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Meyer Sound ULTRA-X40 Wide Coverage Loudspeaker

By: Mark Johnson

In 1980, when Meyer Sound introduced the UPA-1, I don't think anybody involved imagined that it would become an iconic (and often copied) loudspeaker. It introduced the concept of arrayability with the now-ubiquitous trapezoidal cabinet, along with other innovations that are commonplace nowadays.

I had an opportunity, early in my career and early the product's evolution, to mix a show using UPAs, and they left an indelible mark in my mind's ear. I was a freelance audio engineer out of Nashville and was mixing a bluegrass group at a corporate event at Masonic Auditorium in San Francisco. Arriving at the venue, I saw a smallish cluster of speakers flown above the stage. I could not identify the brand or model, so I asked the system provider what it was. He said it was a Meyer Sound UPA, designed and built across the bay in Berkeley, California. I was concerned that the system would be too small to adequately cover the room but was obliged to use what had been provided. My concerns were unfounded and when I returned to Nashville, I told my colleagues about this great-sounding, powerful little PA speaker. I hadn't written the make and model down, however, and I forgot the name. Since this was the early '80s there was no Google to search, so I would regularly look through industry publications in search of ads or case studies that referenced it.

I finally saw an ad and notified my colleagues. I contacted the company and requested a demo system. Their closest dealer at the time was in Austin, Texas, so it was arranged and four UPA-1s and two USW subs were



Front and rear of ULTRA-X40.



User panel.

shipped to us in Nashville. We wound up purchasing the demo system.

New kid in town

Those products, along with the UM-1 stage monitor, made up the Ultra Series. Over time, there were incremental updates and improvements; among other things, the units became self-powered in the 1990s. The UPA remained in Meyer's product lineup until recently, when its successor hit the marketplace.

The public spoke and Meyer listened. While the UPA was right in so many ways, time marches on and there were improvements and updates of which to take advantage. Loudspeaker technology and design has advanced, so new levels of performance become more easily achievable.

The ULTRA-X40, introduced early in 2019, represents a collaborative effort over a ten-year-plus period. Conversations were held with customers who had used the UPA in its various incarnations, noting its strengths as well as areas in need of improvement. The discussions provided guideposts for the new product. Key points included a desire for a more lightweight product, greater rigging versatility, and the ability to rotate the high-frequency section. Acoustically, the wish list included extended frequency response (both low end and high end), lower distortion, a more linear phase and frequency response, and more peak output.

In the design and construction of the Ultra-X40, Meyer was able to leverage technology developed and refined from other products, including LINA and LEOPARD. The company drew on its collective experience and incorporated innovations in drivers, amplification, DSP, and horn design, as well as directional control that extends below the crossover range.

The Ultra-X40 is named as an acknowledgement of the 40th anniversary of Meyer Sound (the product was introduced in 1979, the company was



Lower handle and AC input.



ULTRA-X40 rear. (Note handles at top and bottom and the water drainage slots back-mid of the cabinet, on either side of the amplifier.)



Front grille removed and rotatable horn exposed.

founded in 1979), and it is part of the Ultra series of loudspeakers.

The Ultra-X is available in two versions; the wide coverage version is the Ultra-X40, with a 110° x 50° coverage Constant-Q horn, which has the ability to rotate; the controlled-coverage version with a 70° x 50° Constant-Q horn is the Ultra-X42. The speaker we'll be looking at is the Ultra-X40.

The original UPA-1A (which did not have an integrated amplifier) weighed 66lb. The self-powered UPA-1P

weighed 77lb. The Ultra-X40 weighs in at 52lb. That's significant, considering that the new product also incorporates its own three-channel amplifier (Class D, 1,950W peak power). The Ultra-X40 features a maximum sustained current draw of just 1.3A. All this is contained in a relatively compact form factor that is just 12.5" x 22" x 14" and less than 55lb—20lb lighter than its predecessor, the UPA-1P, and 11lb lighter than the UPA-1A.

The Ultra-X40 specs out with an

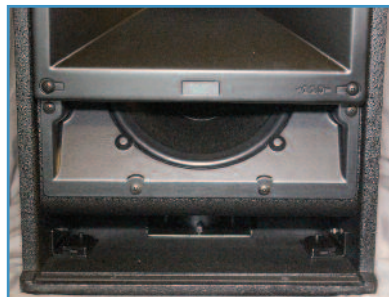


Top rigging points.

operating frequency range of 55Hz — 19.5kHz. Linear peak SPL is 132.5dB with an 18dB crest factor, measured using Meyer’s M-Noise (130dB with pink noise).

The driver complement comprises two 8" cone drivers in a concentric configuration with one 3" diaphragm compression driver. Meyer states the concentric configuration has more advantages than a coaxial configuration. For example, concentric driver configuration helps to reduce distortion both on the high-frequency and low-frequency drivers. Typical coaxial designs tend to exhibit distortion on the high-frequency driver, since the throat of the horn (inside the low-frequency driver) cannot be optimized completely. If the coaxial driver does not use a horn, then there are Doppler effects due to the cone moving and modulating the highfrequency. If the coaxial driver does have a horn, then the horn design is compromised between its optimal design and what can fit inside the low-frequency driver diameter. Additionally, in a coaxial configuration the heat generated from the low-frequency and high-frequency drivers is common and increases power compression. In the concentric driver configuration, there is no thermal interaction between any of the drivers, since they are not touching each other.

