

Samsung HW-N950 Soundbar Review

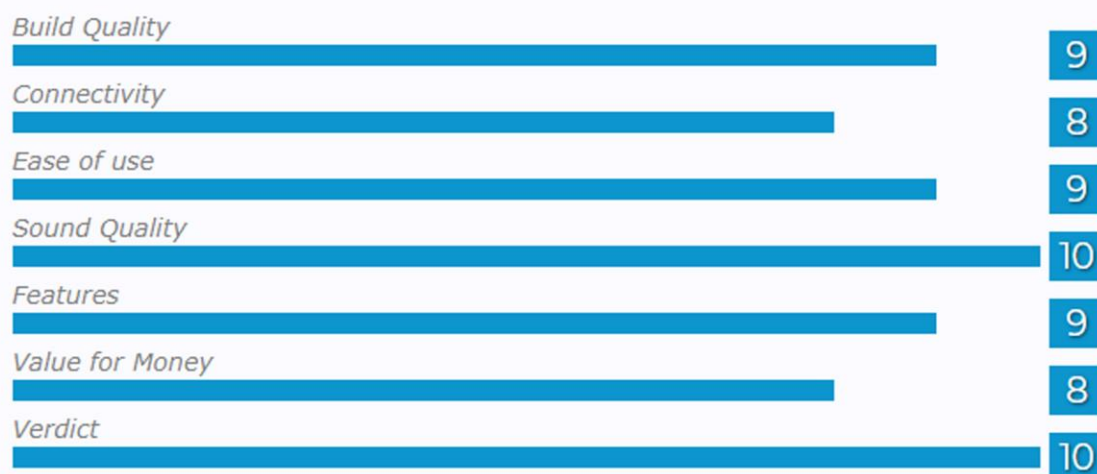
Full immersive audio with the minimum of fuss

by Steve Withers Aug 27, 2018 at 7:52 AM

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The Rundown



What is the Samsung HW-N950?

The Samsung HW-N950 is the manufacturer's latest flagship soundbar, offering a 7.1.4-channel configuration and support for Dolby Atmos and DTS:X. It forms part of Samsung's Cinematic range and is the first to benefit from the company's recent Harman Kardon acquisition.

The new soundbar replaces the Samsung HW-K950, and directly addresses issues raised in our original review; so unlike that earlier model, the N950 now supports both object-based audio formats. While not the first soundbar to do so, it is the first to deliver 7.1.4 channels without resorting to psychoacoustic trickery.

To do that the N950 uses a genuine 7.1.4-channel speaker layout, with the front left, right and centre channels, front top channels, and width channels all emanating from the main soundbar. There is also a wireless subwoofer and two rear speakers that deliver the surround channels and the rear top channels.

The N950 currently retails for £1,499, as at the time of writing (August 2018), so it isn't cheap but when you consider how much a nine-channel AV receiver and 5.1.4 speaker package would cost, the soundbar starts to make sense. Of course, the real question is what does it sound like? If the N950 can deliver in terms of its performance, then Samsung might be on to a winner.

Samsung HW-N950 Design

The Samsung HW-N950 boasts the company's usual soundbar design, which means the main unit has a rectangular shape and a minimalist appearance. The build quality is excellent, with metal grilles at the top, front and sides, along with a brushed metal finish to the edges and rear. The N950 only comes in what Samsung call a 'Midnight Titan' finish – which is black to the rest of us.

The soundbar is fairly large at 1226mm wide, and designed to compliment TVs with a screen size of at least 55 inches. You'll need a minimum of 83mm beneath the screen and at least 136mm in front of the TV to install the N950, although there is an included bracket for wall mounting. The main unit weighs in at 8.8kg, so its also quite heavy.

It shouldn't come as a surprise to discover the soundbar is heavy, especially when you consider that there are 13 drivers built-in, with separate amplification for each one. These drivers are used in seven speakers – three front channels (left, centre and right), left and right width channels, and two upward-firing drivers for the top front left and right channels.

