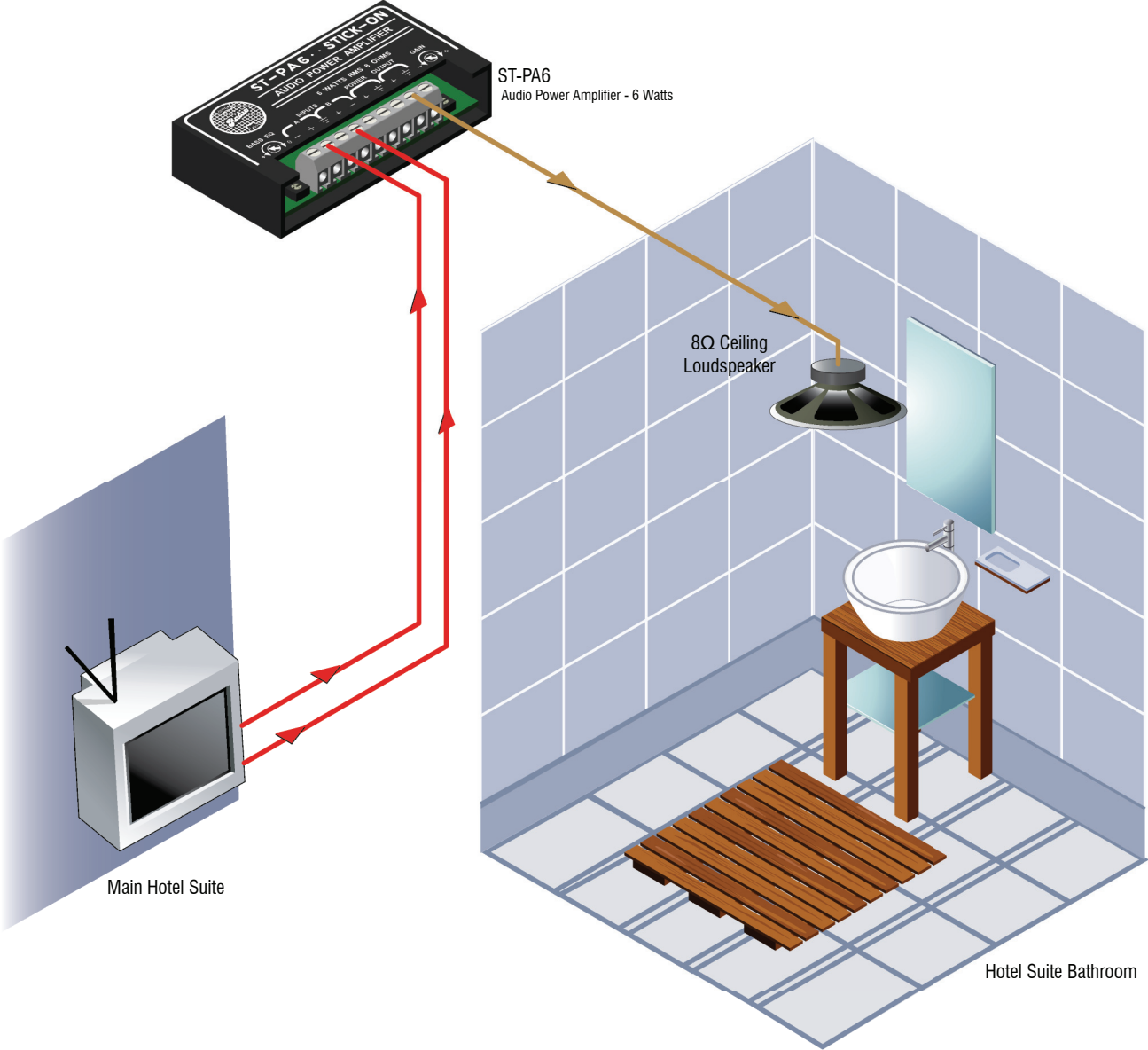


Description:

This example shows how to utilize a telephone line (input) port on an existing KSU to add paging from the telephone system to a background music (BGM) system. The ST-TC1 acts as a virtual telephone line when connected to a KSU FX port. When that "line" is selected using any phone instrument connected to the KSU, the ST-TC1 provides audio from the instrument mouthpiece to the ST-VP2 Automatic Ducking Module. The ST-VP2 automatically ducks the background music audio for the duration of the page, then ramps up the music at the end of the page. In this example an FP-PA20A 70 volt amplifier is powering 70 volt loudspeakers in the office area. The ST-TC1 provides relay contact closures when it is activated by a telephone instrument. The relay contacts can be used to provide additional functions when paging is active, including visual indicators or triggering a radio transmitter.

HOTEL BATHROOM AUDIO FROM TV

Amplifier Provides Speaker-Level Mono Mix



Description:

This drawing provides a simple way to listen to hotel room television audio in the adjacent bathroom.

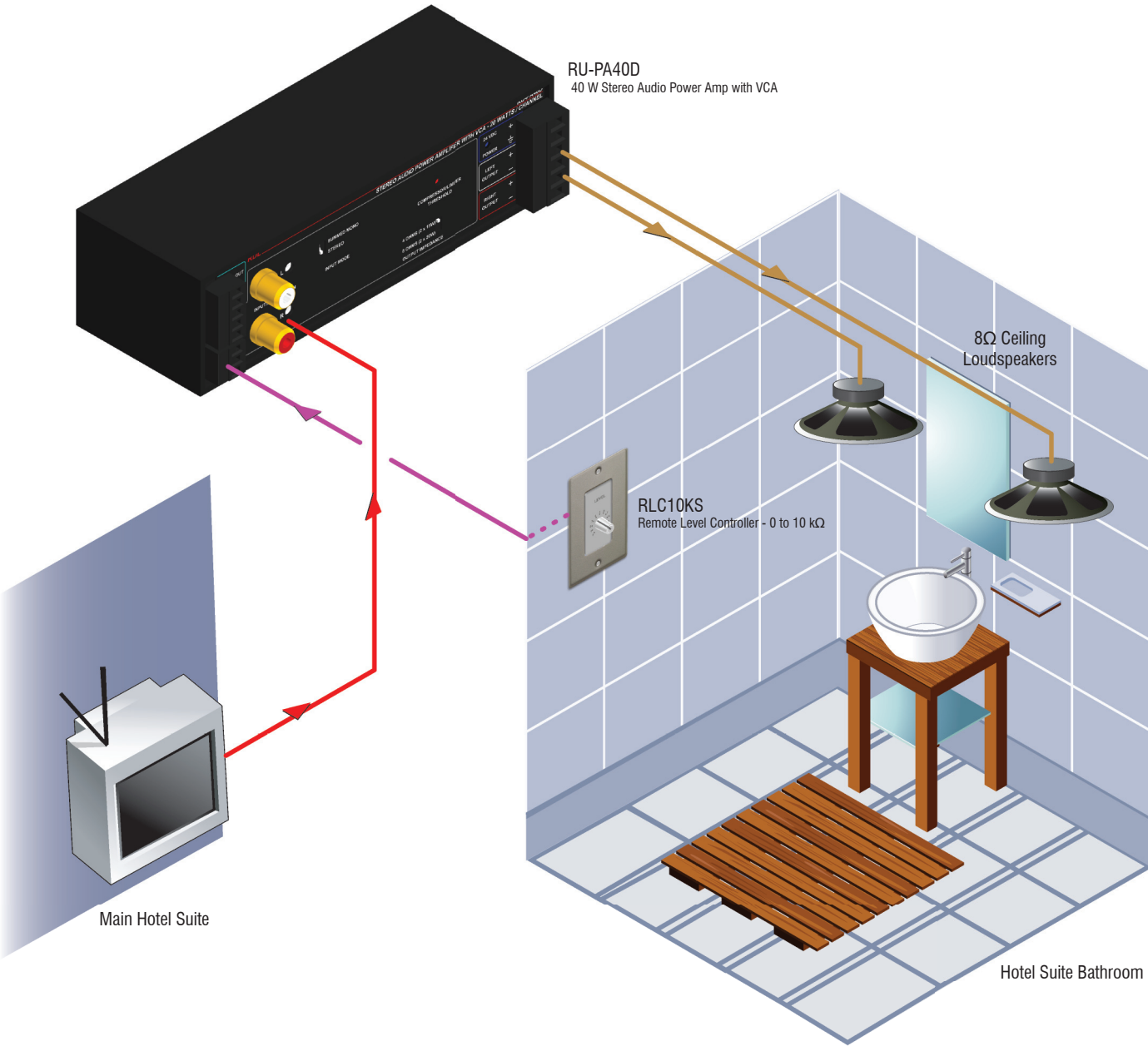
The ST-PA6 has several unique features that make it ideal for this application. Its input allows combining a stereo signal to a mono sum while retaining isolation between the two input signals. The ST-PA6 has a bass equalization adjustment that allows the installer to perform some loudness compensation.

This example shows the use of a variable level output from the television receiver. The bathroom audio level follows the level at the television receiver.

Parts List	
Product	QTY
ST-PA6	1

Recommended Pwr. Supplies	
Product	QTY
PS-24AS 24 Vdc 500 mA	1

Line Color Key	
—	Line Level Audio Signal
—	Loudspeaker Level
—	Control Signal
—	Video
—	Mic Level Audio Signal
—	Ground
—	Power
—	Miscellaneous



Description:









Providing stereo monitor speakers with remote volume control in a hotel suite bathroom is done easily with the RU-PA40D.