The user panel module is fitted with a three-pin XLR connector with a looping output. Optionally, you can get the speaker outfitted with a five-pin XLR that also carries RMS (Meyer’s remote monitoring system). A pair of RMS connectors resides at the bottom right of the I/O panel. A recessed remote



Horn orientation and indication for 110° horizontal coverage.

mute disable/enable toggle switch is located just to the left of the RMS ports. Also featured is the “identify” button and “wink” LED, to help discover and identify the loudspeaker on an RMS network. In order to enable RMS functionality, Meyer’s Compass RMS software is required. LEDs are used for “on/status” and limiting indications. There are two “limit” indicators, one each for the high-frequency and low-frequency amplifiers.

The system uses a powerCON 20 connector for power to the amplifier, with a looping output. The Ultra-X40 features Meyer’s IntelligentAC automatic voltage selection and will accept any voltage within the range of 90—265VAC, 50Hz—60Hz.

The system is efficient and the current draw at idle is 0.27A ms, the maximum long-term continuous current draw (greater than 10 seconds) is 1.9A ms, and the burst current (less than one second) is 3.1A ms. The maximum instantaneous peak current is 6.9A ms. The inrush current is less than 20A peak. Up to seven Ultra-X40s can be run on a 15A 115VAC circuit, and up to 10 can be used on a 20A circuit.

The enclosure is manufactured of multiple-ply birch wood and is finished with black textured paint. The front grille is made of perforated steel and



Horn orientation and indication for 50° vertical coverage.



Low-frequency and high-frequency concentric driver configuration.

powder-coated black. Custom color finishes are available as well. Four screws (two top, two bottom) hold the front grille in place to facilitate easy access for rotating the horn. Another

four screws hold the horn. The screws can be removed, and the horn rotated clockwise to change the coverage to 110° vertical and 50° horizontal. About midway on the side and back of the cabinet are two “slots” that help facilitate water drainage in wet weather, when using the weatherproof version of the speakers are oriented horizontally.



Pole mounted for event sound system.

Usability

The ability to use the gear in a variety of applications, environments, and situations is one of the key elements in the design criteria of professional audio products and the Ultra-X40 is designed to cover many production bases such as fills or delay speakers, portable PA, theatre sound, nightclubs, and houses of worship. The cabinet is fitted with 11 integrated M8 threaded points, and a 35mm pole mount (with

an M20 thread). There are also additional optional rigging accessories, including a 35mm pole; a U-bracket; a yoke; a pinnable link on a channel, which provides the ability to hang multiple units from a single point; and plates that allow for configuring the Ultra-X40 (or 42) into horizontal or vertical clusters. All the accessories provide myriad options for rigging or mounting the loudspeaker. As previously mentioned, for outdoor applications, the Ultra-X40 can be ordered with weather protection.

The things I noticed right away...

When I initially took delivery of two Ultra-X40s, I set them up in my house for low- to medium-level listening. I was impressed right away with the extended high-frequency response of the system. With advancements in technology, design, and engineering, the lines are blurring on loudspeakers used for sound reinforcement or critical listening applications such as recording.

In the UPA, handles were inserted into cutouts on the sides. For the Ultra-X40, Meyer cleverly adds cast metal handles (similar to amplifier rack handles) directly above and below the amplifier module at the rear of the speaker. This works well for both an individual carrying the speaker or if two people each grab a handle to transport the speaker. I don't know if it was intentional, but the bottom handle can also serve as a guide for cable management.

The best laid plans...

Several people at my day job were interested in listening to the Ultra-X40 system and we had an upcoming event for which they might be useful. I took the speakers to work and we set them up. Meanwhile, I was encouraged to use them in conjunction with the 750-LFC subwoofer. As luck would have it, two were available for demo locally. We configured the system (the hydraulic poles were very cool) and

determined that the Ultra-X40s would be useful for outfill, covering a fairly large lawn area as part of a larger system for an outdoor event we were doing. Did I mention that I'm located in Central Florida? The Sunshine State? Setup day went fine, rehearsal day went fine, and, on performance day, it rained, pretty much all day, and ultimately the event was cancelled. I was not at the show site until performance day; alas, I never did get to hear the speakers in that application.

The next opportunity was indoors, in a church fellowship hall. This time, the Ultra-X40s would be the main system, one per side, supporting three singer-songwriters with acoustic guitars for an audience of about 250 people.

During this performance, of course, the test signal consisted of voices (one female, and two males) and the three acoustic guitars. The Ultra-X40s handled the voices with ease, from a sound-quality standpoint: Nothing stood out, and nothing was lacking; it was very neutral-sounding. The sound was smooth, powerful, and full-bodied. (I know it sounds like I'm describing a glass of wine or a cup of coffee.) The speakers were responsive to EQ.

The coverage was cool. During the performance, I wandered the length and breadth of the room. The wide, even coverage was very impressive. Also, the consistency, from the front of the room to the back, was notable, in a good way.

List price for the Ultra-X40 is \$5,600. Check Meyer Sound's website for the list of available rigging and mounting options.

If you are looking for a high-quality loudspeaker system that can be used in multiple ways, look no further. The UPA has run its course. Long live the Ultra-X40. 📶