

Pursuing the Truth in Audio & Video...

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Introduction

I remember spying the YSP-I at the 2005 CES Expo in Las Vegas. Audioholics is no stranger to this technology, but I had never personally gotten my hands on a Digital Sound Projector to review. With that about to change I readied a couple of reference rooms and thought about different ways I'd like to test such a progressive product. Many companies have employed dual channel virtual-surround systems using various technologies (and even some gimmicks) but I had never heard any systems that truly

worked well enough to satisfy anyone who had previously heard respected discrete surround sound. It's one thingforyourAunt Martha to listen to two speakers with DSP and phase delay and be impressed with the "surround" effects - it's an entirely different thing to impress a seasoned listener. Well, I'm writing this review in real time, so I'll let you know when I'm impressed - right now there's a world of potential given Yamaha's reputation for understanding DSP and I've resolved myself to be "skeptimistic."

Yamaha YSP-1100 Digital Sound Projector: Surround Without Boxes

Getting the 5.1 Surround Effect
Out of One Speaker Box

Review by Clint DeBoer of Audioholics.com



First Impressions

The YSP-I100 is a third-generation product, so Yamaha has had plenty of time to refine what was already a pretty impressive looking package. One of the things that attracted me about doing a review of their newest Digital Sound Projector was that Yamaha had added in the ability to

automatically set up the IntelliBeam using a YPAO-like configuration process. Mark my words, I'll do both a manual and automated setup, but the presence of this "convenience" feature takes this product and makes it much more user-friendly for the intended consumer and custom installer audience.





The system itself is a combination of 42 which delivers valuable information in a drivers and amplifiers along with all of the basic electronics you'd find in a digital AV intrusive (i.e. you won't be blinded or drawn receiver. This means that the YSP-1100 can to it like a moth during movies). As part of take the place of an entire 5.1 surround system. From 6 boxes (5 speakers and a receiver) down to just I box is bound to make lots of spouses very happy.

In comparing the YSP-I 100 to the original YSP-I we reviewed in 2005, there are several notable differences and improvements (see chart page 3).

As you can see, the majority of changes with the system occur in software. The addition of more DSP power to handle YPAO-like optimizer setup functionality is the largest improvement and deserves kudos. The original YSP-1 was a bit difficult to setup and became a bit of a hassle for non-installers to configure. Manual configuration is still available, of course, but this is a stellar improvement that should be a "Page I" notation.

Build Quality

The YSP-1100 is available in either silver or black. The non-removable grill cover is made of steel that is carefully designed not to ring or rattle. It also works well with the design to not disrupt the intended frequency response of the system. The effect of the unit as a whole, with it's almost 29 pounds of mass, is that of a serious piece of equipment. If this unit were designed

Review Summary YSP-1100

Custom Home Theater System Manufacturer: Yamaha Elec. Corp. Overall Rating: 4/5 Stars

Value Rating: 5/5 Stars MSRP: \$1.699

Pros

www.yamaha.com/yec

- · Optional wall-hanging bracket
- Comes in silver or black
- Multiple "Beam" modes for easy "on-the-fly" customization
- Wider sweet spot than any other "virtual surround" system we've heard
- · Improved programmable remote control
- Perfectly sized for 42" flat panel displays

Cons

- No component video upconversion
- · No OSD via component video
- · Auto setup requires manual tuning in certain room configurations
- · Remote control not backlit

Features & Options

YSP-1100 Custom Home Theater System

Speakers:

Main drivers: 40 x 1 5/8" drivers Midrange: 2 x 4 3/8" woofers Beam modes: 5-beam, stereo, 3-beam, stereo + 3-beam, My beam

The gloss black lower portion of the

Sound Projector carries a blue LCD screen

way that is easily visible but not overt or

Compatible Decoding Formats:

Dolby Digital, DTS, Dolby Pro Logic/II Music/Movie/Game, DTS Neo:6 Music/Cinema

Cinema DSP:

Concert Hall, Music Video, Jazz Club, Spectacle, Sci-Fi, Adventure, Sports

Power:

40 x 2W (main drivers) + $2 \times 20W$ (midrange); 0.1W standby power consumption

Dimensions:

40 9/16"W x 7 5/8"H x 4 5/8" D (1030mm x 194mm x 118mm)

Video Connections:

3 composite video inputs and 1 composite video output, 2 component video inputs and I component video output

Weight:

28.7 lbs (13 kg) Audio Connections: 2 optical/I coaxial S/PDIF digital inputs, 2 analogue audio inputs, I subwoofer output terminal

Misc Connections:

Remote in, RS-232C interface, IntelliBeam optimizing microphone input, IR OUT terminal

Accessories:

Detachable power cord, multi-function programmable remote control (with batteries), optimizer mic with cardboard stand, composite video cable, analogue audio cable, optical S/PDIF cable, cable clamp & fasteners

Optional Accessories:

SPM-K1 wall hanging bracket, YST-FSW100 Slim Subwoofer (silver or black)





SYAMAHA °	YSP-1100 (3rd generation)	YSP-I (generation I)
MSRP:	\$1,699	\$1,499
Finish:	Silver or Black	Silver
Auto Setup:	Yes	No
Room EQ:	Yes	No
Weight:	28.7 lbs.	28.6 lbs
Standby Power:	0.1W	0.5W
Remote:	Revised (still not backlit)	Original



my deconstruction mission I did manage to get ahold of the LCD panel for a closer look. The components I saw were all of high quality (most of the real interesting technology is located behind the YSP-1100 front panel and drivers, not below it).

Design Overview

The very nature of this system shows that Yamaha is fully capable of combining form and function into a stylistic box that looks as good as it performs. From the blue LCD display on its piano gloss black finish to the silver or black steel grill which covers the 42 drivers, Yamaha's YSP-1100 is an elegant piece to look at. As we mentioned, it will fit well underneath a 42-inch flat screen and it almost begs to be wall-mounted. With this type of system there is a ton of flexibility in placement but the best rooms are going to want to cater to this box, not use it as a last resort for rooms that cannot support rear speakers. To do that would be a shame.

Setup

other Yamaha Digital Sound Projector it to clear the Yamaha. If you have a wallproduct) it's important to note a few things about your room before selecting a location or moving forward with the placement of unit on the wall below (preferred) or above the system. If you think the YSP-1100 will work in any room under any conditions consider mounting the speaker above the you'll need to check out a few scenarios TV in order to ensure that you get some where we do NOT recommend placing this additional clearance for the beams. In either type of system:

- In a heavily acoustically-treated room or where reflective surfaces have been minimized
- In a room where furniture obstructs the beam paths (firing at roughly 30 degrees and 60 degrees from the center of the unit if parallel-mounted)
- In a room that is more akin to a football field or warehouse than a listening room (the room has to be within 23' x 23' and preferably less than 12' tall)
- Rooms missing both side walls
- In the middle of a casino (ok, that last one is obvious)

Here are some scenarios where the Digital Sound Projector will work, but in a reduced capacity:

- · Seating areas that are very close to or against the back wall (3-Beam mode and Stereo modes will work as will My Beam mode)
- · Corner-arranged rooms where one or more side walls include large openings
- Normal listening rooms where one or more side walls include large openings
- · Rooms missing an entire wall
- · Rooms with high levels of ambient noise (this goes for any speaker system)

OK, you've found your ideal location and eliminated the 4" thick first reflection acoustic materials you had custom designed for your listening room prior to purchasing the YSP-1100. Now what? Well, you can mount the YSP-1100 on top of or below the TV. A 42-inch flat panel is the perfect match, but to be honest it looks fabulous with anything up to 50-inches (I had it under a 47-inch LCD display). I tried a number of configurations, but my favorite was actually placing the unit on top of a StudioTech DP-2 RW flat panel/AV component stand and When installing the YSP-1100 (or any mounting the LCD display high enough for mounted display, then pick up the optional SPM-K1 wall hanging bracket and put the the set. If you are doing a corner mount, case take a look around the room and see what might be getting in the way of good "beam steerage" (start throwing that terminology around at the office on Monday morning). Also remember that with a corner mount location the system will operate in Stereo + 3Beam mode with the front three channels coming directly out of the system (5Beam is disabled).