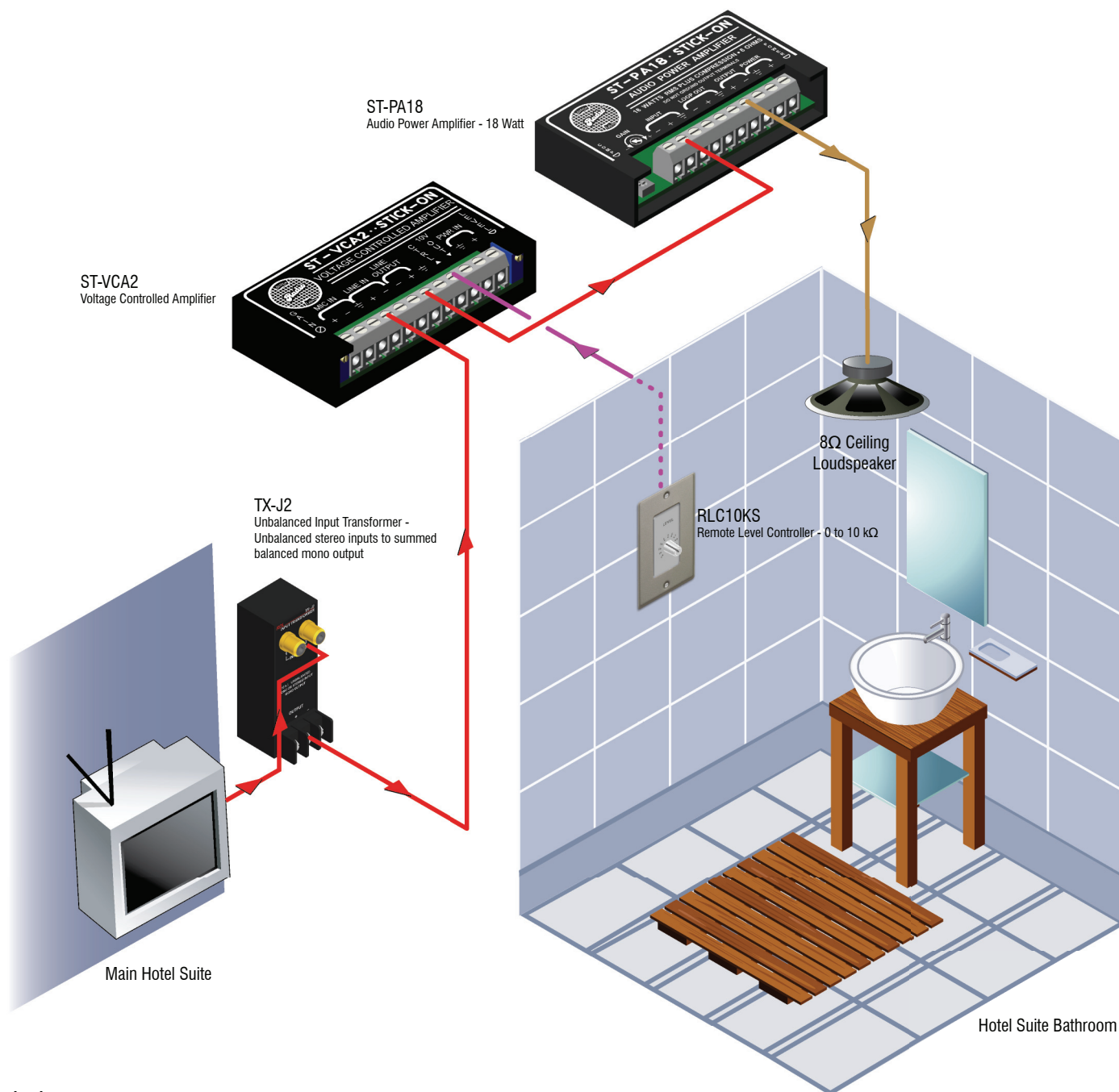
The extremely compact RU-PA40D drives stereo 4 or 8 Ohm speakers and has an integral VCA which allows use of a 10 kΩ linear potentiometer to control level. This example uses the RLC10KS remote control to create an aesthetically pleasing and professional appearance. The RU-PA40D also features a studio quality compressor/limiter to control clipping and maximize average output levels. An input selector switch allows the unit to output a mono sum in installations where speaker placement cannot produce proper stereo imaging.

This example uses the fixed output level from the television receiver. The bathroom audio level is controlled by the RLC10KS remote control.

Parts List	
Product	QTY
RLC-10KS	1
RU-PA40D	1

Recommended Pwr. Supplies	
Product	QTY
RU-PA40D Power Supply	1

Line Color Key	
	Line Level Audio Signal
	Loudspeaker Level
	Control Signal
	Video
	Mic Level Audio Signal
	Ground
	Power
	Miscellaneous



Description:

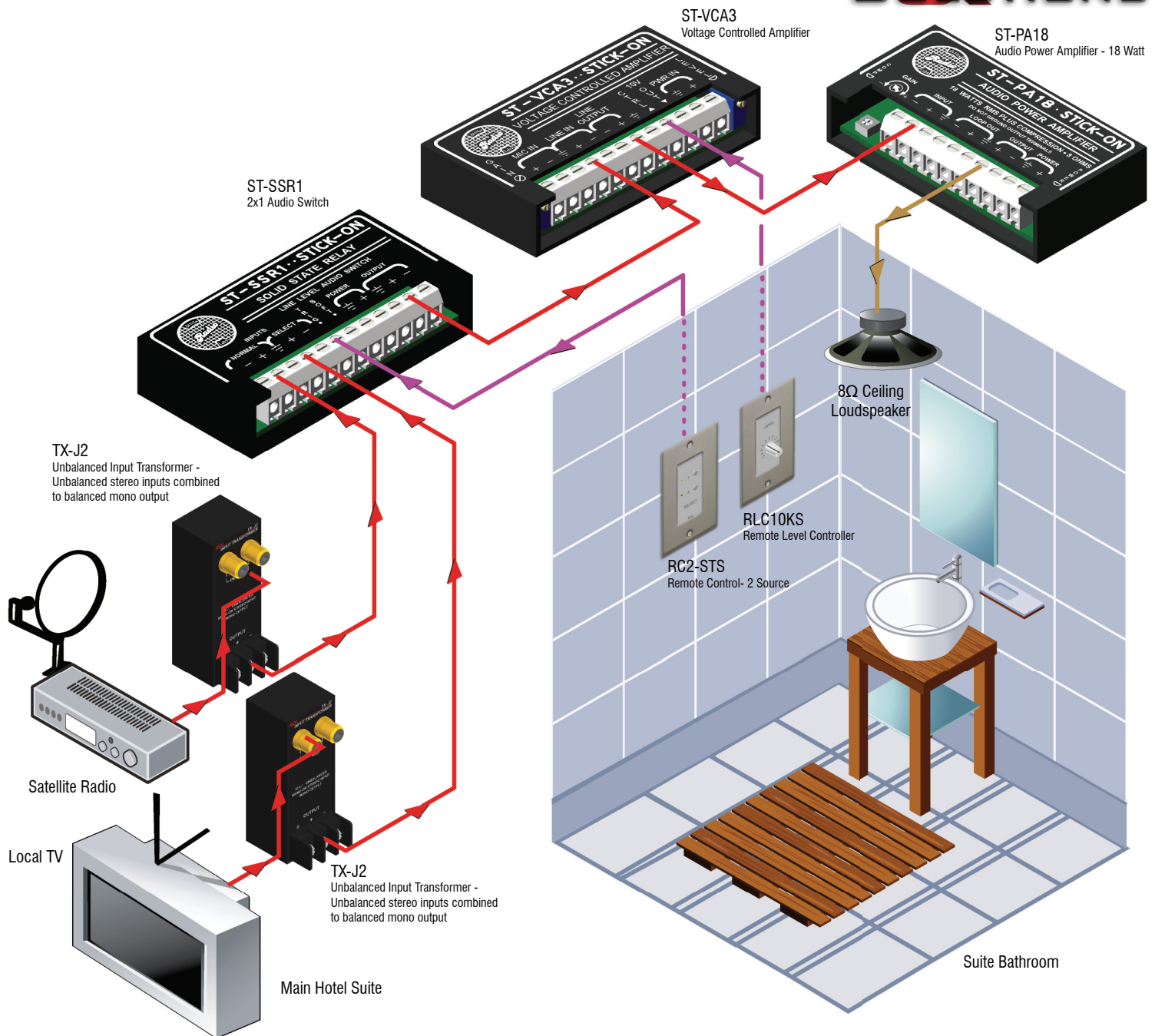
The compact size of the RDL modules make installation of a monitor speaker with remote volume control in a hotel suite bathroom an easy task.

The TX-J2 provides a balanced mono sum of the stereo unbalanced output of the television receiver. The ST-VCA3 adjusts audio level set using the RLC10KS that is wall-mounted in the bathroom. The ST-PA18 power amplifier incorporates an on-board compressor/limiter and can provide up to 18 Watts RMS to power an 8 Ohm speaker. The full electronic package is small enough to easily be placed in a TV armoire.

This example uses the fixed output level from the television receiver. The bathroom audio level is controlled by the RLC10KS remote control.

HOTEL BATHROOM AUDIO

Remote Level Control and Source Selection

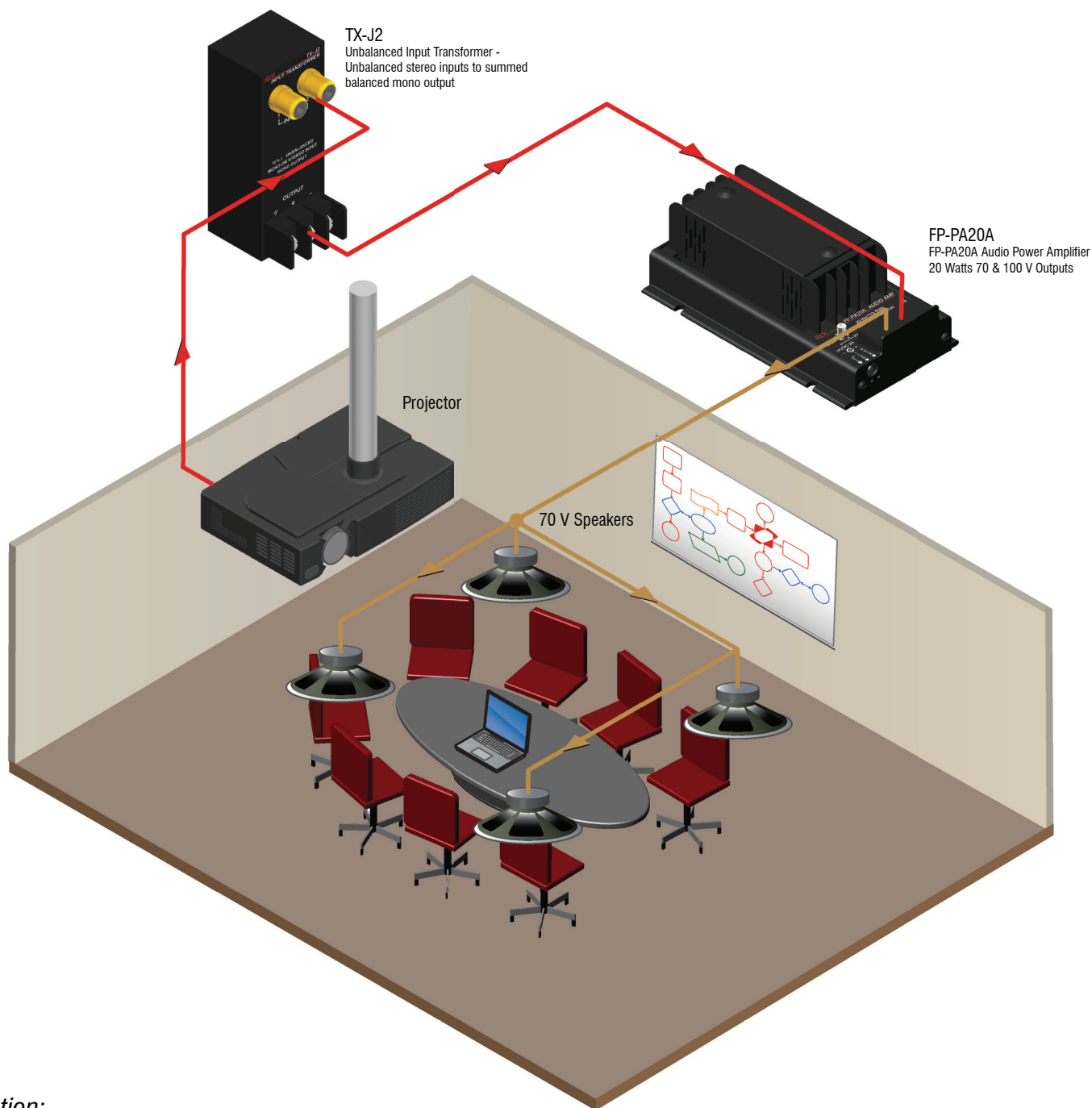


Description:

The compact size of RDL modules allows the creation of a system to provide high quality sound in a nearby room without dedicating space for electronic equipment. The example pictured allows remote level control and source selection using equipment which can be placed in electrical boxes or tucked into a TV armoire.