In keeping with the minimalist design, there is only a simple LED display over on the front far right of the soundbar. When you use the controls it lights up, providing information on the volume, inputs and various settings. The only actual controls on the soundbar are a few basic touch-sensitive buttons for power, input selection and volume at the top centre.

The N950 includes wireless rear speakers that match the design aesthetic and build quality of the main soundbar, with metal grilles on the front and top, and a black brushed metal finish. The built-in amplification powers forward-firing drivers for surround left and right, and

upward-firing drivers for top rear left and right. The speakers themselves measure 120 x 210 x 144mm (WxHxD) and weigh 2kg.

The rear speakers are wireless, in the sense that you don't need to physically connect them to the soundbar at the front of the room. This makes positioning them at the back of the room easier and doesn't require any long cable runs. Having said that, the speakers aren't completely wireless because the built-in amplification requires power, so you will need to plug them into an electrical wall socket.

There is a two-pin power cable for each speaker that connects into a groove in the underside of the speakers, keeping things flush. The speakers can be placed on a shelf or a stand, and there are screw fixings at the rear for wall mounting. Also at the rear you'll find indicator LEDs that show when the speakers are in standby or paired with the soundbar, along with a button for manual pairing if necessary.

The N950 comes with a wireless active subwoofer that uses a bass-reflex design with built-in amplification and a side-firing 8-inch driver. It is designed to complement the main soundbar and rear speakers, and is also well-made, measuring 204 x 400 x 416mm (WxHxD) and weighs 9.6kg. The sub should pair automatically with the main unit but if it doesn't, there's a button similar to the one on the wireless speakers that allows manual pairing, along with indicator LEDs.

The soundbar, rear speakers and sub are all very well-made, with a matching aesthetic

Samsung HW-N950 Connections & Control

All the connections are located in a single recessed section under the soundbar, and here you'll find two HDMI inputs and an HDMI output with ARC (Audio Return Channel). All the HDMI connections support 4K/60p, 4:4:4, Rec.2020, High Dynamic Range (HDR10 and Dolby Vision), 3D and HDCP 2.2.

The N950 also includes an optical digital input, along with built-in WiFi and Bluetooth. On the underside you'll also find a USB port for service updates, a connector for the two-pin power cable, a button for WiFi setup, and a button for pairing the wireless surround speakers and subwoofer if necessary.

The included remote control looks attractive, is comfortable to hold, and follows a similar minimalist design aesthetic. It has a central navigation and play/pause control, along with a button for setting treble, bass, audio sync, and the levels of the various speakers. There's also a source select button, a Bluetooth pairing button, the sound mode (Standard, Surround and Smart), volume up and down, mute and a control for setting the subwoofer level.

There are two HDMI inputs and an output, that all support 4K HDR including Dolby Vision

Samsung HW-N950 Samsung HW-N950 Features & Specs

The Samsung HW-N950's headline feature is its ability to decode both Dolby Atmos and DTS:X and to do so using a genuine 7.1.4 speaker configuration. Unlike all the other soundbars on the market that purport to support immersive audio, the N950 is the only one to use actual speakers rather than virtual processing or psychoacoustic trickery to deliver the experience.

The N950 certainly means business in terms of its speaker layout and capacity, with a 7.1.4 system that utilises no fewer than 12 speakers built around a total of 17 drivers. The front three channels are composed of three drivers each, using two woofers and a wide range tweeter. This creates a solid front soundstage that is augmented by all the other channels, which use single drivers.

All 17 drivers in the system are powered by individual amplifiers with a total of 512W, although Samsung hasn't specified how this amplification is actually allocated to each driver. I suspect quite a lot of it is used in the subwoofer. The system as a whole has a claimed frequency response that goes from 34Hz to 17kHz, with the subwoofer doing the heavy lifting when it comes to the lower frequencies.

