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Mackie HR624 & HRS120

Mackie has followed up the success of the HR824 active monitor with a more compact version. Brad Watts combines them with the new earth shaking HRS120 sub.

The mighty Mackie machine marches forward! Since the release of the HR824 a couple of years ago, Mackie could well be the heir apparent to the 'Industry Standard Studio Monitor' crown. So many studios I visit have a pair that one could refer to the HR824 as the NS10 of the 21st century. Quite an achievement in a market now saturated with monitors, all claiming to give the 'flattest' response. Now while the 824 is a fine monitor it can be a little large for smaller studios and project setups. Additionally, with the growing need for monitoring multichannel formats such as 5.1 surround, Mackie has decided to release a monitor more suited to such production – a compact version of the 824 utilising a six-inch bass driver and aptly tagged the HR624. Along with the release of the 624, Mackie has bestowed on us

the earth-shaking

HRS120 sub bass cabinet. I happily took receipt of two HR624s and a single HRS120



sub – the walls in my studio haven't been quite the same since!

Mackie certainly means business with the 624s. The monitors and sub adhere to the guidelines of Lucasfilm's THXpm3 standard (like the 824s before them). THX approval implies that your production equipment is suitable for use in a studio carrying the THX badge. The studio must use this approved equipment and the studio must be configured to THX standards. These thorough standards stipulate reverb decay times, room acoustics, the control rooms noise floor, monitor placement... and the list goes on. The standard exists so that a mix produced in a THX room will translate correctly in a THX approved cinema. The HR624 and HRS120 adhere

to the THXpm3 guidelines. The 'pm3' designation is for smaller THX rooms.

Six of the Best

Initially we'll inspect the 624s, as they're the starting point for any system. As with most monitors these days, the 624s can be ordered in single units. The front panel keeps a similar look to the HR824 only this time round with a little more class. The upper waveguide is a die-caste zinc alloy and is acoustically non-resonant. This accommodates the high-end driver along with the power/mute button and power LED. A separate red overload or clipping LED informs you if the signal is getting a little too hot. The shiny Mackie badge even gets integrated into the swish looking waveguide facade. The bass driver fits snugly below. Various options are available for mains power. A three-position switch at the rear of the box sets power to either On for typical operation, Standby or 'Auto On'. Most interesting is the Auto mode. In Auto mode the monitors will power up when they sense a signal greater than -74dBu. After four to five seconds the monitors come to life. After a period of eight minutes or so the 624s will slip back into sleep mode. Good, I suppose, if you're extremely energy-conscious but I'm more inclined to keep powered monitors on – all the time. Protection circuits are employed to protect the drivers. A blinking overload LED informs you when you've tripped the thermal overload and a compression circuit cuts in to reduce input level to the monitors. You really notice when the compression kicks in. Mackie point out that this compression is not for mixing.

The actual cabinets are built from 16mm MDF and finished in a black woodgrain veneer, with the front panel being 26mm thick MDF. The boxes are strengthened further with internal bracing.

Adiabatic foam fills the interior of the cabinet to further reduce internal reflections and standing waves. The typical high standard of Mackie's manufacturing ethics are reflected in the HR624s. Driver-wise the 624s employ a (ready for this?!) 170mm die-cast magnesium frame bass driver and a 26mm viscous edge-damped aluminium-alloy dome high end driver. The rear of the cabinet features a six by nine-inch (elliptical) passive piston radiator. This system extends low frequency response by either absorbing or, in fact, augmenting bass frequencies. It's a system that negates the need for porting and vents, and thus avoids the breathing or chuffing sounds associated with ported cabinets when run at high sound pressure levels. This radiator design

results in sound actually emanating from the rear of the cabinet, so setting the 624s close to walls will affect their timbre. The rear panel offers three EQ settings for placing the boxes against walls, on top of a console or freestanding situations. Amplification is provided via a 100W (continuous) amp for the lows and a separate 40W amp for the highs. The crossover is a Mackie modified Linkwitz-Riley – 24dB per octave at 3kHz. The cabinets are relatively small (330mm x 210 x 264) – an ideal sizing when you have five monitors in the one room.