The TX-J2 provides a balanced mono signal from the stereo unbalanced sources used in this system. The ST-SSR1 allows switching between the satellite radio receiver and the television audio in the adjacent room. It is controlled by the RC2-ST2S. The ST-VCA3 adjusts audio level set by the RLC10KS mounted in the wall. The power amplifier is an ST-PA18 which incorporates an on-board compressor/limiter. The ST-PA18 can provide up to 18 Watts RMS to power an 8 Ohm speaker. The completed system projects a professional, aesthetically pleasing image for years of reliable operation.

This example uses fixed output levels from the two sources. The bathroom audio level is controlled by the RLC10KS remote control.



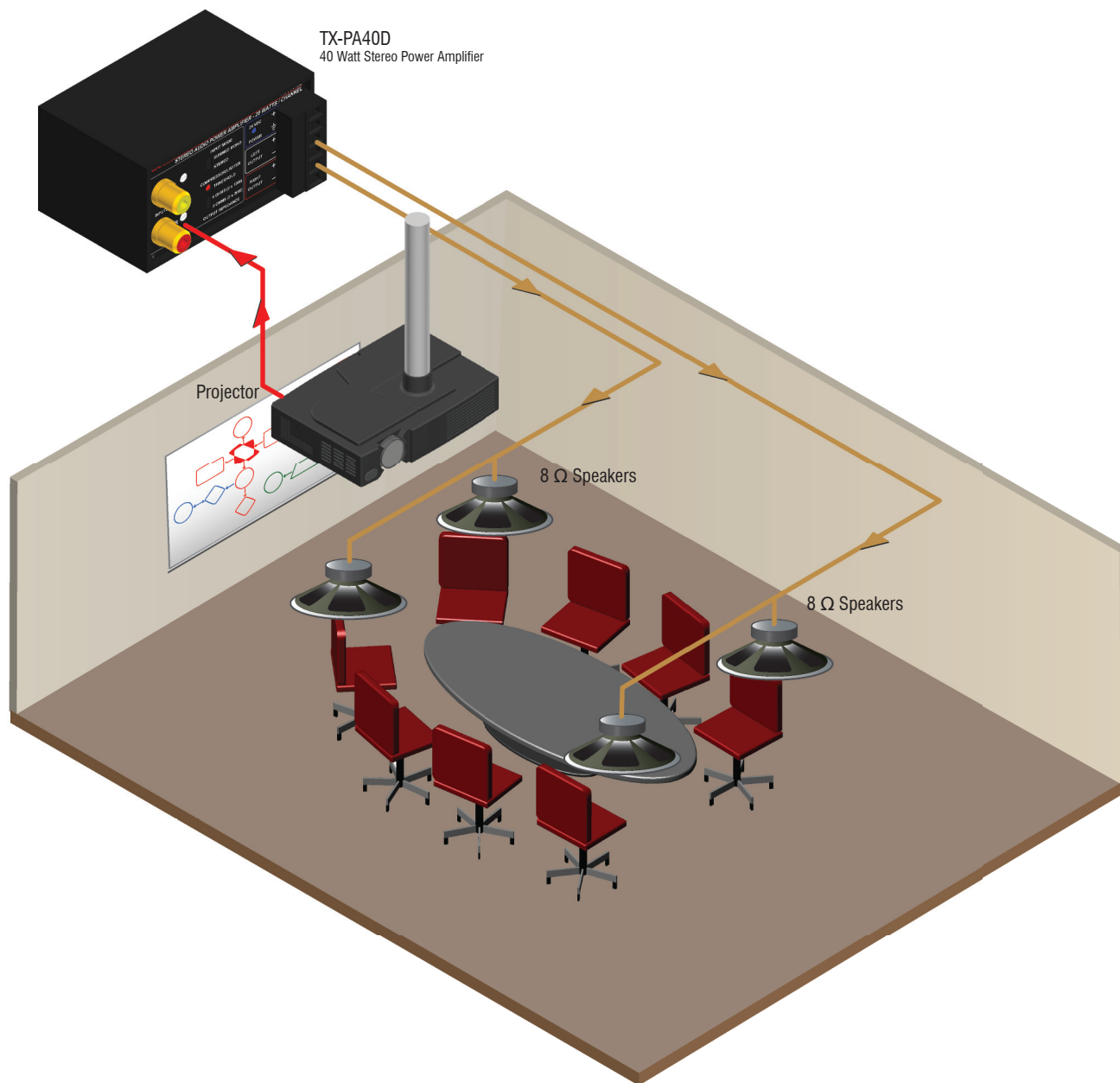
Description:

The constant voltage speaker system makes it easy to distribute audio throughout a facility. Speakers can be placed above the listeners tapped for appropriate power levels totalling up to the total amplifier capacity. The TX-J2 is used to provide a balanced mono signal from the projector's unbalanced stereo output. For this conference room, the FP-PA20A constant-voltage (70 or 100 Volt) amplifier provides up to 20 Watts RMS to speakers located directly above the seating area. The integral compressor/limiter allows high average power levels of audio free from clipping and distortion. The FP-PA20A can be used in applications that previously would have required amplifiers rated for much higher power levels.

In this example, the amplifier is feeding four speakers at equal power levels. The 70 Volt system makes it easy to distribute audio so that clear, intelligible audio is available for all listeners.

PRESENTATION AUDIO

Quality Audio System for Boardroom or Conference Room



Description:

Many projectors incorporate source switching and audio level adjustment into their remote controls. They seldom offer a high quality audio power amplifier suitable for a large boardroom or conference room. The TX-PA40D fills that need. A stereo amplifier with integral compressor/limiter, the TX-PA40D is capable of maintaining high average audio power levels free from clipping and distortion. There is an input switch to sum the stereo inputs for those facilities where speaker placement does not allow for good stereo imaging.

In this example, the amplifier is feeding two pairs of 8 Ohm speakers so that four speakers can be used to evenly distribute the audio throughout the room. The compact footprint of the TX-PA40D allows it to be mounted to the projector or other convenient location. This compact, professional amplifier may be mounted in just a few square inches of space.



RDL
Radio Design Labs

www.rdlnet.com

Parts List	
Product	QTY
TX-PA40D	1

Recommended Pwr. Supplies	
Product	QTY
TX-PA40D POWER SUPPLY	1, included

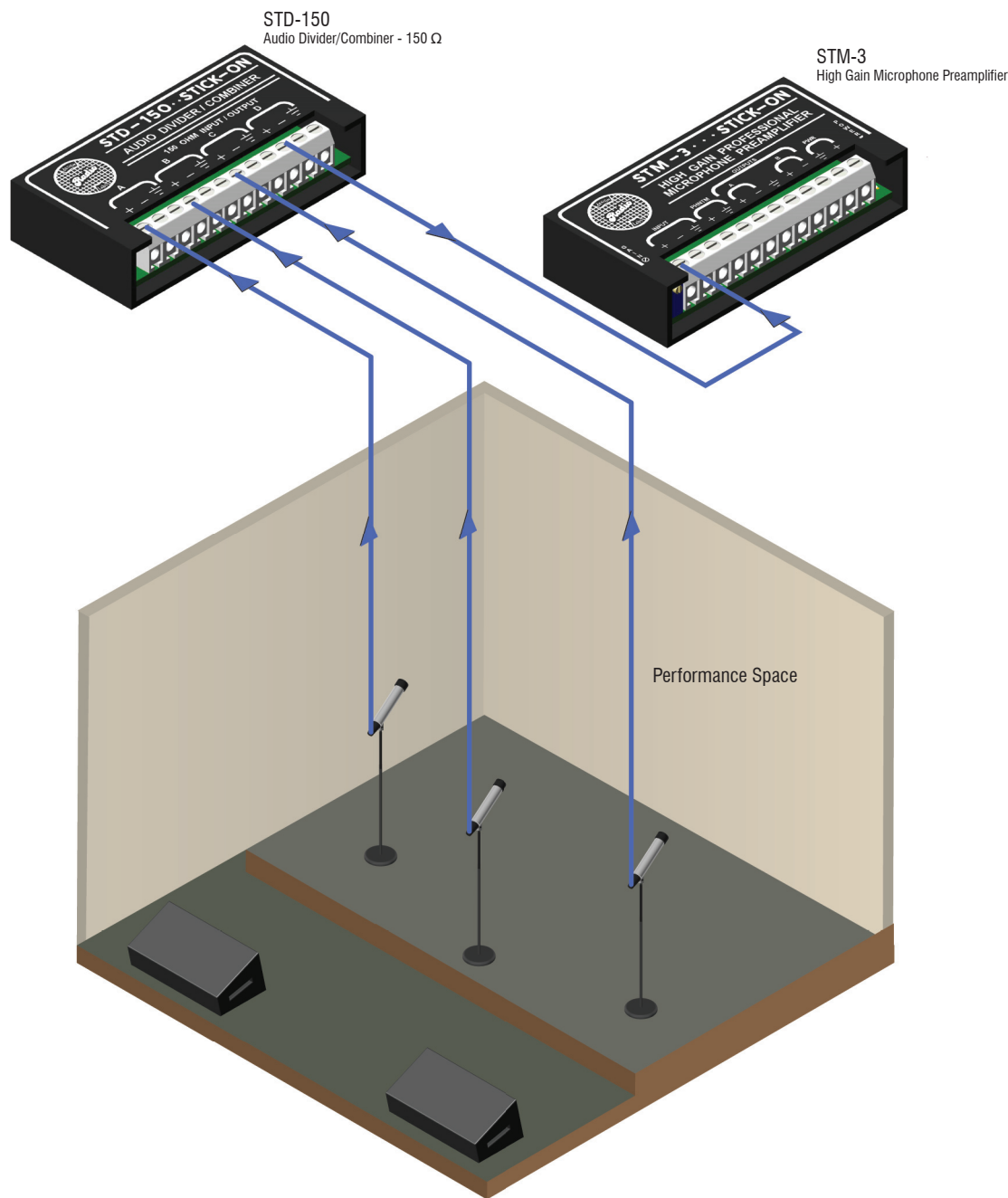
Line Color Key	
Red	Line Level Audio Signal
Orange	Loudspeaker Level
Purple	Control Signal
Yellow	Video
Blue	Mic Level Audio Signal
Green	Ground
Brown	Power
Black	Miscellaneous

