

R972 Trinnov Optimizer Application Notes

Guide to Maximizing the Tinnov Experience

Version 2.6.1

**Curt Hoyt
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Introduction

This document is to serve to get you going towards a successful and rewarding Trinnov experience- where the speakers disappear and the image comes to life. The R972 with Trinnov is a “gateway” product into the Trinnov world, so each of you are experiencing something unique. Based on Trinnov’s Version 2 architecture, it’s extremely powerful. The limitation relative to the Trinnov advanced Professional and ADA units is that the Trinnov settings are fixed. Therefore, to get the most out of it, one must work within the ranges. The goal of this document is to anticipate some of the issues you’ll run into and put you on the path to success with your Trinnov experience. Included are some unusual configurations that may be experimented with. Every home theater integration is different, with differing strengths and limitations. We anticipate that this doc will evolve over time. If you have a unique Trinnov success story you would like to share, please forward your comments.

Consulting

Most high end home theater applications of Trinnov are supported by Trinnov consulting services. We help integrators work out the details where the results need to be anticipated in advance, or solve unusual tuning issues. This document should give you a feel of what goes into improving your own installation. Should you want to maximize your Trinnov experience with professional guidance, please contact us.

Notes for optimally setting up the R972 with Trinnov

Goal: get maximum performance from the automated CAL sequence. The R972 automatic calibration system based on the Trinnov Optimizer Pro Version 2.0. The internal settings are based on optimizing the listening as well as protecting the loudspeakers. The following are some tips for getting the maximum out of the remarkable Trinnov Optimizer.

The Trinnov Cal performs (4) tasks

- (1) Measures relative levels of loudspeakers and Subwoofer(s)
- (2) Measures -6dB point (where loudspeaker drops 6dB from nominal level or Reports Xover Point for Bass Management)
- (3) Measures loudspeaker and room characteristics (time and amplitude)
- (4) Determines loudspeaker location in 3D

The Computation phase computes the following

- (1) Sets relative levels of loudspeakers and Subwoofer- To maintain signal DIGITAL HEADROOM, any relative DIFFERENCE in level that is corrected for results in a corresponding DROP in overall level to insure no distortion from digital “overs” (program exceeding maximum level). Therefore if loudspeakers are relatively well matched to each other, digital levels will be optimized. Check reported levels- particularly between loudspeakers and Subwoofer. Adjust Subwoofer to get it close to minimize the amount of level change that must be done by the system- thereby improving the R972’s “gain structure.”
- (2) Sets the crossover point (Reported - 6dB point for speaker). Take note: if all speakers are identical, then the relative crossovers should be the same. They may not be because of speaker issues or because of room placement changing the bass in the crossover region. You can mitigate this by moving the speaker to see if there is a change. If you believe a speaker is damaged, swap it’s location with another to see if results are consistent.
- (3) Sets FIR and IIR filters (all speakers, where Subs have IIR only) to compensate loudspeaker and room characteristics (time and amplitude). The filters work very well with Satellites or full range speakers. If you have a choice of speaker type and you want higher sound levels, do not use small Satellites that have limited SPL capabilities. The maximum correction has necessarily been limited to not damage typical consumer speakers, and is set for a maximum of +6 boost and -12dB cut correction for all speakers, including Subwoofers. If your Subwoofers appear to have less bass than you desire, it will be a

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combination of (A) output, (B) placement, and/or (C) correction of the Sub. See "Sub Note" below for details on Sub correction.

- (4) Sets loudspeaker location in 3D for remapping, based on Cal Mic and speaker location.

Calibration Tips

Aim Cal mic, run Cal, read results, then adjust positions (mic or speakers) until you are satisfied. Try for better than 1 degree for the center speaker if it is supposed to be dead ahead. Doing these adjustments are easy- as you get the results quickly without running the long computation routine until you are satisfied with the setup.