Connecting Your Gear

OK, now that the unit is positioned you'll want to make your physical connections. Fortunately, the YSP-1100 comes with a plethora (I still love that word) of inputs for the typical home theater user and certainly well targeted for a lifestyle product. Let's take a brief look at the back of this device:

As you should be able to see here, there are dual component inputs as well as three sets of composite inputs. Audio can be either analogue (2 inputs) or digital (3 inputs). The idea is that you would mate digital inputs for each of the component inputs and then mate analogue for each of the two composite inputs. That leaves another digital input and composite input which can either be utilized or retained for an option. A subwoofer output connection is present and should be connected to the mono line level input of your powered subwoofer.

composite (for OSD or legacy devices) or component video output (best quality) sends video to your display.

Automatic Setup

Automatic setup isn't too difficult and involves a couple of easy steps, depending upon whether you are running a full setup or just applying the Sound Optimization level and tone of all channels. to an existing Beam configuration. To run the Auto setup simply plug in the included Manual Setup optimizer microphone (the input is on the press and hold the "Auto Setup" button on the remote for 5 seconds or enter the Auto setup using the on-screen menu system.

The Auto setup is not without its potential systems, not every room configuration can be accounted for. For example, in one of my reference rooms I ran the Automatic Setup

You don't necessarily need a subwoofer installation. The end result worked, but I got menus mark the top level and, unlike some with the YSP-1100, but your system will a much better sound when I did a manual menu systems I've seen, are well-named for sound much better with it. OK, I changed my configuration and switched to a calibrated their functions. I'll point out some of the mind – you do need a subwoofer. A single Stereo + 3Beam mode. Keep this in mind as areas I think should be highlighted below. you set up your own system and remember that you can set up the Beams manually and Sound Menu simply run the Sound Optimizer portion of the auto setup independently.

the included cardboard stand and position If, however, you're like me and have a it at the listening position (try to ensure it secondary reference system, or you are a is at ear height). At this point you can either custom installer, then the Manual Setup is likely going to occupy some of your time during the setup process - at least if you want the best results. I found the manual setup process to be a very handy tool for hang-ups, but as with all room optimizations fine tuning the settings - and for ensuring that the system doesn't make incorrect assumptions about your room or setup.

The Manual Setup menu is composed twice and both times it thought my corner- of four main areas with corresponding positioned YSP-1100 was set up for parallel submenus: Sound, Beam, Input, and Display

Editor's Note: Reflective Rooms

Many people aren't aware of whether their rooms are considered "reflective" or not. A quick and easy method for determining this would be to get into the listening position and clap your hands loudly. If it takes longer than I second for the decay of that sound to go away, you can pretty much assume that your room is a bit reflective. Items that contribute to this are: sparse furniture, wood floors, high flat ceilings and oversized rooms. If you can read this entire paragraph while the echo of the clap reverberates through your listening room, well then you better go get a throw rug and some drapes!

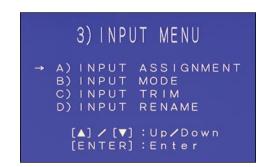
The Sound menu is where you have access to Tone controls, Subwoofer settings, The Sound Optimizer portion of the Mute level (either full or -20dB), and Audio Auto Setup configures the distance delay as Delay (0-160ms in Ims steps). The Room well as the volume and EQ settings for each EQ submenu also present here does not, of the beams in order to correctly blend the as some will think on initial glance, provide automatic room EQ. Instead, it sets the mounting position of the YSP-1100 (shelf or wall) and whether the room is "Normal" If you're a tweaker you probably won't or "High Echo". If you don't have much left side of the enclosure), place the mic on be using a YSP-1100 in your main room. furniture and have wood floors, you may want to select "Hi Echo".