MIXING THREE PHANTOM-POWERED MICROPHONES

Simple Three Mic Mixing Solution

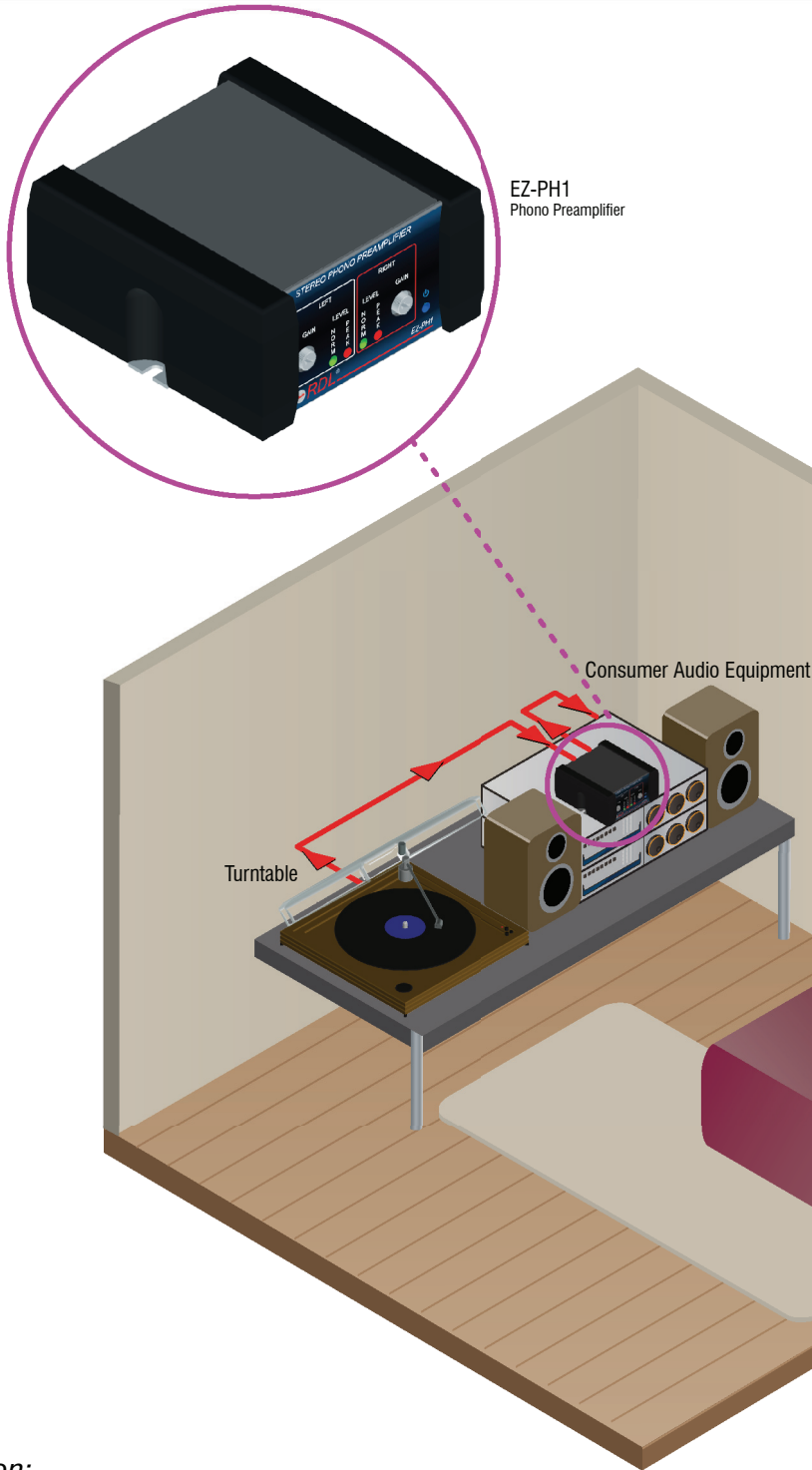
**SYSTEMS
SOLUTIONS**

AN-2071



Description:

The mixing of multiple phantom-powered mics is often required in various stage or public meeting room installations. The STD-150 mixes the mic signals equally and passes phantom voltage generated by the mic preamp back to each of the mics. Each mic should have the same gain and should operate from a wide range of phantom voltage, as there is a small phantom voltage loss through the STD-150. The STM-3 works well in most applications but for critical, low noise installations the FP-MP1 is recommended. The gain of the three microphones is set on the STM-3. If individual mic gain adjustment is desired, use the RDL FP-MX4 (4 channel ultra-low-noise mixer with switchable phantom and gain for each mic).



Description:

This application illustrates how to interface a turntable with common audio equipment not equipped with phono inputs. The EZ-PH1 is a compact phono preamp that produces an unbalanced stereo output using the RIAA equalization curve. Input and output connections are made through gold-plated RCA jacks for easy connection to an amplifier auxiliary input or a CD recorder line input. Gain trimmers for each channel and dual-LED VU meters make it easy to set preamp levels. The EZ-PH1 is the ideal solution for phonograph record playback or dubbing. A grounding screw is provided for connection to the tone arms of quality turntables.

The EZ-PH1 is shipped with a high efficiency power supply that connects to a locking dc power jack.

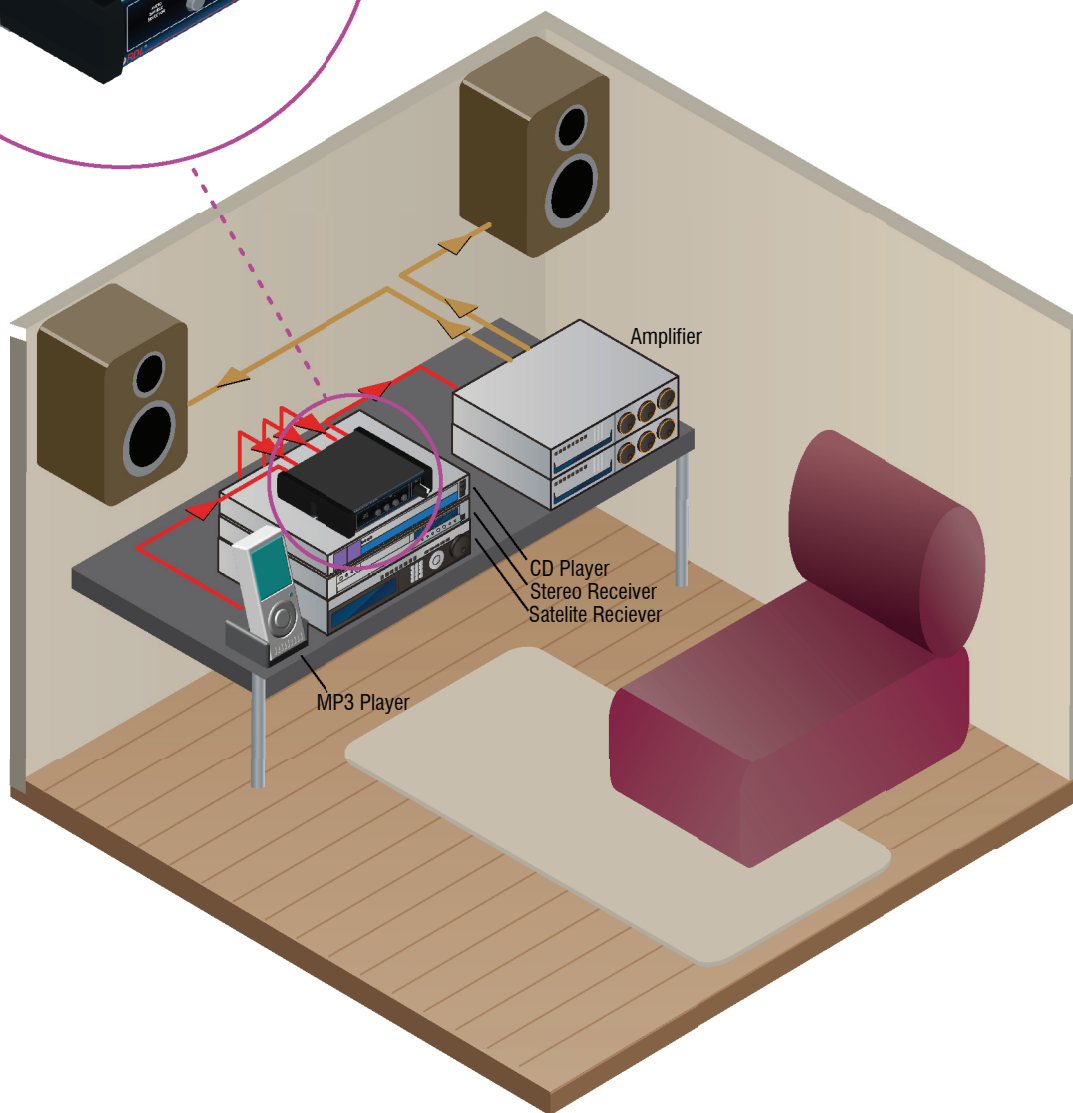
FOUR INPUT UNBALANCED STEREO SWITCH

High Performance Switching of Consumer Audio Sources

**SYSTEMS
SOLUTIONS** AN-2073



EZ-SX4
Stereo Audio Input Switcher



Description:

Many inexpensive unbalanced audio switches use mechanical contacts to switch the audio. This leads to switch noise and unreliable operation, particularly after the switches have been in service for several months. The RDL EZ-SX4 provides long-life, silent switching by using solid-state technology for all audio switching. The EZ-SX4 allows the user to select one of four unbalanced stereo sources. The output feeds the power amplifier driving the stereo speakers. The EZ-SX4 output level is adjustable using a front-panel knob, allowing a user to select a source and adjust volume from one location.

The EZ-SX4 is shipped with a high efficiency power supply that connects to a locking dc power jack.



RDL
Radio Design Labs

www.rdlnet.com

Product	QTY
EZ-SX4	1

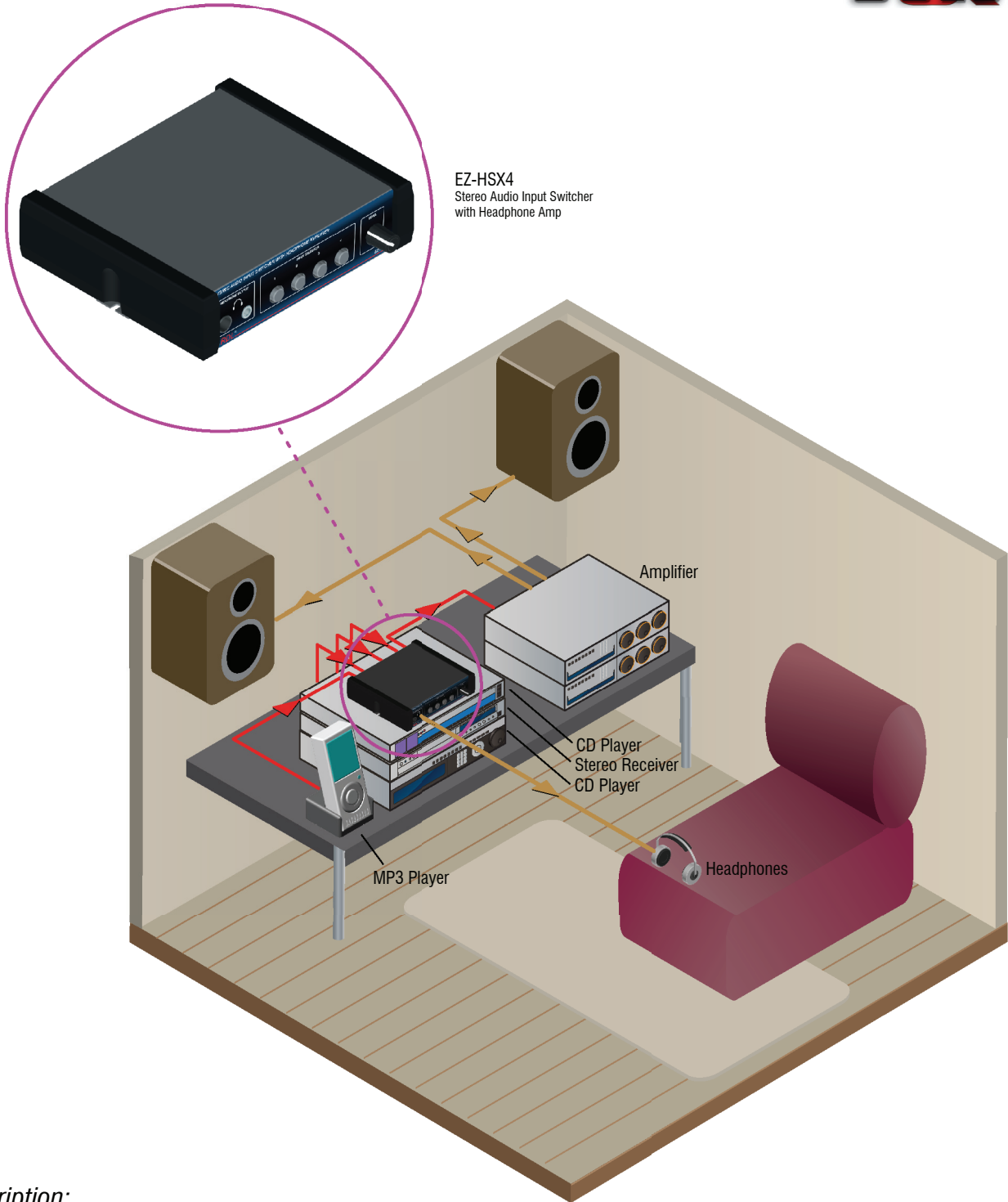
Product	QTY
EZ-SX4 Power Supply	1, Included

