



AMPS/RECEIVERS



NETWORKED AV RECEIVER

ARCAM FMJ AVR390

Arcam hails from the UK, where it built its reputation on high-quality amplification and also a penchant for bravely investing in technologies that were often only being developed by giant international companies — such as CD mechanisms and Blu-ray players. Today's AV receivers combine many ever-changing technologies with multiple channels of power — so perhaps it's no surprise that Arcam has garnered itself a reputation for these as well.

EQUIPMENT

The company currently has three models of multi-channel receivers — the AVR390, AVR550 and the AVR850. (There is also a processor which can be combined with various power amps, and also a very fine stereo receiver in the SR250.)

Here we look at the entry-level model, the Arcam FMJ AVR390. But it's worth noting that those three AV receivers appear to be identical to each other in every respect excepting only their power outputs. So if you go for the entry-level model you lose absolutely nothing in functionality.

The \$3995 of this model buys you seven times 80W into eight ohms. The top-of-the-line AVR850 is close to \$9000 and comes with seven times 120W into eight ohms. But it uses a very different Class G amplifier technology, and explicitly supports four-ohm loads, delivering an enormous 200W into those. Apparently it is recommended for the AVR390 that eight-ohm impedance loudspeakers be used, though the manual doesn't make a big thing of it, noting it only in one graphic of the rear panel.

The tuner here is firmly modern in offering FM and DAB+, rather than the old FM/AM type. While most of Australia is still a DAB-free zone, those in the capital cities (Hobart soon) can enjoy digital radio's easy tuning and selection by name.

As for audio-visual stuff, it's hard to see anything missing. In addition to the bullet-proof construction (16.7kg!), the Arcam FMJ AVR390 features full support for everything that you might need for a fine movie or music performance.

First off, there's decoding. It does all the usual surround formats including Dolby Atmos and DTS:X. And not half-hearted 5.1.2, but 7.1.4.

Four of those channels are via pre-outs, to which you'll need to add power amps, but it means that you have the choice to go all the way to 11 channels should you so wish.

Second, it is thoroughly up-to-date in video handling, with all but one of its seven HDMI inputs complying with the HDMI 2.0a specification and HDCP 2.2 copy protection. (The one that doesn't supports MHL instead, a 'standard' for sharing from Android phones.)

Its video handling is so up-to-date that it has abandoned analogue video entirely. There are no composite or component video inputs or outputs;



Arcam's MusicLife app can double as a controller for the AVR390, while there's also a smart physical remote control.



it's HDMI all the way. The video is straight through as well, with almost no processing other than the overlaying of some on-screen messages. The exception are 1080p signals, which the receiver can upscale to Ultra HD, although we generally advise leaving this to your UHD display.

The receiver offers support for music delivered via the USB socket at the rear, and also network audio via its Ethernet socket. In addition to streaming local network audio, the receiver supports Spotify Connect and vTuner Internet radio. There's a control app (Arcam MusicLife) for iOS, but not for Android. Of course, the receiver also comes with an IR remote control.

PERFORMANCE

Some high fidelity brands kind of insist that you accompany their electronics with loudspeakers and even a listening room which offer performances as even as that provided by the electronics. But such combinations are vanishingly rare, so it's good to see that Arcam has incorporated a room and speaker calibration system.

And it's great to see the system that Arcam has chosen. This is the Dirac audio calibration system. Among the places you'll see this at work is in the factory audio systems for Bentley and Rolls Royce cars. So posh stuff.

The set-up phase is pretty processor-intensive, so it actually requires the use of a computer, Windows or Mac, to conduct the measurements and perform the calculations to generate the adjustments to be loaded into the receiver's DSPs. Once that's done the computer is no longer required. In addition to the computer you'll need a network connection for the receiver (that's how the settings are loaded in) and a download of the

Arcam's auto-calibration system is Dirac, which requires a PC/Mac to run, but offers unusual versatility. The two traces show how the original response (blue) is improved (green) for a closer match to the guide curve (orange).

software from Arcam's website. The receiver is supplied with the calibration microphone and a tiny USB ADC/microphone pre-amp to use with the calibration microphone and your computer.

Unlike the auto-calibration systems on many receivers, the Dirac system does not try to set the 'sizes' of your loudspeakers. This may seem like a weakness, but we reckon it's a strength. At least nine out of ten autocalibration systems get at least some of the 'sizes' wrong! This way, you'll ensure they're right.