- (1) ***Cal sequence of three bursts repeats***- The Cal sequence collects the data and analyzes it for robustness using three bursts of "noise" for each speaker. If the data isn't considered good enough, it will result in multiple tries before moving to the next speaker. If the data isn't good enough the Calibration sequence moves to the next speaker with the assumption it can't be improved on. Rule of thumb: If it's successful in three tries, you may have it. If it goes the maximum, (about 3 repetitive tries, 3 bursts each) then you will have unreliable results. As an example, maybe you have occlusion to a back speaker, so this causes the maximum repeats. If you feel you have the best compromise, run a computation and listen, to see what you've got.
- (2) ***Calibration Data Tables*** - At the end of the Calibration sequence and before the computation phase, the system pauses, giving you an opportunity to evaluate the speaker information before committing to the several minutes it takes to compute the filters. This is your opportunity to verify everything looks good, as well as use the data to make adjustments in the mic position or speaker placement. Look at the tables. If the Calibration sequence took 3 bursts for each speaker, the data should be accurate. If it took longer than 3 bursts for a given speaker, pay close attention to the data. Does it make sense? Is the mic aimed correctly? Do the speaker distances look correct? Is the Sub level in line with the Satellites? If using external amplifiers with gain levels, are they set to match? This is your time to make adjustments before taking your ideal Cal.
- (3) ***What to do if system can't find a loudspeaker***- results in data are blank or incorrect. 2D and 3D remapping works incorrectly: sounds come from wrong loudspeakers (as the correct placements not found). If you are not getting 2D/3D performance or if you get nine bursts followed by erroneous information (usually blank), it means that the speaker could not be properly located. This is caused by the hi frequency impulse (first arrival to the mic) being blocked or too weak. The Calibration sequence for good Cal is three bursts per speaker output, along with good reported locations. This will result in great 2D and 3D performance. ***Suggestion*** when stuck with bad Cals for an individual speaker: connect the offending speaker to the Left Channel output. Your guide is the number of bursts: 3 bursts (OK) 9 bursts (not OK). You'll start/stop the Cal sequence for this speaker only, canceling Cal when it moves to next speaker. The concept is to look at multiple locations to learn about the speaker and notice when the Cal becomes unreliable as well what may be causing it. As you go through this, listen to the bursts from a few feet behind the Cal mic, so you can hear the change in tone as the mic is moved, as this will give you a clue as to what is going on. Try mic placements: (1) directly in front of speaker, 3-6 ft (this is easiest to get), (2) at 3-6 ft, change position of mic to be 3-6 ft away, now in line between speaker and listening position (3) progressively to the listening position. Through this process, you'll discover possible changes you can make to improve the Cal results: moving or re-aiming the speaker, etc.

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- (4) *What to do if system can't find a Subwoofer*- A Subwoofer's energy is considerably limited compared to loudspeakers because of their narrow frequency band. If the Sub is not found (more than three bursts), consider the following adjustments: turn off or raise any low pass filter on the Sub, and/or raise gradually the level of the Sub till it is recognized. If the Sub has it's own active correction, try bypassing it: Trinnov's proprietary low frequency correction works in a number of ways to improve performance and may likely exceed what the Sub's correction can do on it's own. Always, trust your ears.
- (5) *Trinnov Level Adjustments*- Trinnov will automatically reduce overall gain in order to keep full digital headroom. The gain reduction is computed based on two key factors: (1) level differences between speakers. Trinnov level matches all speakers and the difference between them must be accounted for in the overall level (2) correction and Target boost, as much as 6dB. Between the level and EQ corrections, there can be a difference of 16dB or more. If the overall level is not reduced, digital distortion could result. Things you can do to reduce the drop: Get your Sub levels manually close to where it needs to be to match Sats (Radio Shack meter it with the built in tones). Avoid having unequal speaker levels, such as speakers with different efficiencies, or speakers way far away that need unusual amounts of boost. Bottom line: as long as you are able to drive the system to the levels you are looking for, and it sounds clean, you'll be OK with the kinds of drops you are seeing. If you clean it up a bit, let us know how it goes- particularly if you find it worth the effort for others.
- (6) *Experiment with extra channels* - If you are particularly interested in 3D remapping and acoustic image possibilities, experiment using all channels. As an example, if your HT setup is a typical 5.1 layout and you have an extra pair of speakers, they don't need to be placed in a traditional 7.1 configuration for the optimal listening experience. Try using the extra two channels in other ways, such as to add front wide or height (front or back). The 3D remapping will determine where the speakers are and provide an appropriate signal. If done right, the speakers will seem to disappear, leaving a seamless image. 2D and 3D. 2D is horizontal spatial correction only. 3D spatially corrects both horizontal and vertical planes. Listen to both to decide what works best for your given situation. The ability of the Trinnov to correct spatiality is dependent on speaker placement. While ideal placement is not required, the spatial correction is most effective when there are speakers nearby to support the "building" of the image. If you want to raise the sound image in the front, you have to have an elevated speaker. As an example, if all speakers are on the floor, then the image can't be raised.