Line Color Key

- Line Level Audio Signal
- Loudspeaker Level
- Control Signal
- Video
- Mic Level Audio Signal
- Ground
- Power
- Miscellaneous

SWITCH MULTIPLE STEREO AUDIO SOURCES

Monitor Audio Outputs with Intergrated Headphone Amplifier



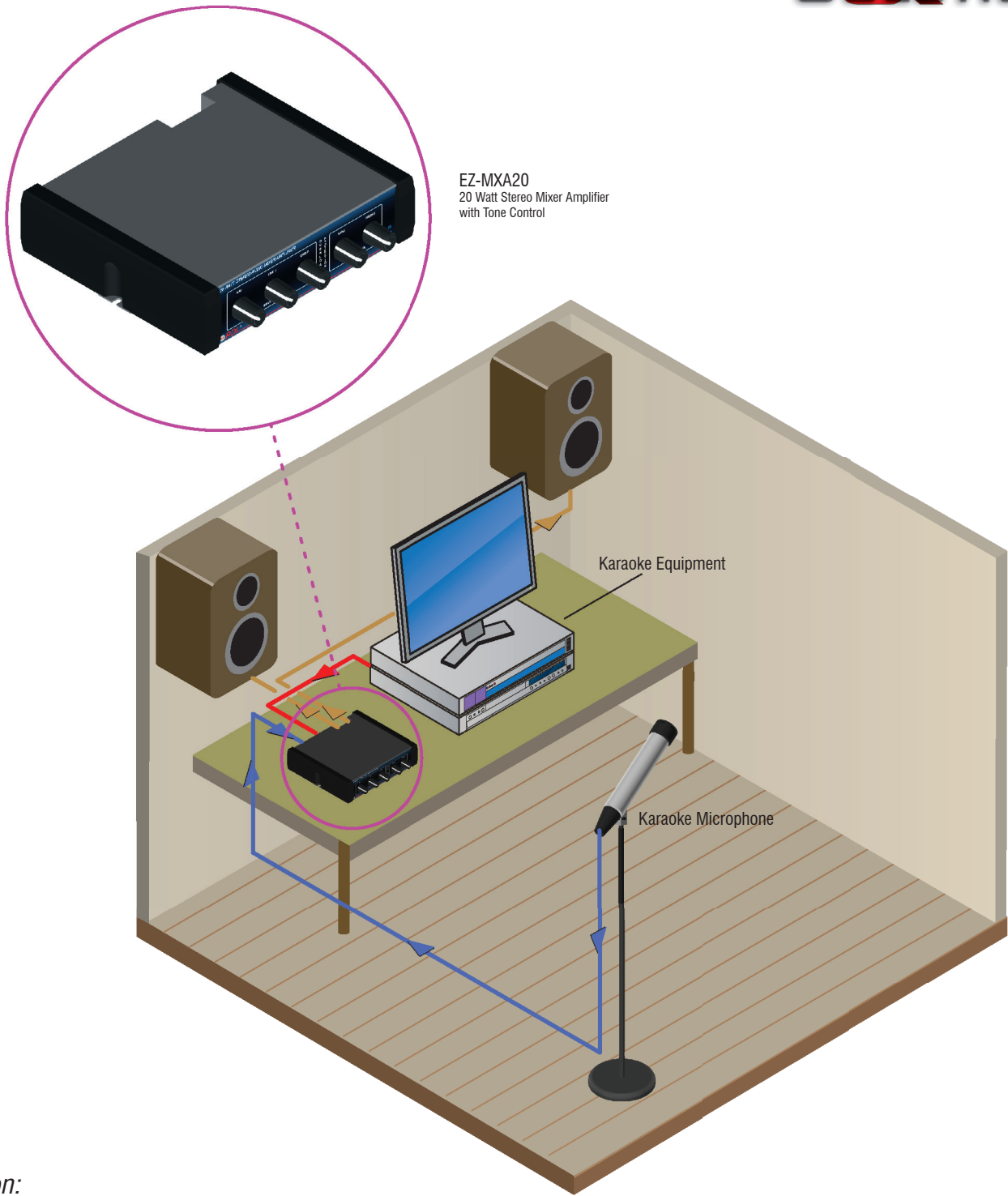
Description:

The EZ-HSX4 has an integrated headphone amplifier that adds versatility to the four input stereo switcher. The EZ-HSX4 uses solid-state switching to insure reliability and so that mechanical switch noise does not affect signal quality. The front-panel headphone jack monitors the line-level output which may be used to feed sound systems in different rooms or to feed recording equipment. If the line output is not used, the EZ-HSX4 can serve as a headphone amplifier with four switched inputs. The line-level stereo output can be switched to unity (fixed) gain or can follow the level set by the front-panel volume knob that adjusts the headphone output level.

The EZ-HSX4 is shipped with a high efficiency power supply that connects to a locking dc power jack.

Parts List		Recommended Pwr. Supplies	
Product	QTY	Product	QTY
EZ-HSX4	1	EZ-HSX4 Power Supply	1, included

Line Color Key	
—	Line Level Audio Signal
—	Loudspeaker Level
—	Control Signal
—	Video
—	Mic Level Audio Signal
—	Ground
—	Power
—	Miscellaneous



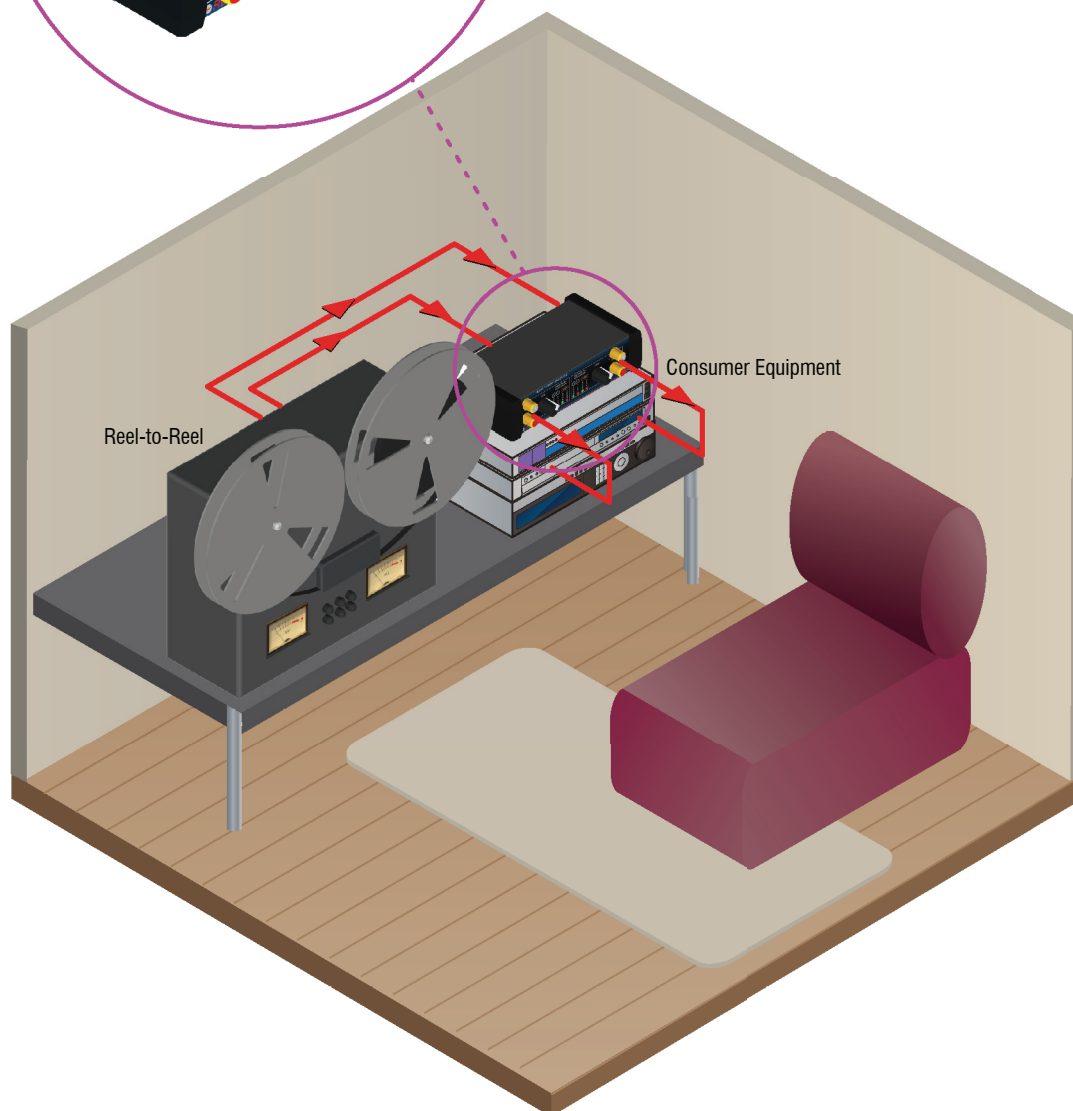
Description:

The EZ-MXA20 is a feature-rich mixer amplifier. In addition to two stereo line level inputs, the mixing section of the EZ-MXA20 features a high quality mic preamplifier with switch-selectable phantom power. Output power is 10 Watts RMS per channel into 8 Ohm speakers (8 Watts RMS per channel for 4 Ohm speakers). The power amplifier features a compressor, with a front-panel LED indicator, to protect against clipping. The front panel also features a two band equalizer for tailoring frequency response. The compact size of the EZ-MXA20 makes it the ideal choice when there is limited space for a full-featured mixer amplifier.

The EZ-MXA20 is shipped with a high efficiency power supply that connects to a locking dc power jack.



EZ-AFC2
Audio Format Converter



Description:

It is frequently necessary to use professional and consumer audio equipment in the same environment. The EZ-AFC2 provides both balanced-to-unbalanced and unbalanced-to-balanced conversion for stereo audio line-level signals. Superior electrical performance ensures audio transparency. All channels are monitored via dual-LED VU meters. Front panel knobs allow for easy level adjustment. The fully connectorized EZ-AFC2 makes this common interface task as easy as possible.

The EZ-AFC2 is shipped with a high efficiency power supply that connects to a locking dc power jack.