The Dirac system is not very pretty on your computer (see screens above), but the software is laid out in a reasonably logical manner. The main trick is to realise that you set 'target' frequency response curves for each speaker pair and the system works out corrections to make the output match those curves. All that is done pretty visually.

One reason we especially liked this approach, despite the increased complexity, was that we knew precisely what the system was doing, what was being adjusted. Was the subwoofer also being tuned? With most systems the answer is... we're not sure. With this system, the answer is 'yes', if you want it to be. And you should. Bass is, more than other frequencies, altered by room effects. But a little caution is warranted. It isn't a good idea to try to correct for the basic incapacabilities of a subwoofer. If it is designed to roll off below 30Hz, let it. Trying to lift 20Hz to the same output level will result in greater distortion and even possible damage to the subwoofer.

We kinda ignored the eight-ohm loudspeaker recommendation for a while, and did a big chunk of our listening with a pair of four-ohm, relatively low-sensitivity loudspeakers, just using this receiver as a straight analogue stereo amplifier.



There are few differences between the inputs and facilities on different levels of Arcam's AV receivers; they are differentiated mainly by power level and type.



But we ran the receiver primarily as a 5.1.4 unit, using a stereo power amplifier for the additional two ceiling speakers.

Over a period of a couple of weeks we watched a wide range of TV shows and movies, primarily streamed from Netflix or played from Blu-ray or Ultra HD Blu-ray. The receiver ran with perfect solidity, doing its job of delivering music, effects and voices with impeccable accuracy. It turns out that 80W a channel from Arcam can whip just about any loudspeaker into shape and make it a slave to the receiver's desires. We generally use a receiver rated at closer to 150W, and if there was any difference in levels, control or sound-field accuracy, we'd be inclined to say that the Arcam AVR390 was the preferred unit.

The surround included Atmos and Dolby Surround, both making use of our ceiling speakers. The Dolby Surround decoder in the receiver delivered some startling results even from two channels. The British show *Misfits* is available from Netflix in two channels only but is clearly encoded with surround, which was faithfully extracted and delivered in an impressive three dimensions by the AVR390.

As for stereo, we're talking a truly audiophile result with this receiver. Again, that control of the loudspeakers was simply first-class. We mostly streamed sound directly to the receiver from our network resources.

We must note that this was a little disappointing, in that high resolution audio was not supported. It topped out at 16-bit/48kHz. The receiver supports MP3, WMA (lossily compressed), WAV and AAC in addition to FLAC. None of our 24-bit 96kHz FLAC files would play, let alone even higher resolution stuff. Which was a pity because our CD-quality material sounded so good. As we approached the keyboard for this bout of writing, we'd just finished listening to Pat Metheny & Lyle Mays album 'As Falls Wichita, So Falls Wichita Falls', and we'd defy anyone to find a stereo amplifier that could do a better job on delivering every nuance available within the digital signal, along with a nigh-on perfect soundstage.

CONCLUSION

The Arcam AVR390 is a fine home theatre receiver with superb performance right out of the box, and with an ability to be upgraded in the power amplifier department, not just with the addition of amps for the four other channels, but in all channels if you wish, thanks to the pre-outs for everything. We doubt that you'll need to be upgrading for a long while, though. ■

Arcam FMJ AVR390 AV receiver

- Excellent with movies
- Excellent with music
- DAB+ tuner

- Should use only 8-ohm speakers
- No AM radio
- High-res network media not supported

Price: \$3995

Power: 7 x 80W (8 ohms, 20-20,000kHz, 0.02% THD, two channels driven); 7 x 60W (8 ohms, 1kHz, 0.2% THD, seven channels driven)

Inputs: 7 x HDMI, 7 x analogue stereo (1 x 3.5mm on front panel), 2 x optical digital, 4 x coaxial digital, 1 x USB, 1 x Ethernet

Outputs: 2 x HDMI, 1 x 11.2, 7 pairs speaker binding posts, 1 x 3.5mm headphone

Zone: 1 x HDMI, 1 x analogue stereo, assignable power amplifiers

Other: 1.2V DC supply, RS-232C, 2 x Trigger out, 2 x IR in

Dimensions (w/h/d): 433 x 171 x 425mm

Weight: 15.7kg

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