Calibration and Setup Notes

- (1) *Trinnov Imaging correction 2D/3D*-- Trinnov corrects for spatial errors caused by incorrect placement of the loudspeakers both horizontally – 2D and vertically 3D. The correct images are built from your speakers: therefore, if you want to have imaging- horizontally or vertically, you will need to place speakers in the general area to support the forming of an image. If your front speakers are on the floor, and the side and rears are in the ceiling, the resulting image will be tilted. You will not be able to raise the front image by having speakers in the rear elevated. Again: if you want to improve imaging in a given direction- horizontal or vertical, you must place a speaker in the area to support it. See section (6) above.

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- (2) **Speaker placement recommendation** - place speakers aiming at the microphone/listening area. This includes L/R speakers. This can be critical for the Cal process of "finding loudspeakers," and will give best Trinnov Remapping performance in 2D and 3D over the broadest listening area. Speakers are localized, "found" from direct high frequency radiation. Speakers that have appreciable high frequency roll-off may not be found during Calibration if not aimed directly at the microphone. This can occasionally be a problem for ceiling speakers that beam high frequencies away from the Cal mic. The best in wall/ceiling speakers are those that can be aimed. Dipoles are usually ok, but can fail to be found for the same reason. See the notes below for powered and planar speakers.
- (3) **Speaker Localization**- If speakers are not found, try these tips: (1) look for any occlusion that may occur in the line of sight from mic to speaker, such as high chair backs. (2) Listen to the Cal sequence from the mic position (always moving to remain behind the mic for the speaker being measured)- you will hear if a speaker is noticeably different. (3) Try swapping positions with a known "good" speaker that is consistently found. You'd be surprised how many damaged speakers have been identified this way.
- (4) **External amplifiers**- insure that the amplifier/speaker combination is at a comparable level during Cal to using the internal amp. There has to be a reasonable output (SPL) for an effective Cal. See tip (5) of this section.
- (5) **Subwoofer Localization**- Trinnov only measures level and distance for the Sub. The localization of the Sub is not needed or possible due to the low frequencies. If you get angles for the Sub, this is an error- repeat the Cal. If you confirm the error, you may want to update the firmware or contact Sherwood support.
- (6) **Bass Management Auto Crossover** – The crossover frequency will be determined by the midpoint between the lower roll-off of the Sats and high roll-off of the Sub(s). If the crossover seems too low, it's because your Sats have lower extension, and your Sub may be low passed (cabinet or filter). To raise crossover, raise or turn off the low pass filter on your Sub and retry the Cal. Note: The higher the crossover, the more SPL your system will handle. The lower the crossover, the less localization of bass. *In the case of wide bandwidth Subwoofers- going beyond 300Hz, the auto level calibration may not function correctly, producing strange results in the level calculation.*

EQ- Target Curves & firmware modification of Sub level +3, +6 dB

The R972 has (4) target curves that may be applied the Trinnov correction. In addition, a Cinema curve may be overlaid to any of these. (see R972 manual) By combining the possibilities, you should find something that works well.