RDL
Radio Design Labs

www.rdlnet.com

Parts List	
Product	QTY
EZ-AFC2	1

Recommended Pwr. Supplies	
Product	QTY
EZ-AFC2 Power Supply	1, Included

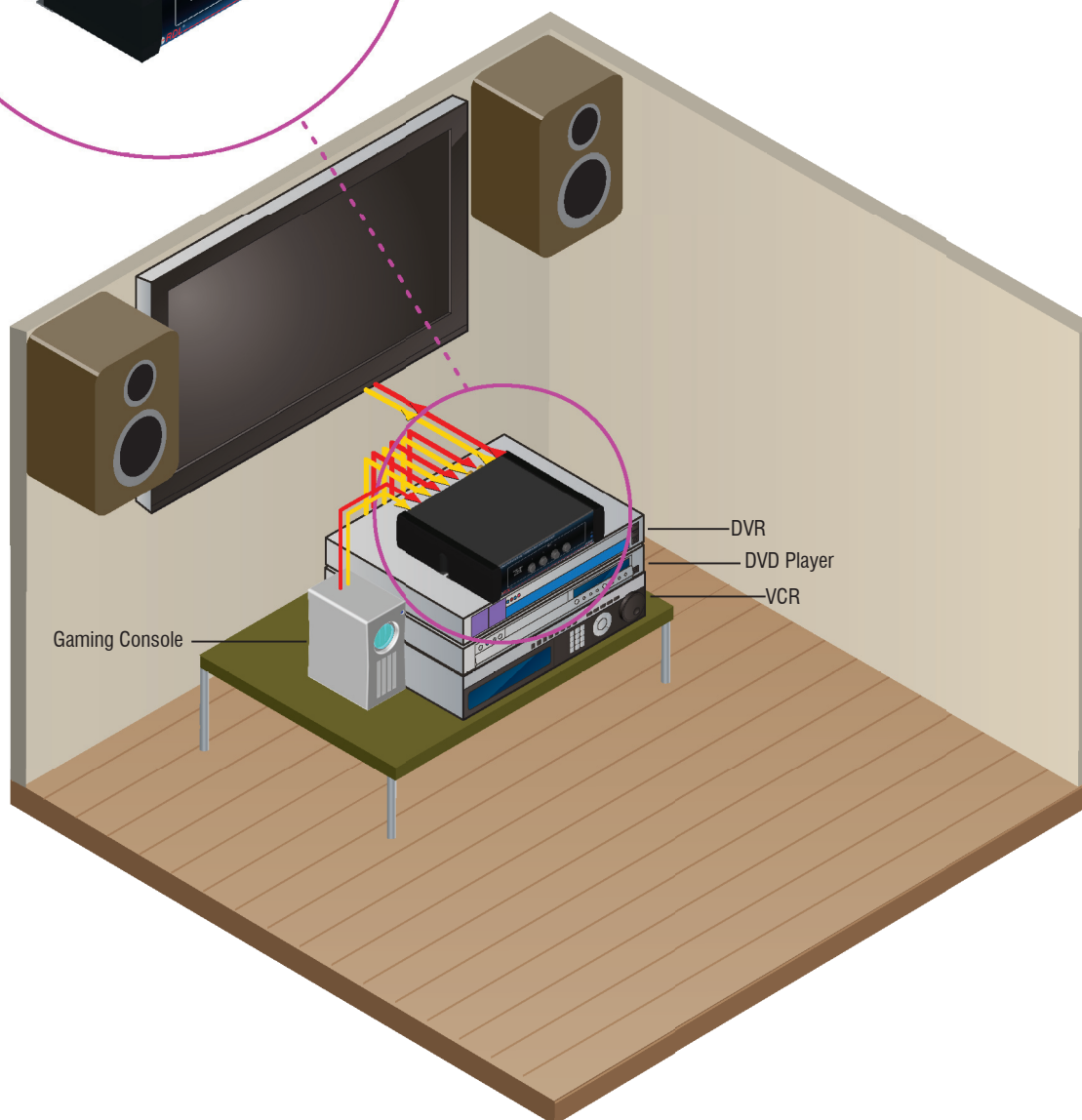
Line Color Key	
Red	Line Level Audio Signal
Brown	Loudspeaker Level
Purple	Control Signal
Yellow	Video
Blue	Mic Level Audio Signal
Green	Ground
Black	Power
Orange	Miscellaneous

COMPOSITE VIDEO AND STEREO AUDIO SWITCHING

Select Between 4 Composite Video and Stereo Audio Sources



EZ-AVX4
Composite Video and Stereo Audio
Input Switcher



Description:

Switching between multiple A/V sources is a common task in home theatres. This diagram illustrates the EZ-AVX4 being used to switch between a DVR, DVD player, a gaming console and a VCR. The RDL EZ-AVX4 Composite Video and Stereo Audio Input Switcher features solid state switching on the audio and video signals making them immune to mechanical switch noise and ensures a long life of reliable operation.

The EZ-AVX4 is shipped with a high efficiency power supply that connects to a locking dc power jack.



RDL
Radio Design Labs

www.rdlnet.com

Parts List	
Product	QTY
EZ-AVX4	1

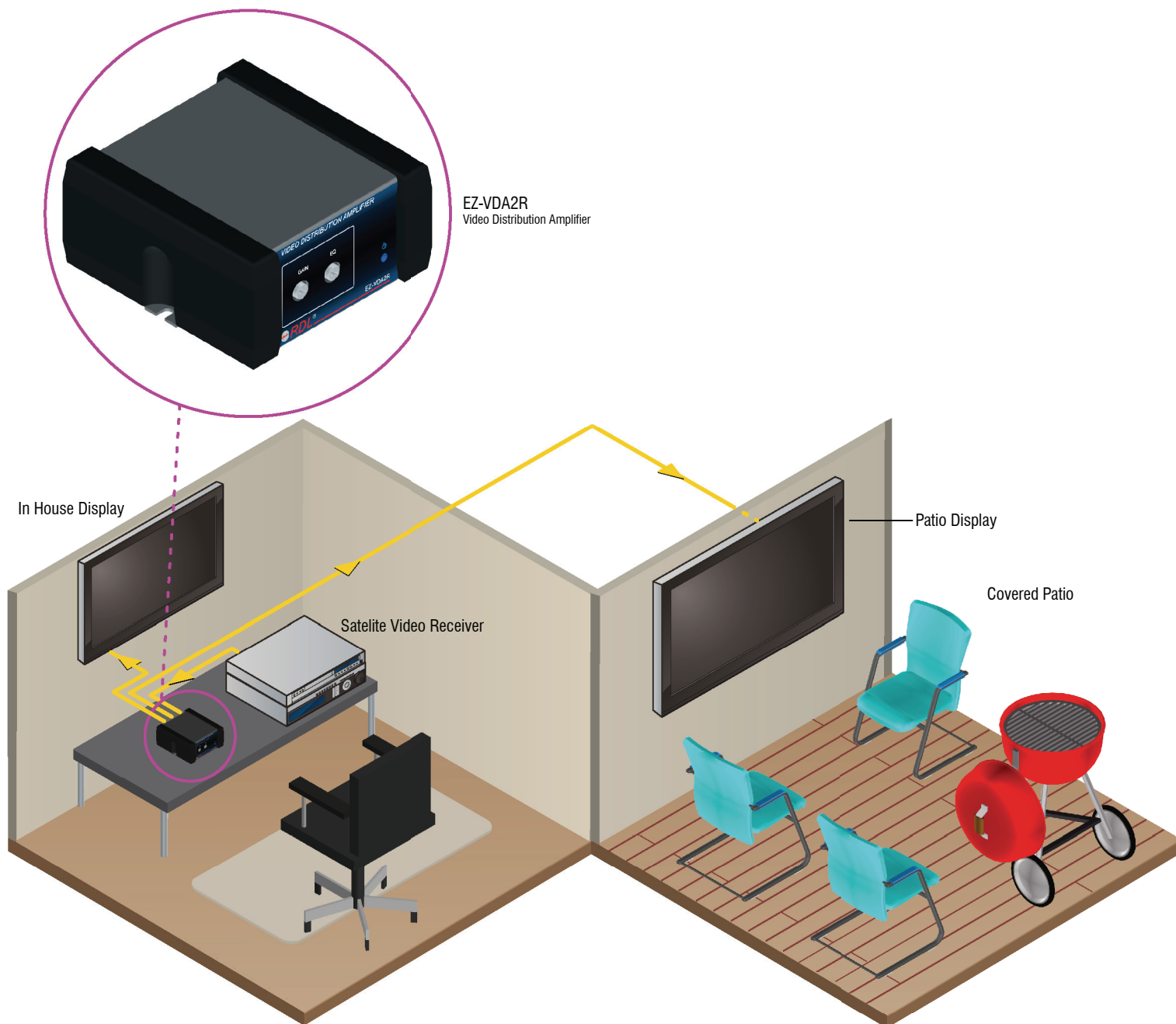
Recommended Pwr. Supplies	
Product	QTY
EZ-AVX4 Power Supply	1

Line Color Key	
Red	Line Level Audio Signal
Brown	Loudspeaker Level
Purple	Control Signal
Yellow	Video
Blue	Mic Level Audio Signal
Green	Ground
Orange	Power
Miscellaneous	