The N950 is the first product to have been co-developed between Samsung Audio Labs and Harman Kardon, with the former ensuring the soundbar supports Dolby Digital, Dolby Digital Plus, Dolby TrueHD and Dolby Atmos, along with DTS Digital Sound, DTS-HD Master Audio and DTS:X. That will be music to the ears of those who remember that in a serious misstep by Samsung, the HW-K950 was initially limited to two-channel DTS when it was first launched

Harman Kardon meanwhile, has used its considerable audio experience to ensure that the soundbar meets the expectations of discerning listeners by delivering a sound that is dynamic and spacious but retains clear voicing.

Aside from the addition of full DTS support, how else does the new soundbar differ from the earlier K950?

For a start, Samsung has added side-firing speakers to the N950, creating width speakers in a 7.1.4 configuration. The new soundbar also uses the second generation of Samsung's wide-range tweeter, which now boasts an improved lower frequency response, although again Samsung are a bit vague on details.

As was reported by owners, the K950 also had connection issues with regards to its rear speakers, so Samsung has enhanced the wireless coverage, improving the rear speaker connection.

As with previous Samsung soundbars, the N950 includes various sound modes that use digital signal processing (DSP) to enhance the audio experience. The standard mode just decodes the audio format as it is, the surround sound expansion mode upmixes the audio to use all the available speakers, and the smart mode analyses the incoming signal, choosing the best available processing.

In terms of other features, the N950 includes built-in Wi-Fi and Bluetooth, which allows users to effectively access their music libraries and streaming services. The Wi-Fi connection is simple to setup using Samsung's SmartThings app, and the Bluetooth can be paired by just pressing the pairing button on the remote control.

The N950 supports numerous lossy and lossless audio formats including AAC, WAV, OGG, ALAC, AIFF and FLAC, with high-resolution support up to 32-bit. Samsung has also included UHQ 32-bit upscaling for the highest quality audio playback, assuming your devices supports it.

Finally, the N950 includes Amazon Alexa voice control. To set this up, simply go into Skills on the Alexa app and enable Samsung Wireless Audio, then under Smart Home you select devices and discover the N950. This will enable the 3PDA skills and allow you to interact with your soundbar using Alexa voice control.

There's a decent set of features, with the headline being support for Atmos and DTS:X

Samsung HW-N950 Setup & Testing

Despite the apparent complexity of the Samsung HW-N950, it's actually fairly easy to setup: you simply place the soundbar beneath your TV (ensuring that nothing is blocking any of the drivers) and then position the subwoofer towards the front of the room and the surround speakers at the rear.

I put the rear speakers on stands a metre or so behind and either side of the main listening position, with the front-firing drivers facing towards the front of the room. That gave the speakers some room to breathe, mirrored the soundstage at the front, and provided space for the upward-firing drivers to hit the ceiling and bounce down to create the rear overhead channels.

The soundbar was about three metres from my main listening position, but it can go further back than that if your room is bigger than mine. Once again the upward-firing drivers should hit the ceiling towards the front third of the room, creating the front overhead channels. The side-firing drivers are there to create greater width, rather than to be genuine side channels.

It's worth pointing out that the upward-firing drivers require a low, flat and reflective ceiling to work best. If your ceiling is very high, vaulted or will absorb sound waves, then the effect is diminished. In my case, the ceiling in my lounge is low, flat and reflective, making it ideal for this kind of technology.

The wireless speakers and subwoofer should pair automatically with the soundbar, creating the full 7.1.4-channel system. All you need to do then is use an SPL meter (if you don't own one, there are plenty of free SPL apps for your phone) to set the levels for the centre, side, front top, rear, rear top and subwoofer channels.

I would recommend that you ensure the rear speakers are equidistant from the main listening position. Not only is this best practice, but the level control for the rear speakers affects both simultaneously, so you can't change each one individually to allow for one being further away than the other.

The N950 is relatively easy to setup, but it is also rather basic in terms of any delays or room EQ, especially when compared to the competition. Unlike many other soundbars, there's no dedicated microphone or set-up app. Perhaps now that Samsung own Harman Kardon, that company can add a more sophisticated setup and room EQ feature in the future.