More Bass, Firmware modification. There is a provision for adding +3 or +6 dB to the Sub output as part of the Trinnov Calibration via firmware updates. There are two firmware modification files, called +3 and +6. When installed, they add +3 or +6 dB, respectively, to the Sub/LFE output on all (4) trinnov target curves. The firmware updates have no effect on the speaker outputs. Contact Sherwood directly for the firmware modification files and instructions. Beyond the firmware modification files, no other provision for updating or changing the existing curves exists. If you prefer more bass, as an alternative the the firmware mod files, you can raise the Sub level after Calibration with the same results (just harder to set manually). You'll get best results by noting where the Sub level was (I use blue tape to mark), then making small incremental changes.

Calibration Microphone

- (1) The calibration microphone is made of four capsules vertically aligned to form a tetrahedral (equal sided triangles). It is powered from the R972 via the cable and is automatically tested as part of the calibration sequence. Using other microphones will not provide correct results and may damage components.

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- (2) Microphone Orientation- The Cal mic is a "side address" microphone, and is designed to be vertically oriented (capsules pointing up). The microphone must be rigidly placed and not moved throughout a calibration sequence. Use of a camera tripod is highly recommended. See the R972 Manual: place Cal mic on tripod, rotate/aim the Red Dot (on front) where you want the 3D/2D image to appear. Adjust the height of the 3D/2D image by tilting the mic so that the plane of the mic base aims at the height of the 3D/2D image. The placement of the Cal mic should be as close as possible to the listening location, including height. Avoid early reflections around the Cal mic: raise above seat backs and avoid placing it on objects such as books or boxes.
- (3) You can extend the Cal mic cable (15'). Recommend using a Shielded Cat 5e In Line Coupler, such as a Fry's part 2591271, combined with a short (20-30') shielded cat 6 cable. If Cat 6 cable is not available, cat 5 cable may also be acceptable: the cable twist does a very good job of rejecting hum. There will be a slight loss on the hi end (-1 to 2 dB at 20k) that should be acceptable.
- (4) The Cal mic is a parallel input to the Analog CD input which is muted during Cal. Leaving the Cal mic plugged in and selecting the CD input may cause feedback, but no components will be harmed. Recommended: *during Cal, do not have the analog CD input activated to avoid possible feedback when the Cal sequence is not running.*

Speakers

Powered Speakers

Using powered speakers can work well- best to try. Typical powered speakers (pro and consumer) improve loudspeaker performance by utilizing active crossovers, separate amps, and sometimes correction of drivers. Powered loudspeakers with correction of drivers are usually limited to FIR or IIR, not both. Trinnov uses both FIR and IIR to correct the loudspeaker in the room, compensating for amplitude, phase and early reflections. One then takes advantage of applying Trinnov remapping.

Full Range Speakers w/ Internal Powered Subs

Definitive Technology, Linn and others have in their product lines amplified woofers in their full range loudspeakers. For these and others, you have two ways to connect the powers Subs in full range speakers: to the channel (channel preamp out or sometimes from speaker level), or connected to the Sub output. In both cases, Trinnov will apply our advanced IIR correction. Connecting the Sub to the channel preserves stereo bass, while connecting all Subs to the Sub output can tame room modes. It may be worth the effort to try it both ways. Several users report their preference for mono bass, where all Subs are connected to the Sub output. As well you can have both, by using a 12v Trigger to select between two position presets/configurations. If you want to try it, but are confused, seek consulting from a Trinnov expert.