COMPOSITE VIDEO DISTRIBUTION

Distribute Video to Remote Location in House

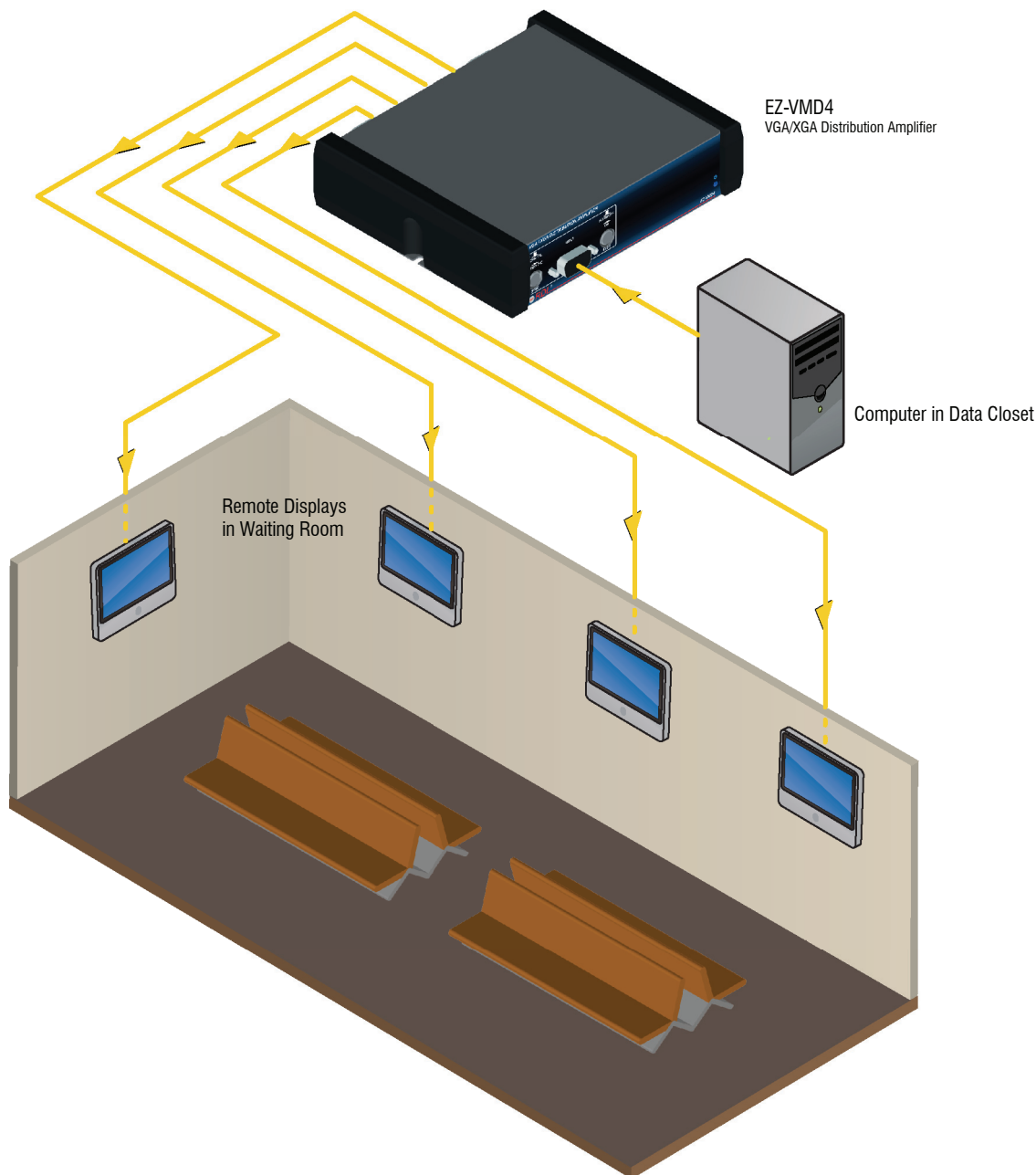
**SYSTEMS
SOLUTIONS** AN-2078



Description:

This application demonstrates how to distribute a composite video signal to a remote location in a house. The EZ-VDA2R's bandwidth is > 400 MHz which ensures a high quality picture. Gain and equalization controls on the front panel allow adjustments for long cable runs. The EZ-VDA2R provides professional performance in a very compact package.

The EZ-VDA2R is shipped with a high efficiency power supply that connects to a locking dc power jack.

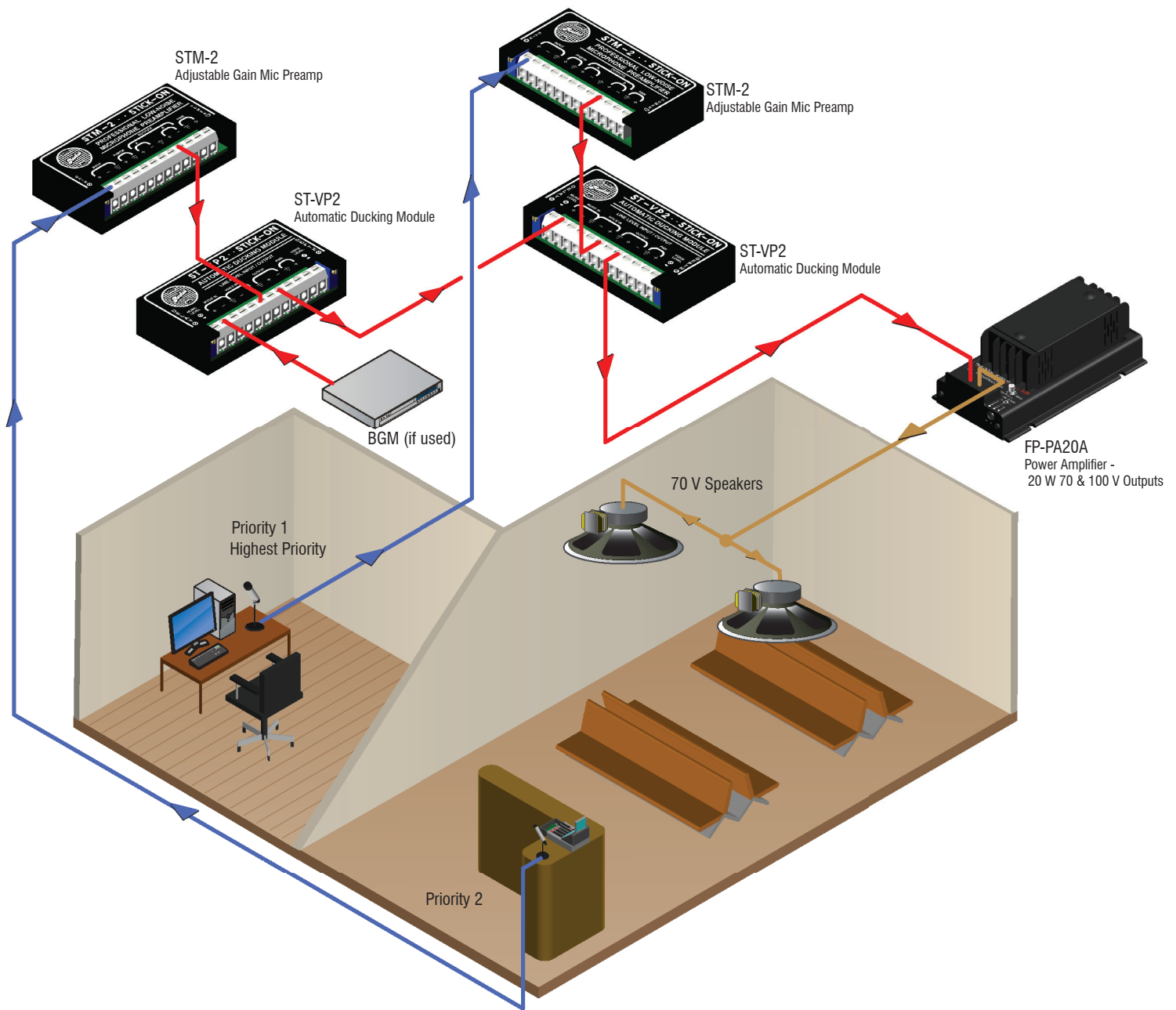
**Description:**

Waiting rooms, airport terminals, dispatch centers, and operations hubs are just a few of the locations where multiple monitors of computer generated video are needed. The EZ-VMD4 provides one local monitor plus three monitor outputs. Outputs offer wide RGB bandwidth for superb graphics reproduction and high resolution compatibility from VGA through QXGA. Front panel switches allow ID BIT selection and selection of TTL or Video 75 Ω sync. The compact size of the EZ-VMD4 allows the use of this professional quality distribution amplifier even when equipment space is limited.

The EZ-VMD4 is shipped with a high-efficiency power supply that connects to a locking dc power jack.

PRIORITIZED PAGING

Automatic Ducking with Multiple Paging Locations



Description:

This application provides multiple paging locations, with priority assigned to each location. Each location has a mic equipped with a PTT (push-to-talk) momentary pushbutton. The STM-2 preamp for each microphone should be installed near the associated mic. Wiring between each STM-2 output and the corresponding ST-VP2 is balanced, connected with shielded or unshielded twisted-pair cable. When any microphone is used, the music fades down and paging becomes active. The highest priority mic overrides the lower priority mic(s). This arrangement may be carried out for an unlimited number of paging locations.

The FP-PA20A 20 Watt Power Amplifier feeding 70 Volt speakers is used in this example. RDL offers a wide range of power amplifiers for paging and public address applications.



RDL
Radio Design Labs

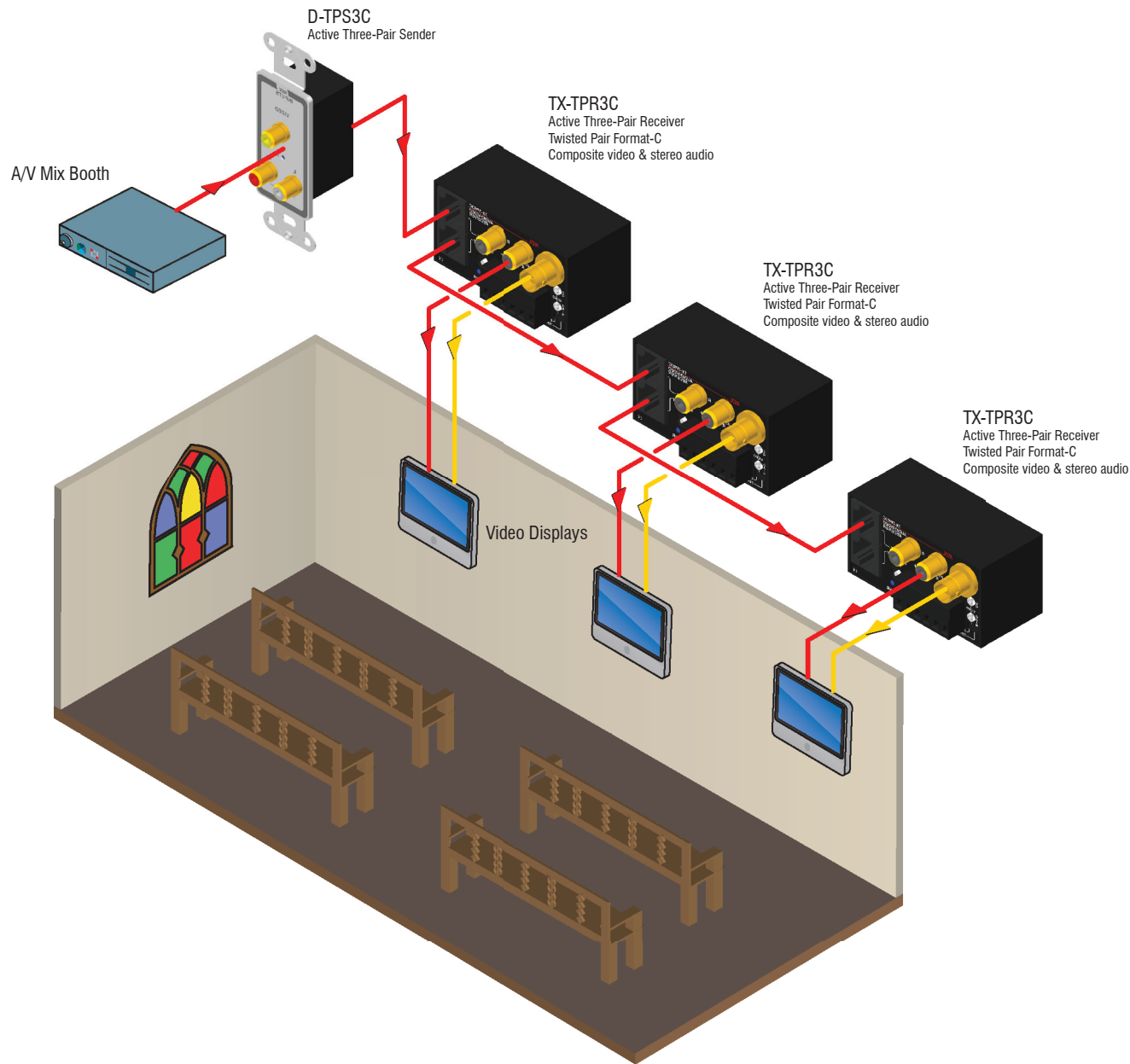
www.rdlnet.com

Parts List	
Product	QTY
FP-PA20A	1
STM-2	2
ST-VP2	2

Recommended Pwr. Supplies	
Product	QTY
PS-24AS 24 Vdc 500 mA	1
PS-24U2A 24 Vdc 2 A	1

Note: If an STM-2 Mic Preamp is located separate from the other modules, it may be powered by locally using an additional PS-24AS.