The rear of the HR624 features a similar adjustment regime as the HR824. A three-position switch adjusts low frequency response for differing speaker placement. A low cut filter switches between 49Hz cut for normal operation and an 80Hz cut for THX arrangements (or if used with a sub). A high shelf filter offers ± 2 dB beginning at 10kHz. A pot adjusts input sensitivity. Connection of signal to the 624s can be either balanced XLR, TRS jacks or unbalanced RCA plugs. As with the 824s, the connections exit downward so you can get the speaker right up against a wall if need be, plus it keeps things tidy around the back. Voltage can be switched for 110V or 240V operation and check that it's correct before plugging them in. One of the review models nearly got a double dose of voltage, which could have turned ugly.

Performance is very similar to the HR824 apart from the (obviously) more constrained bass response. The 624s begin to roll off at 49Hz as opposed to the 824's 38Hz. The top end starts its dwindle at 20kHz and drops by 3dB at 22kHz when the 824s have a much steeper roll off of 3dB between 22k and 22.5kHz. Compared to the 624s, a pair of 824s will add an extra 6dB of SPL at one meter. Apart from that, the specs are remarkably close. The same flat and consistent response that made such a splash when the 824s were released. I much prefer the upper frequencies of the smaller 624s and was surprised at my own acceptance of a metal tweeter. Normally I run a mile from anything but soft dome or silk but the 624s offer a precise top end without being overly grainy. This top-end formulation combined with the waveguide does provide a startlingly solid stereo image. Everything, and I mean everything, improves with the addition of the HRS120 sub.

Chief Sub

The HRS120 is a box to be reckoned with. Unfortunately the first reckoning you'll be doing with this sub is moving it. It's very heavy. (At 42.6kg, it's heavier than some people I know.) Now if Mackie are going to print such extensive information on the subject of sub bass placement in the manual, I'd urge them to put some handles on this monster. It's a nightmare to move! Get a strong friend to help when setting up these subs or heed Mackie's advice and use 'a small wheeled cart'. Wire it up on your 'small wheeled cart' and you could drive it around the control room. Tally ho!

Mackie's passive radiator design makes a rather successful appearance in the HRS120. What looks like a 12-inch driver in the front of the box is actually a passive cone or radiator. The 'real' (or should that be active) 12-

inch driver is situated in the bottom of the cabinet facing the floor. Again, the box is filled with acoustically absorbent material to cut down on the internal reflectivity. The cabinet is black woodgrain veneered MDF. There's 25mm MDF for the bottom, 19mm thick sides and a very solid 32mm for the top. Now we're getting an idea as to where that weight comes from. Internal volume of the cabinet is 60.88 litres. That bottom-firing driver travels through 45mm of cone excursion to give a low-end response of 19Hz – frighteningly low for a box of this size. Watch the levels as well. With an SPL of 117dB at one meter, one should exercise some care. Driving the driver is a 400W amplifier utilising negative feedback circuitry. The amp will stretch to 500W peaks before you achieve clipping level.

Input and control of the sub resides around the back. Here, push-buttons engage various filter and gain settings. A 15Hz subsonic filter avoids any ultra low signal. A second filter section engages either a variable filter from 55Hz to 110Hz or a 110Hz brick wall filter for AC3 and DTS formats – the filter may be completely bypassed. An LFE gain button adds the prerequisite 10dB of gain for AC3 encoded material. Overall input sensitivity can be adjusted along with 180° polarity. Information for either a stereo or THX setup is printed clearly on the back. Left and right inputs and outputs are available as either balanced XLR or RCA connections. One could combine this sub with any monitors. Should two or more subs be your cup of tea, slave in/master out I/O allows the daisy-chaining of HRS120s. Two rather useful inclusions are the sub bypass footswitch jack and a remote indicator jack. The bypass will switch the full signal to the satellite monitors and by adding a little 24V light to the sub bypass light jack you can have yourself a 'rude sub light' [Mackie owners in-joke – CH] to let you know when that sub is engaged. Top marks.

Recommendations

The setting up of a sub can take a while. After sliding the HRS120 around the room on a piece of carpet I was more than happy to return it to where I first placed it – in between the 624s in the same plane. The two are a match made in heaven – simply follow the Mackie instructions and you'll be pretty much there.

I'd recommend the HR624s to anyone as a stable and reliable reference and I'd go so far as to say these really could be the new NS10 – brave words, I know. The HRS120 is also a fine cabinet. I'd happily use the sub with any satellite system. Yet again, Mackie have come up with a winner.



Manufacturer Info

- Mackie
- Email: info@mackie.com
- Web: www.mackie.com
- See our distributor directory for local contact details

Price

- HR624: US\$xxx; HRS120: US\$xxx