Planar Speakers

Using Electrostatics, ribbons require specific adjustment. As planar speakers are highly directional as a function of their length, it is critical that they are aimed in such a way that the Cal mic can locate them. If you have difficulty getting a good Calibration, insure that the panels are sufficiently upright (vertical). Panels that are tilted back can beam the high frequencies above the Cal mic that may result in localization errors. This can be improved by making the panels perpendicular to the Cal mic and raising the level if an external amp is used. If you are having difficulty with calibrating the panels, listen to the burst sequence, moving your head to hear where the panel aims it's brightest sound. Try aiming this at the Cal mic.

Planar speakers with built-in Subs. If crossover is below 150Hz, you may get best results by separating the woofer and running all woofers from the Sub output (with separate amp). This concept is particularly interesting if you are using the system

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Stereo only, without the use of additional Subs. It could tighten up the bass and provide more extension. See note above- *Full Range Speakers w/ Internal Powered Subs.*

Subwoofers

Trinnov measures and corrects for distance, level and frequency response for Subs. Angles are not required or measured. In addition to frequency variations in the Sub, the room contributes dramatically to the response. The correction for Subs is based on (7) independent, proprietary IIR filters that are computed specifically for your configuration. Typically boost is applied to fix response errors in the Sub, and cut is applied to reduce the effect of room modes. The smaller the room, the more impact the room will have on the Sub's performance, as the longer wavelengths at lower frequencies exceed the room dimensions and so the waves fold back and either cancel or magnify themselves. Picking the best place for the Sub to minimize the effects of the room modes will mean that you'll get all the more out of the correction. What you can do: Let's say you have a few choices for placement. How to pick? You can use the inverse positions to find the best spot. Place the Sub in the listening position, ideally at ear height. Set the R972 to the pink noise for the Sub (Trinnov OFF, "test" on remote, when Sub noise is on, toggle 1dB to keep noise as long as you need). While the noise is playing, go listen at each of the places that are acceptable for Sub placement. Maybe that means putting your head in the corner... Listen to each. One will sound the smoothest, with the least amount of extremes. That is your implied best location, and when you place the Sub there, that is what it will sound like from your seat. Then try calibrating with the new placement.

Once you have your Sub configuration and are calibrated, typical users will want to run Sub at the corrected level for music and somewhat louder for movies. If the crossover is below 100, moderately boosting the Sub should not add muddiness. Use your ears- listen for distortion that can occur at louder levels, as one can over drive the Subs.

A way to accurately get Sub level where you want is to use the pink noise generator in the 972 with a radio shack meter (on C weighting) measuring the change in level on the Sub. With the meter, you'll know accurately what relative level you have and can make incremental changes to listen to. I suggest trying 3dB at a time.

Multiple Subs

Consider using more than one Subwoofer. The multiple Subs will cancel out the room "modes," or peaks and valleys in response. Typical placement recommendation: for 2 Subs- placed mid-wall on opposite sides (side-side or front-back); for 4 Subs- all placed mid-wall or if needed, corners. Connect all Subs to Sub out, and do your best to pre-match them for level. For smaller rooms, its considered better to have more, smaller Subs than one bigger pricier one.

Trinnov finds the acoustical center, level, and response of multiple Subs and compensates for that. Multiple Subs are typically used to smooth out room modes. If you use multiple Subs, start with equal level on each. Room mode nulls can result in very dramatic level swings as high up as 200Hz. As a result, it can be very effective to counteract the modes from a main large Sub with a smaller Sub of limited capacity ideally placed, set to a lower level. We use measurements to find this; you can do it by listening.

Speaker placement, using 2D or 3D Trinnov Remapping

You may include unusual placement for image enhancement, such as height, or wides. Technique is to place speakers where you want more spatial definition, then calibrate. As we have more spatial acuity in the front, it makes a lot of sense in most rooms that are not long and narrow to setup a typical 5.1 array, then use the extra two channels for height or wides, or to "fix" a spatial problem. An example of this could be that there is a door, right where the left channel should go. The solution may be to place a speaker on both sides of the door, then have Trinnov correct the

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image. Same with height. If you have a low center, this can be off set by placing another speaker high. Requires re-calibration any time speakers are moved. When doing this, experiment with SPTL set to 2D and 3D for best results.