Line Color Key	
—	Line Level Audio Signal
—	Loudspeaker Level
—	Control Signal
—	Video
—	Mic Level Audio Signal
—	Ground
—	Power
—	Miscellaneous











Description:

This RDL Format-C twisted pair system allows for the distribution of both audio and composite video over a standard CAT5 cable. This simplifies and speeds up system installation by allowing one economical cable to deliver both audio and video signals. The Format-C sender in the data closet feeds the audio and video to receivers mounted behind each flat panel display. Twisted pair cables loop from one receiver to the next. A Format-C distributor would allow for configurations with multiple distribution branches.

Parts List	
Product	QTY
D-TPR3C	1
TX-TPR3C	3

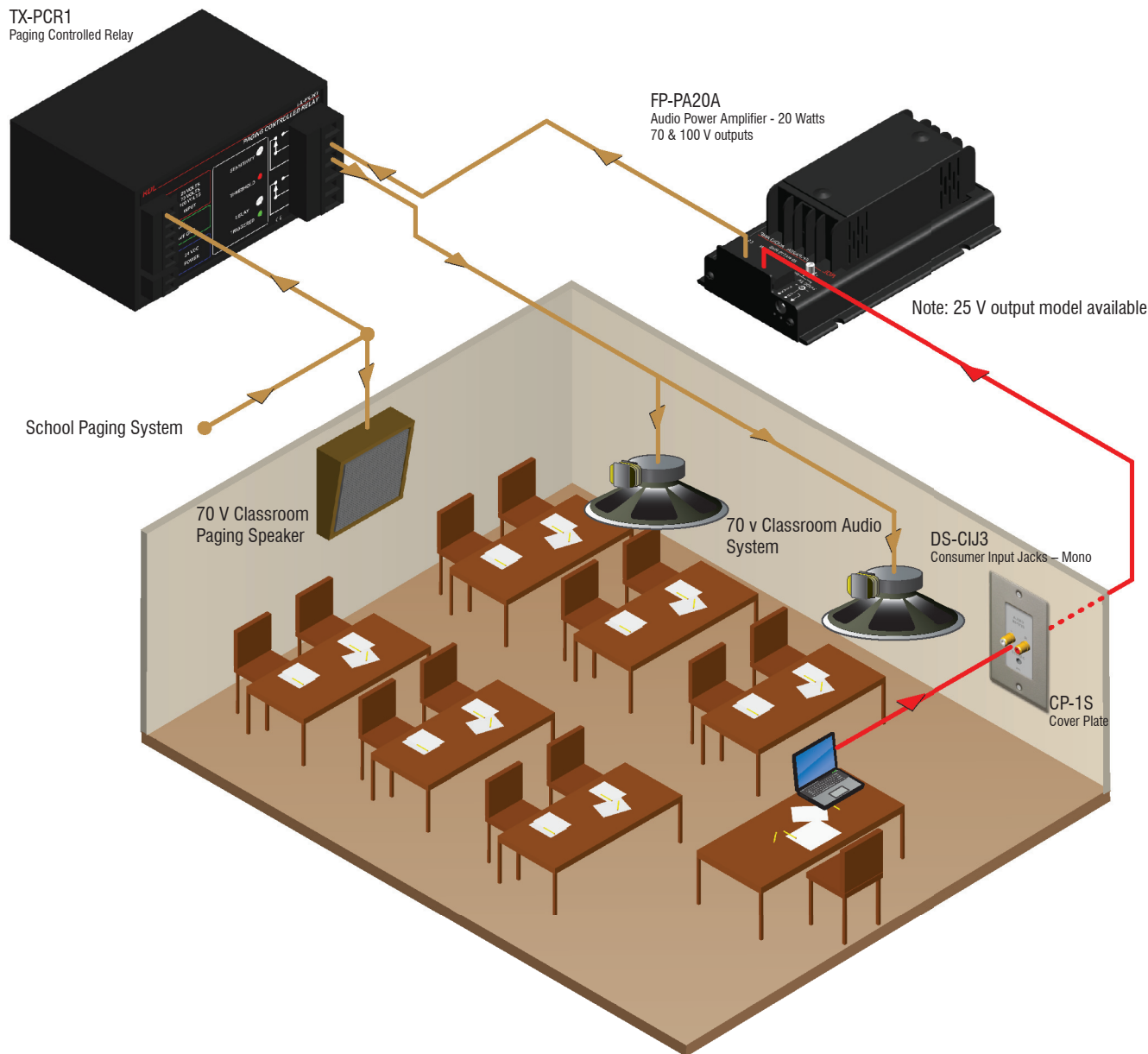
Recommended Pwr. Supplies	
Product	QTY
PS-24KS 24 Vdc 1000 mA	1

Line Color Key	
	Line Level Audio Signal
	Loudspeaker Level
	Control Signal
	Video
	Mic Level Audio Signal
	Ground
	Power
	Miscellaneous

CLASSROOM AUDIO OVERRIDE PAGING SYSTEM

School Paging Interrupts Classroom Audio

SYSTEMS SOLUTIONS AN-2082



Description:

This system uses a TX-PCR1 Paging Controlled Relay to interrupt classroom audio to allow a page to be heard clearly. Classroom audio is fed through a wall plate to the 70 Volt amplifier. The 70 V speaker output is routed through normally closed contacts of the paging controlled relay to the classroom speakers. The paging controlled relay samples the 70 V audio to the classroom paging speaker. Whenever school-wide paging is active the relay is energized and the classroom audio is interrupted. This allows the page to be heard without interference from the classroom audio. The wall plate used in this example is available in the normal RDL grey/white or in stainless steel with custom labeling available.

Parts List

Product	QTY
CP-1S	1
DS-CIJ3D	1
FP-PA20A	1
TX-PCR1	1

Recommended Pwr. Supplies

Product	QTY
PS-24U2A 24 Vdc 2000 mA	1
PS-24AS 24 Vdc 500 mA	1

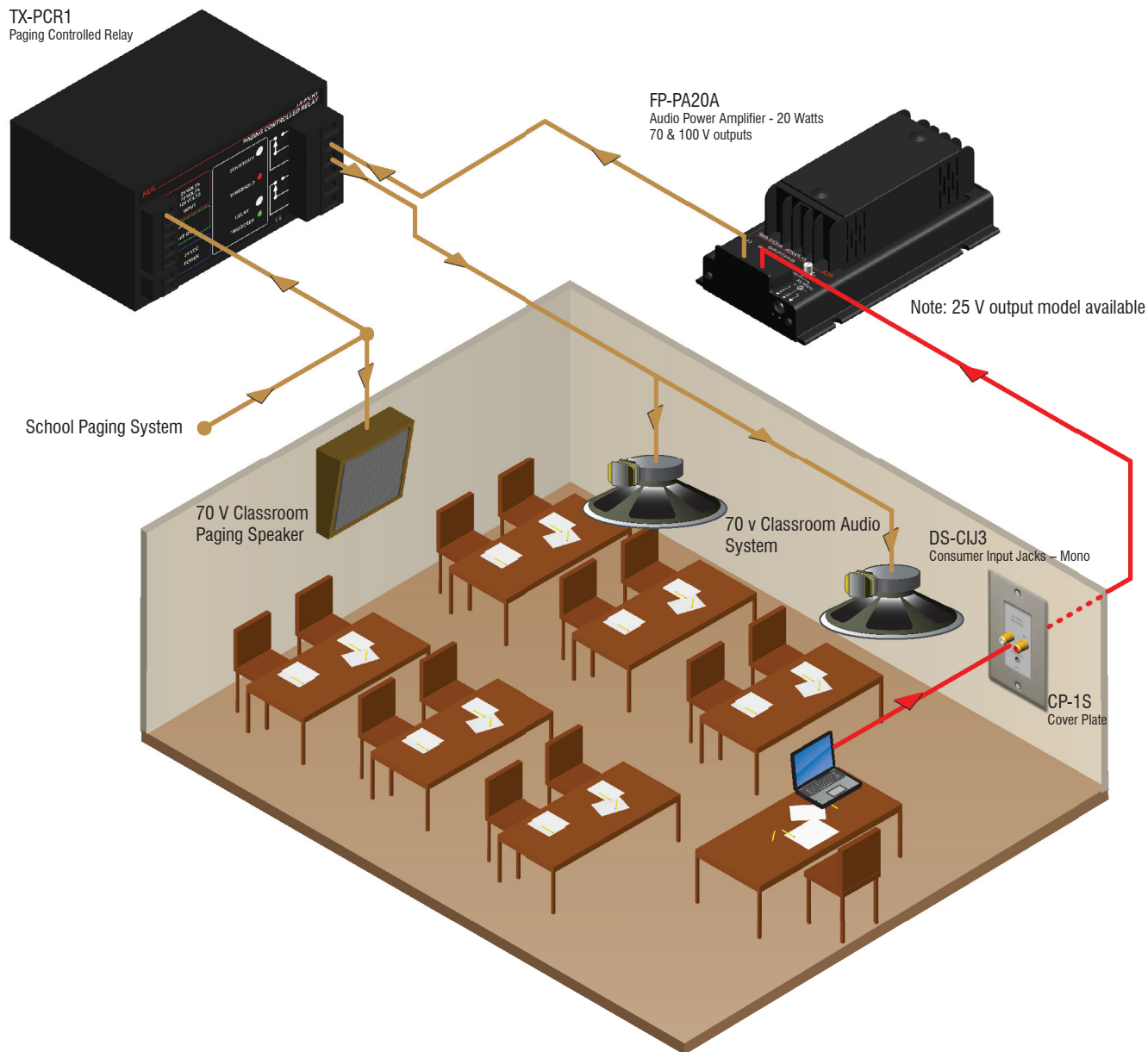
Line Color Key

Red	Line Level Audio Signal
Blue	Loudspeaker Level
Green	Control Signal
Yellow	Video
Purple	Mic Level Audio Signal
Black	Ground
Brown	Power
Orange	Miscellaneous

CLINIC CLASSROOM AUDIO/PAGING SYSTEM

School Paging Interrupts Classroom Audio

SYSTEMS SOLUTIONS AN-2083



Description:

This system uses a TX-PCR1 Paging Controlled Relay to interrupt classroom audio to allow a page to be heard clearly. Classroom audio is fed through a wall plate to the 70 Volt amplifier. The 70 V speaker output is routed through normally closed contacts of the paging controlled relay to the classroom speakers. The paging controlled relay samples the 70 V audio to the classroom paging speaker. Whenever school-wide paging is active the relay is energized and the classroom audio is interrupted. This allows the page to be heard without interference from the classroom audio. The wall plate used in this example is available in the normal RDL grey/white or in stainless steel with custom labeling available.

Parts List	
Product	QTY
CP-1S	1
DS-CIJ3D	1
FP-PA20A	1
TX-PCR1	1

Recommended Pwr. Supplies	
Product	QTY
PS-24U2A 24 Vdc 2000 mA	1
PS-24AS 24 Vdc 500 mA	1

Line Color Key	
Red	Line Level Audio Signal
Blue	Loudspeaker Level
Green	Control Signal
Yellow	Video
Purple	Mic Level Audio Signal
Black	Ground
Brown	Power
Orange	Miscellaneous