Beam Menu

In the Beam Menu you are presented with Settings Parameters (corner or center wall placement and height) and the Beam Adjustment menu. Here you'll have access to horizontal and vertical angle adjustments as well as the beam travel height, focal length and treble gain. But what exactly that means will ultimately determine if any of this info is useful to you. First of all, the system gives you pink noise for Horizontal and Vertical Angle adjustments, as well as for focal length, but not for the other submenu items. This means that the first two can be done from the listening position using your

ears (imagine that!) but the last three will Direct input buttons need to be a combination of measuring and are included – a plus, trial and error. This, of course assumes you and all of the buttons weren't satisfied with the Auto Setup which configures all of this for you.



Input Menu

The Input menu gives the user manual and could use some control over input assignments, modes, minor improvement. and trims. You can also rename the inputs. I was pleased to see level trims included Listening Tests - Music in this menu. What is not present are doesn't even convert composite video to component. This means that you'll need to run both component video to your television as well as composite should you happen to have legacy equipment or use more than two devices with component tracks with which I was very familiar. video outputs. Another thing to note is that the YSP-1100 does not allow the on-screen display to function over component video (the signal paths are completely separate and isolated). While this may actually yield higher quality component video it also serves as a potential hassle for setting up the unit or making adjustments.

The final menu controls the front panel dimmer. It actually allows you to have an auto-dim mode and set the brightness. Alternatively you can leave it on full brightness or turn it off. This is also where you select meters or feet for the measurements and settings menus.

Remote Control

easy to program and seems to have any boxiness that plagues certain systems. sound and vocals, while a tad bit sibilant, everything one would need to run the The soundstage was pretty narrow, but this had a natural quality. If McIntosh can use a system - including basic functions for was a two-piece acoustic session. In any case, hundred and ten drivers in a single cabinet controlling a TV, DVD player or other legacy engaging Stereo +3Beam mode widened the and charge \$40k, I suppose it's possible for device. The big thing it lacks is backlighting stage significantly and recessed the vocals. Yamaha to get \$1,600 worth of excellent - which I think should definitely be included. ever so slightly so that they were front and sound out of 42!

seem to be well within reach - at least for my fingers. I liked the easy sliding switch on the right side which flips the remote from YSP-mode to TV/AV (so that the number buttons can control auxiliary functions in addition to the IntelliBeam controls.) It's a decent remote that gets a good rating

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any options for upconversion - this unit of what we do here at Audioholics. It was important, to me at least, to see how well the Yamaha YSP-1100 would handle surround music as well as stereo. With a unique system such as this I was curious and quickly fired up several different discs and

High Resolution 96 kHz/24-bit PCM Stereo: Ionathan McEuen One Step Ahead (corner placement)

(which also has surround sound tracks) I wanted to see how well high resolution stereo played back on the Digital Sound Projector. The first track "Two of Us" is a beautiful

On this album



song and I felt that the quality of sound I'm going to keep this brief. It's efficient, reproduction was very good. Vocals lacked

center, but no longer directionally coming from the exact center of the speakers (actually a nice effect).

"You Will Always Win" is another acoustic piece (the basic and successful format for this album) that really came though with solid main vocals and well-blended backing harmonies. I flipped this disc into surround mode - I just couldn't resist - and settled back to hear the differences between authentic surround and the Stereo + 3Beam mode. Wow. Immediately I could hear the natural room reverb on my right and left. lesse Siebenberg's backing vocals too, on a more open and airy sound and the mix suddenly felt "right". I felt as though the sound was now truly in three dimensions instead of two and the Yamaha seemed to really excel at bringing through this new type of "boundary-free" surround sound.