Front Image Width – Trinnov Remapping

REMAP: CINE = +/-22 degrees wide, MUSIC = +/- 30 degrees wide (based on microphone position during Cal)

R972 Advanced configurations not found in the manual

The following are suggested for advanced users, with no guarantee for your success in specific applications. Much depends on your personal understanding of how AVRs work. You'll need to navigate successfully the connections, calibrations, GUI programming. It's highly recommended that any unusual speaker configuration be tested and verified before any final decision for installation. If you have the interest, patience and skill, you may be able to translate the suggestions into a unique audio system easy for anyone to use.

Surround

Trinnov Correction is active only on DIGITAL INPUTS. The 7.1 Direct in are analog only and do not support Trinnov use.

Trinnov 6.1 w height

Another layout to try is 6.1 with two center speakers, one raised for height and a single rear channel (that could be fed to two rear speakers). This could be best choice for longer rooms. Experiment and find what works best in your room. You can effectively ignore the traditional fixed placement recommendations. If you do it, please share your findings with the group, so others may learn from your experience.

Trinnov Front W

When doing some of his zillions of demos, Jeff would not have a single speaker "correctly" placed. One CES, none of the front speakers were in the "correct" place. Instead, Jeff had 5 speakers (some in-walls, I recall) across the front to form a wide "W," along with 2 surrounds. The result was a seamless acoustic image suspended in space.

BTW, Typical custom HT projects using the more elaborate Trinnov systems are using from 8 to 32 channels of Trinnov processing. Lots of speaker channels and Subs, and several use our active crossovers. We're providing consulting for on HTs using Trinnov technologies in many unusual ways. The 972 is getting you in the door, and if you are willing to experiment a bit, you'll find there are so many ways Trinnov technology can enhance your listening experience.

Trinnov 9.1 with height

Some of you want more channels, up to 9.1- typically to fill in long rectangular rooms. The best way to accommodate more channels such as 9.1 is to share the side outputs with two speakers each, thereby leaving the rear outputs for use as height channels in the front. You'll trade some loss of rear resolution for more front spatial fill. Can be a good trade off in some rooms, given our spatial acuity is greatest across the front. For surrounds, best using same speaker type. When calibrating the side/rear pairs, Trinnov will find the acoustic center and compensate them both as a single unit. While not ideal, it can work well and free up two output channels normally used for rears for height or wides. This is a good one to mock up before final placement- to get the balance of positions just right. If you will be using in-walls,

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borrow some small Sats and find a way to hang them and calibrate. Listen in all the seats. Compare with 7.1- if you can. Mockups can help you optimize it all- even if it's done with open studs and the like.

IMPORTANT: The R972 Manual specifies use of speakers of 6 ohms or above. If connecting two speakers to a single amp out, consult the speaker's impedance chart: many speakers drop below rated impedance. It's not OK to connect two 6 ohm loads in parallel to an amp rated at 4 ohms. Wiring speakers in series may raise the impedance to acceptable levels. Overloading the outputs may damage the amps. Be sure to use speakers with higher impedance rating and sensitivity, or better, add additional amps off the pre out.

Calibrate, then listen to SPATL in 2D and 3D for best results. Note, with this configuration, you must use SPATL 2D or 3D, as Trinnov corrects for the irregular routing.

Stereo

Analog in- Trinnov in Stereo Only

2 channel in works fine with Trinnov correction. **The Direct 7.1 in does not have A/D circuits needed to run Trinnov.** Using a mono Y cable to feed a single channel to L/R is a great way to test imaging stability, corrected vs. uncorrected.