However, if you take the time to position everything carefully and set the channel levels correctly, the result is a cohesive soundstage with well-integrated bass. Thoughtful set-up will definitely pay dividends in terms of the performance of this soundbar, with a wide and open front soundstage, immersive effects and an impressive tonal balance thanks to the use of the same drivers in all the speakers.

For testing I connected various devices directly via HDMI, including an LG UP970 UHD Blu-ray player, a PS4 Pro, an Apple TV 4K and a YouView set top box. I also tested the Audio Return Channel capabilities of the soundbar by connecting everything to an LG 55B7 OLED TV and sending the audio back via ARC.

Since the B7 supports Atmos on its Netflix app using Dolby Digital Plus for delivery, I tried to send Atmos back to the N950 via ARC. Unfortunately I couldn't get it to work, but I'm not sure where the problem lay. The LG TVs are supposed to be able to send Atmos from the Netflix app to a supporting soundbar or receiver via ARC, but it appeared the B7 wasn't sending Atmos to the Samsung.

I also connected the N950 to my wireless network using the SmartThings app, and I paired the soundbar to both an iPhone X and a Samsung S9+ via Bluetooth, allowing me to test its capabilities with streamed music. Finally I set up the Alexa skills of the soundbar using the Alexa app, so that I had voice control using my Amazon Echo. However, as with all the voice interaction features I have tried to date, I did find it frustrating to use, with the phrasing of instructions having to be very specific for Alexa to understand.

In terms of more traditional forms of control, I had the option of the provided remote, the TV controller or the SmartThings app. The source button allows you to cycle through all the available inputs, whilst the sound mode button allows you to select from three different sound modes – standard, surround and smart. There's also a subwoofer control that allows you to adjust the level of the wireless sub if needed.

The setup was easy, but some kind of automated room EQ would be nice.

Samsung HW-N950 Performance

The Samsung HW-N950 impressed right from the off, and that was before I'd had a chance to actually test any object-based audio content. The sound quality was excellent, suggesting that Harman Kardon had certainly done their job in terms of tuning the soundbar to deliver a performance that would please even the most demanding of music fans.

I recently picked up the 30th Anniversary box set of Appetite for Destruction by Guns 'n' Roses, and whilst it wasn't cheap it did include a copy of the album in both 2-channel and 5.1-channel high-resolution audio. The N950 did a fantastic job with the 2-channel version, reproducing Axl's vocals with real aggression, driving the beat with urgency and impact, with a solid mid-range spread across the front of the room. The 5.1 mix was even better, immersing the listener in the music and delivering the instruments with clarity and precision.

I also listened to various tracks streamed from both the iPhone X and the Samsung S9+, and again the N950 did an excellent job of handling tracks from Suede, Kate Bush and Nick Cave. I found that streaming from the UHQ-supporting S9+ was superior to the iPhone X, but whatever you use the Samsung soundbar proves itself to be a great performer when it comes to music.

In terms of 5.1-channel audio from TV shows and movies, the N950 was equally as impressive. It delivered the entire surround sound field with great skill, as the rear speakers picked out effects and music and dialogue was spread across the front of the room. Watching Luke Cage on Netflix proved a great test of the soundbar's ability to handle a solid 5.1 mix. Dialogue was anchored to the screen, the reggae music and numerous punches were delivered with plenty of bass, while the effects were steered around the room with precision.

As always, I used Gravity to check the system's ability to retain its tonal balance as sounds moved around the room, while the dynamic range of the Dunkirk soundtrack was also delivered with power. This is a system that can definitely fill a large living room, it can go very loud without distorting or sounding brittle, and the bass can shake the furniture. The upmixing also works very well, taking 5.1 and 7.1 tracks and giving them a greater sense of immersion by using all the channels. For example, the beginning of Dawn of the Planet of the Apes really opens up, with a sense of thunder above and rain falling all around.

While it's great that the N950 is able to handle 2-channel and 5.1/7.1-channel audio so well, the soundbar's big selling point is its ability to decode Dolby Atmos and DTS:X, and here's where it really impressed.