Just a couple more songs... "Lowlands" is tied for my favorite track on this album As always music is an important part and I have heard it now on several different loudspeaker systems in several different rooms - numerous times. The YSP-1100 put forth a very different experience, but one that again was convincing and completely without boundaries. Violins were in the room and vocals had good separation. The banjo had that solid fingering sound and the bass wasn't missing the lower midrange tonality that I experienced on other systems. If you want a more defined surround field then direct radiating speakers will deliver that to you, but the immersive feel of the Yamaha was something to behold.

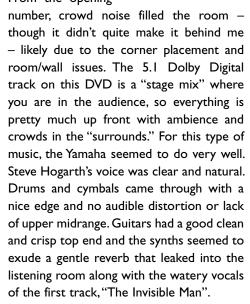
High Resolution 96 kHz/24-bit PCM Stereo: Ionathan McEuen One Steb Ahead (parallel placement)

Wow, with an immense soundstage this album really takes off. There seemed to be a slight mid-bass emphasis that is more noticeable without a sub than with one (and you really have to have a sub with this system - have we beaten that into your head yet?) "Two of Us" had a realistic guitar

guitar intro with solid, heavily reverberant, disc. When the chorus kicked into its jazzy vocals. As the reverb is natural and not an crescendo I felt the overall presence in the a corner placement setup at the start of effects box, this was a good demonstration of the YSP-1100's best effort to fill my fuller feel and the YSP-1100 reacted to the system in two reference systems - so take reference system with a nice, smooth and reverberant sound. It accomplished the the listening environment. goal and soundstaging was wide and open. Nothing seemed out pf place or forced by **DVD: Marillion** the system. Yamaha seems to have found a very natural method of steering the channel information where it needs to go. As with the other discs, a parallel setup was clearly changed as much - crowd noise was still superior to the corner placement - again due to the wider front soundstage which is hard to reproduce in Stereo + 3Beam mode.

DVD: Marillion Marbles on the Road (corner placement)

Marillion is cool. They just walk out onto stage when they play no needed, excellent performances and talented musicians. From the opening



"You're Gone" is one of my favorite tunes and man did it sound good on the Yamaha. With the room full of Hogarth's lyrics and the melodic guitar line following through in crisp detail I thought this was one of the

"Ocean" features acoustic bass and a gentle coolest ways I had yet experienced this Listening Tests - Movies room step up a notch. The mix took on a evaluation (I'll actually be evaluating the additional surround info and poured it into

Marbles on the Road (parallel placement)

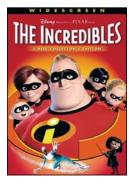
On this disc the surrounds were not well-place and evident from the opening of the song through each interlude. The front imaging, again, was much more convincing and realistic. The 5Beam mode is clearly a winner here and it does amazing things with music DVDs. As Marillion's Steve Hogarth sings the opening track in his sultry voice, bass and synthesized guitar effects permeated the room and generated a very full mix. As I skipped to "You're Gone" I realized that I hadn't really checked out the DSP modes of the YSP-1100. I tried out the various Music modes and made some notes mode and "Off" quite easily):

- Concert Hall: Adds more front channel information into the surrounds and also adds a reverberant delay. The front vocal is a bit less "centered" with the DSP on and it seems to get sent, to a greater degree, into the left and right channels.
- · Jazz Club: Vocals remained anchored in the front center of the soundstage, though they were pulled a tad into the surrounds. Guitars were more present in the surrounds and the soundstage appeared to be a bit wider overall. It is a good effect and does seem to recreate a more "live" environment without bringing in too mush reverb.
- Music Video: This DSP mode seemed to almost squash the sound a tiny bit. In a sense it decreased the sound stage and the overall fidelity – which I suppose would blend quite well with many of today's pathetically obtuse and poor quality music videos. This mode had the least effect on the original sound.