Stereo Full Range Pairs

One benefit of Trinnov correction is that it works well on stereo speaker pairs: the correction uses the most sophisticated method used in correction used today: both FIR and IIR filters on all channels- resulting in full range correction on large speakers. This is not a common feature amongst most correction systems available today.

If you combine large L/R speakers and Satellite speakers with Subwoofers for movies, but want to listen to your stereo recordings over only your large stereo pair, you can do this easily by taking a Cal of the "surround configuration" followed by a Cal of only the large L/R speakers (disconnect temporarily all other speakers).

Stereo with Subs

The opportunity to improve your large speakers comes from separating two key tasks of reproduction: imaging and taming room modes. Using separate Subs allows no compromise in staging the mains for imaging and the Subs for minimizing room modes, particularly in smaller rooms. If you only use the R972 for stereo, you can have a preset for mains alone and another for mains + Sub(s), providing the low end reach when desired.

Stereo using a pair of Satellite/Bookshelf plus Full Size Speakers as Subs in a Stereo Configuration

If you have some sealed box speakers with 10-15in woofers that have low bass extension that are not being used, you can effectively use them with the R972 amps as Subwoofers. (This assumes you have 2 of the 7 amp channels available.) I did this, using a pair of 15" in my office system as Subwoofers combined with 2 way bookshelf speakers. The smallish 15"s are tucked away where the Subs have the most effectiveness, and the bookshelf speakers are placed for imaging. I've configured the R972 to use the (2) "rear/mult-room amps as Sub amps by using a Y splitter to feed the amps from the Sub output. You set the multi-room input to a previously unused input, connecting the Y splitter to this from the Sub out. You can use the multi-room level to trim the Sub level. Once you have this configuration setup, you can run the Trinnov Calibration in the normal way. Of course, it helps to have efficient "Subs," as you will only get so much power out of the back amps, but I can say it works well in my office, and it's more efficient than running

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actual Subs with their extra amps. The 15" s I used for this were 3 ways. To get the most efficiency out of them, I took out the woofer to get at the internal crossover. I then bypassed the crossover, connecting only the woofer directly to the binding posts.

Two Trinnov calibrated rooms

This can be a great option, ranging from 5.1 and stereo rooms, 7.1 and stereo rooms, or even two 7.1 rooms. Adding a speaker switch, such as Niles SPK-1, may be required. I have two calibrated rooms- 5.1 + 2.1, using the preamp outs to external amplifiers. Only one calibrated room will play at a time, and cannot be done using "Zone 2," which is designed for simultaneous use of more than one zone.

IMPORTANT: While Trinnov will auto route the audio to the correct speakers (SPTL= AUTO, 2D, 3D), be advised that the R972 logic may mute the output of some channels when combined in non-standard ways. As an example, if Trinnov reports only L/C/R speakers, surround remapping may be disabled, leaving only L/R. You must confirm that the configuration you want to use works, including the layouts suggested below.

Trinnov 5.1 room + Stereo room

Both rooms can have Subs, or not. Connect 5.1 speakers. Stereo will be connected to remaining amp channels. Leave multi-room OFF. Calibrate the 5.1 room as normal, with the stereo room speakers (and Sub, if there) disconnected. This becomes memory 1. Then disconnect the 5.1 speakers, while connecting the stereo speakers to the remaining channels not used in the 5.1 configuration (don't share output connections with other room, except for the Sub output). Run the calibration of the stereo room, store this in another memory, say 2. Note: this may require a speaker switch box to make this work, i.e. the Niles SPK-1, to share channel outputs that won't be muted by the R972.

Presets select rooms: To select which room plays, assign in Input Setup page 3/3 to the Trinnov memory for the room, in this case, POSITN 1 = 5.1 System, POSITN 2 = Stereo System. Then set SPATL to AUTO, 2D or 3D. When you select the preset, the room will automatically be routed and corrected. Sub: if you have a Sub only in the 5.1 room, all switching is automatic. If you have Subs in both rooms, the Sub output is shared, so only the Subs in the room where listening should be on. Sub switching may be automated using a triggered switch box. NOTE: If no Sub is used in the Stereo configuration, confirm that the system shows no Sub (SW) on front panel during playback (confirms no output to the Sub).