As always I started with the 'Amaze' trailer on the Dolby Atmos demo disc, and I was immediately struck by how good the N950 sounded. It delivered this dense and highly active mix with real skill: sounds moved around the room in a three-dimensional fashion, a bird fluttered across the soundstage, deep thunder rolled overhead, and rain fell all around.

I have heard 'Amaze' on some serious systems, not just high-end AV receivers but also reference-setting AV processors and even in Dolby's own cinemas. So I'm very familiar with the trailer, and I thought the N950 did a superb job of delivering this soundtrack that was custom-made to show-off the format's capabilities. The Samsung also handled the test tones

on the Atmos disc correctly, and the same was true of the test tones on the DTS:X demo disc that I have.

The scene where a storm hits the mountaineers in the movie Everest was handled particularly well, with ice and snow blowing all around the room and thunder rumbling across the front soundstage and overhead. The subwoofer really made itself felt, but despite the dynamic nature of the mix, the dialogue was always clear within the cacophony of sounds that were whirling around the room.

The musicality that I discovered when first testing the N950 was also apparent when I watched scenes from Baby Driver, where the music and sound effects are edited together in a uniquely choreographed fashion. At this point I was becoming increasingly impressed by the N950, confident that for the first time I was experiencing a soundbar that I was prepared to accept in lieu of a dedicated AV receiver, speaker and subwoofer combination.

Since the N950 supports DTS:X as well, I put on the new 4K disc of Jurassic Park and the soundbar continued its run of good form. The bass that heralds the T-Rex's arrival was suitably deep, while its roar was nearly deafening. The sounds of the jungle were delivered with pinpoint accuracy, while the rainstorm felt like a real deluge. John Williams's iconic score was delivered with width and verve, but the dialogue always remained perfectly clear.

The same level of performance was apparent when I watched Harry Potter and the Philosopher's Stone, which boasts a new DTS:X mix on its 4K disc release. This new soundtrack is a triumph, using the surround and overhead channels to create a highly immersive experience. High points included players whizzing around the room during the quidditch match, the deep bass in the growls of Fluffy the three-headed dog, the flying keys coming at you from every possible direction, and the impact of the effects during the 'Wizard's Chess' sequence.

Quite frankly the N950 is one of the best soundbars I have heard to date, and when it comes to Dolby Atmos and DTS:X it is the best. If you want to add immersive audio to your living room but don't want the complexity and mess of installing an AV receiver and 5.1.4 speaker system, then the Samsung is just the ticket. In fact the HW-N950 is worth considering even if you could install an AV receiver and speaker package, it's that good.

Samsung HW-N950 Verdict

The Samsung HW-N950 is one of the best soundbars that I've ever heard, building on the success of the HW-K950 but addressing the limitations of that earlier model. It's the only soundbar currently available that can deliver an immersive audio experience using actual speakers rather than psychoacoustics, and it supports both Dolby Atmos and DTS:X. In fact the N950 is the first soundbar I feel can genuinely be considered an alternative to an AV receiver and Atmos/DTS:X speaker package. If I was planning to add surround and Atmos/DTS:X support in my lounge, I would definitely have the N950 at the top of my short list.

It's a superb performer, delivering a genuinely immersive surround experience. The front soundstage is big and open, with added width thanks to the side-firing drivers, but within this dialogue remains clear. The use of identical drivers gives the system a tonal balance, while the subwoofer is nicely integrated and provides solid support. The upward-firing drivers work particularly well in my lounge, delivering a clear overhead presence. Whatever you listen to the N950 has got you covered, but it really gets a chance to shine with Atmos and DTS:X. The excellent design, build quality and features round off what is an impressive package.

In terms of alternatives, the N950 is currently unique. There are no other soundbars that offer this level of genuine immersion, which means you really do have to look at a nine-channel AV receiver and 5.1.4-channel speaker package. It's true that the N950 isn't cheap at £1,499, but I think you'd struggle to build a comparable separates system for less. So in that sense, the Samsung HW-N950 isn't just the best soundbar in its class, it's the only soundbar in its class.