I utilized the Manual setup since I had note of my setup details). Auto Setup did not correctly configure the system as being in a corner-oriented installation, so I was unable to use the auto setup.

DVD: The Incredibles (corner placement)

queued up Chapter 23 "100 Mile Dash" to see how well the corner configuration would work with surroundthe heavy material in this section of the movie. Right off the



bat my observations through the manual setup process were also discerned by the listening tests. The surround left channel was (you can switch back and forth from each almost impeccable. Sounds coming from the rear were not nearly as impressive though the overall envelopment was excellent. As Dash runs across the water and enters the cavern the ambience correctly changes and you could almost "feel" it in the room (this happened again a short while later when Violet produces a bubble which saves them from the gunfire. In the ensuing family battle against the spinning ships, envelopment was almost total, with only a slight lack of presence on the right side due to my lack of a full side wall and corner placement. Keep in mind that in this first pass the system was operating in Stereo + 3Beam mode (the only option for surround sound with corner

Overall the effect is a bit uncanny. Switching between stereo and Stereo + 3Beam really allows you to hear what the YSP-1100 is doing. It's a feeling of surround envelopment without point sources. Whereas dipole speakers attempt to diffuse surround fields, the Digital Sound Projector completely achieves this goal.

DVD: The Incredibles (parallel placement)

During the "100 Mile Dash" chapter the surrounds were engaged in overdrive. Environments were summersive and Dash frequently showed up in the surround tracks as did the flying vehicles. In the ending battle scene against the giant robot there was a lot of "off-screen" action which was well represented directionally by the YSP-1100. This scene in general is excellent testing material for surround effects and making sure you are correctly configured surround sound it was more of a "real" the 5Beam mode was amazing. The front 5Beam system. left and right channels were separated in a much wider soundstage - so much was even more impressive, with falling so that the system was able to position wooden arrows that literally came down Recommendations these channels at the extreme edges of my from everywhere. I found that if I leaned four feet outside of and the same amount but that is where configuring the system higher than the edges of the YSP-1100. properly comes into play. Most of the sound What's possibly more impressive was that was locate in front of the seating position the perception was that the sound was slightly, but the effect was still immersive. coming from behind the Yamaha, which was positioned in a temporary spot 1.5 feet in front of the screen.

QUENTIN TARANTINO PRESENTS

DVD: Hero (corner placement)

On this DVD I wanted something a bit more epic that could allow me to hear more of a feature film mix of production audio and sound design. are also

There excellent scenes

where surround sound is fantastically demonstrated. Chapter 7 "Advance Ten Li's character takes out an entire room of projector screen. bamboo in the blink of an eye. The YSP-1100

"I was very impressed by the YSP-I 100's build quality. The non-removable grill cover of the YSP-1100 is made of steel that is carefully designed not to ring or rattle. If this unit were designed any sturdier it would be suitable for military use."

Clint DeBoer

for 5.1. I would have to say that parallel sound that literally came from all directions. the option of 5Beam mode and Stereo + the setup in the next room with a parallel

The following chapter "Flying Snow"

DVD: Hero (parallel placement)

This was a night and day difference. With the system set up in parallel mode in my first reference system (with all acoustical panels removed) the effects of the YSP-II00 were nothing short of breathtaking. To get this type of surround sound presence from a single box is absolutely astonishing. In Chapter 7, let Li floats around the room and the sound of the bamboo breaking is unmistakably real. In addition, the height adjustments made by the Auto Setup rendered the final sequence where he catches the cup on his sword perfect - the cup sounded as if it landed directly on the sword - in the middle of my 100-inch screen. Keep in mind that the Yamaha Digital Sound Projector is situated Paces" has a well-known scene where let about 1.5 feet below the bottom of the nice and it does add some lower frequency

recreated this in an almost eerie manner. the wooden arrows fell all around the room With no direct radiating speakers the effect — however this time the soundstage was was of being in the room itself. Instead of immense. In addition the sound extended

to beyond the seated position, unlike in the other reference room with a corner install. placement won this round as well - the The right side was still a bit weak due to my Viewing this allowed me to realize that the room simply did much better and having room, but I looked forward to re-evaluating system could be optimized in a myriad of rooms, however the more rectangular you 3Beam was a plus. The difference in having installation and four solid walls to utilize the can get it, the better your overall results will be (this corresponds to suggestions made within the user manual as well).