If you want quickly change the room an input is assigned to, you can do it using the Setup > /QUICK/ADJ. If you make a change here, it will be remembered by the system.

Trinnov 7.1 room + Stereo room

Implementing a full 7.1 room and stereo is a bit more complicated, As it requires a speaker switch box, such as the Niles SPK-1, that uses the trigger output to switch between speaker pairs. A manual box can be used, with the downside of having to manually operate it every time you change rooms. You would follow the steps above with the added step of switching a pair of outputs from the 7.1 room to the stereo room. See the 972 manual on assigning the trigger.

Two Trinnov 7.1 rooms

Use suggestions in this document at your own risk. Always consult your Sherwood R972 Operating Instructions.

This could theoretically be done using multiple speaker switch boxes, to play one room or the other. Why you ask? I do a form of this between two rooms, one a dedicated theater and the other the main gathering area in my home. The theater- for movies, the gathering room- for listening to music in surround. Note that if you want to do this, you'll need to configure a speaker switch that can work with the R972 trigger limit of 100mA. You may need professional help with that.

Trinnov Use- Presets

You can use the presets to effectively switch between Trinnov modes and EQs. As an example, by mapping a Blue Ray Player to Video inputs 1 & 2, the inputs could be configured individually to optimize for movies or music listening. As an example Video 1 could be called "BR Music," Trinnov config set to Position 1/2D/Music/Natural, while Video 2 could be called "BR Cinema," with Trinnov settings Position 2/3D/Cinema/Flat with Cinema EQ ON. Quick changes during use can be made in the Setup/Quick Menu. Note changes here are stored in the active preset.

Useful Internet Links

Updates to this Document: <http://www.cahoyt.com/Trinnov/R972Trinnov.pdf>

R972 Manual:

http://www.largedocument.com/2/d79ae4c4/R%2D972%28A%29_ENG_Manual_090415.pdf

Video, Home Theater Magazine, CES – Trinnov: <http://www.youtube.com/watch?v=LoY-K7LXxvo>

AVS Forum: R972 Trinnov User Notes: <http://www.avsforum.com/avs-vb/showthread.php?t=1397757>

Trinnov Technology links: 3D: http://www.trinnov.com/technologies/3d-sound/?lang=en_us

Loudspeaker Compensation: http://www.trinnov.com/technologies/3d-sound/?lang=en_us

Responsibility of the User

This document is being provided to assist you in your journey with the R972. With any information comes responsibility to use it wisely and knowingly. Enjoy your experience and be safe and smart. If you don't understand the implications of your actions- get help, as you are solely responsible for the outcome.

This document is based solely on my personal experience, and yours may be different. It is not intended as an official guide, and is not published by either Trinnov Audio or Sherwood America. You the reader accept this document with the understanding that it is provided with no implicit or implied guarantee or warranty for the suitability of the R972 for your own personal use. As a condition of accepting and using this document, you accept all liability for any damage to the R972 and/or any attached components, including speakers, arising from the use or recommendations identified herein. You understand that this document is Subject to the OPERATING INSTRUCTIONS manual provided with the 972.

You may freely distribute this whole document. You must reference the document (provide acknowledgement of document, version and author) if quoting any part herein.

Use suggestions in this document at your own risk. Always consult your Sherwood R972 Operating Instructions.

By all means, let me know of your success and enjoyment.

R972 RESET

Loss of all settings with RESET! Once in Standby Mode, press and hold down the STANDBY & MEMO/ENTER buttons simultaneously for at least 3 seconds. This will reset the unit and it will turn on automatically. If the reset was successful, you should notice that the receiver powers up at 87.5 FM. If not, repeat the reset process.

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