Making recommendations to a company Stewart projector screen - that's about forward or back the imaging would change, like Yamaha is tough - they almost seem clairvoyant in their ability to provide new products with advanced features and bug-free performance. The Auto Setup is acceptable on this system, but users may have trouble with corner placement. It would be cool to have a "lock-down" mode whereby the type of setup (corner or parallel) is selected as part of the setup process. Then the system can calibrate from that fixed position and information.

> Lastly, we'd like to see a flagship model with component video upconversion and an on-screen display that doesn't limit itself to the composite video outputs only. HDMI would be nice as well, but I don't see it as a necessity with this style of product - at least not right now. A backlit remote rounds out my suggestions and completes this short "shopping list" of suggestions.

If you're planning on using this in your room for home theater or more than just occasional casual listening, we recommend a subwoofer. The included TruBass feature is perception, but you can't beat a real During "Flying Snow" it sounded again as if subwoofer (or two). Adding a sub really completes this system and brings it to the next level - so make sure you add that to



Conclusion

The Yamaha YSP-1100 is NOT a typical pseudo-surround system. This is a sophisticated device that literally does what it says. Taking just one physical box you are able to convincingly recreate a 5-speaker surround environment - but that's not exactly true. While 5 speakers can give you surround sound, and inexpensive system is often localizable and highly directional. The Yamaha YSP-1100 almost envelopes you in a sound "bubble" and is an altogether different experience. If you think you've heard these "one speaker does all" systems before, take another look - the YSP-1100 is NOT like anything else I have ever encountered in the industry. This is breaking new ground and I like where it's going. Perfect for consumers who are looking for lower profile system, the YSP-1100 replaces an AV receiver as well as a surround sound speaker system. Taking into account that there are a host of manufacturers who charge more for a simply combined flat panel LCR speaker, the YSP-1100 is a veritable steal and has earned its 5-star value rating.

> By Clint DeBoer Email - info@audioholics.com

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About Yamaha

Yamaha Electronics Corporation (YEC), USA, based in Buena Park, California, is a wholly owned subsidiary of Yamaha. YEC offers home theater components and systems, featuring A/V receivers, amplifiers, DVD/CD, speakers, mini-systems, video projection, as well as A/V & IT convergence products.

Score Card

The scoring below is based on each speaker doing the duty it is designed for. The numbers are weighed heavily with respect to the individual cost of each unit, thus giving a rating equal to: **Performance x Price Factor/Value = Rating**

Audioholics.com Note: The ratings indicated below are based on subjective listening and objective testing of the product in question. The rating scale is based on performancel value ratio. If you notice better performing speakers in future reviews that have lower numbers in certain areas, be aware that the value factor is most likely the culprit. Other Audioholics reviewers may rate speakers solely based on performance, and each reviewer has their own system for ratings.

Audioholics Ratings Scale:

- **△ △ △ △ △ △ △ △ △**

- **△** Very poor

METRIC	RATING
Build Quality	00000
Appearance	0000
Treble Extension	0000
Treble Smoothness	0000
Midrange Clarity	888
Midrange Accuracy	0000
Midbass Quality	8888
Bass Extension	NA
Bass Accuracy	888
Imaging	00000
Soundstage	00000
Macro Dynamics	0000
Micro Dynamics	888
Remote Control	888
Overall	0000
Value	00000

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