

Just 10 years ago, mastering studios still received clients' mixes on DAT media. Now, most mixes are delivered electronically as 24/96 files, having been "born HD" – recorded and mixed at high resolution. Artists and labels are finding ways to share high res music with fans.

HIGH RES AUDIO'S FUTURE LIES OUTSIDE THE (JEWEL) BOX

Producers and engineers appreciate the benefit of 24/96, 24/192 and DSD resolution. Sadly, Super Audio CD and DVD-Audio failed to reach critical mass, and only the pros were able to hear the best version of the recordings. Today, Blu-ray holds promise as a high capacity high resolution storage and playback medium, appropriate to large volumes of content but not as a mainstream retail format for music because of the same constraints that affected SACD and DVD-A.

Fortunately, we can look beyond the super jewel box to an old medium — vinyl — and two new ones — high res downloads and USB drives — to deliver to the music lover the same great audio producers and engineers hear.

VINYL IN THE 21ST CENTURY

We've seen it at our local venue: the merch table holds CDs, T-shirts and vinyl discs — and the vinyl is creating the interest and the sales. The fan's thinking: I can download the CD (or buy it used at Amazon) anytime; the vinyl — often an EP or alternate LP program — is perceived as the scarce and valuable item. Whether as playback medium or collectible, fans are supporting their artists' vinyl releases, without a retail intermediary online or at brick & mortar.

Airshow's engineers team with vinyl experts to provide a seamless post-production and cutting process for your vinyl release. Working from your high resolution digital or analog mixes, your mastering engineer can facilitate a vinyl release, either in conjunction with your CD mastering or in a separate session with a song sequence appropriate for vinyl's A side/B side format. Your engineer may recommend modifying the EQ and dynamic processing of the songs to be released on vinyl.

The engineer prepares a separate high resolution archive, and from that, the master for cutting. The high resolution archive can later be used for other high resolution iterations (a license for film or TV, for example, or a high resolution download).

Airshow works with a select group of cutting engineers and pressing plants, known for the quality of their work and fair pricing. Once the master file is sent to the cutting engineer, the mastering engineer adds value by auditioning and exercising quality control of the vinyl refs and test-pressed LPs .

Recommended Vinyl Side Length

Disc Size	7"	7"	10"	10"	12"
Playback Speed	45 rpm	33 rpm	45 rpm	33 rpm	33 rpm
Side Length	4:30 min	7 min	9 min	11 min	19 min

Adding a vinyl release can have modest impact on the project budget, but it may add time to the entire post-production and manufacturing process. In Airshow's recent experience, once the client has approved our high res master, it may take as few as four days to receive the cutting engineer's vinyl ref and, following approval of the vinyl ref and submission of the lacquer master to the plant, up to two weeks to receive the plant's test pressing for approval. The manufacturing process, once artwork has been supplied to the plant, can take from four to eight weeks.

HIGH RESOLUTION DOWNLOAD AND USB DELIVERY FOR PREMIUM LISTENING WITHOUT AUTHORIZING

Thanks to the penetration of home theater systems and broadband, a staggering percentage of American homes are now capable of experiencing high resolution and multichannel music. A simple USB connection or broadband delivers high resolution music files directly to the home computer or

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the media server already in the home theater signal chain. While some consumers invest from \$1000 to \$7000 or more in proprietary media servers or software (Olive, Sooloos, Qsonix, Amarra and Squeezebox among others), others opt for a dedicated computer and iTunes for playback of digital files through their stereos or home theaters.

USB

Artists use USB drives to add a high res physical product to their merch table or online store options. USB drives used this way carry artwork, weblinks, and often multiple versions of the music: as a compressed MP3, 16/44 for burning to CD and 24/96 or 24/192 for playback through the fan's media server. There is no authoring or menu design associated with USB drives, saving a step in the assembly process. Artists can order as few as dozens of drives up to thousands; they can be pre-loaded at the plant with the files, or delivered empty to be loaded on demand with updated content. Airshow's suppliers can turn around pre-loaded custom-printed USB drives in a matter of days.

Digital File Size for 1 Hour of Stereo Audio

320K MP3	150 MB
16/44 .wav for CD	635 MB
24/96 .wav HD	2.1 GB

USB drives are sold in a range of sizes; 1 GB, 2 GB, 4 GB, 8 GB and 16 GB are the most common.

HD DOWNLOAD RETAILERS

Music lovers find their high res (HD) downloadable files at specialty online retailers including iTrax and HD Tracks, and even directly from artists. As one would expect, the HD download stores are heavily stocked with audiophiles' favorite genres and independent label products. The stores work with labels

and content aggregators to identify music releases that are analog or "born HD" —that is, not upsampled from 16/44 — for their savvy customers, who pay a 50% to 150% premium over Amazon MP3 prices for their music in high res.

Airshow prepares a 24/96 master for your HD downloads, and working with our sister company Festivalink, delivers selected independent artist content to the online stores for their discerning customer base. Festivalink completes the "digital packaging," encoding the metadata and bundling the album artwork with the music files, and delivers them to the HD download stores. As an HD aggregator, Festivalink also handles financial settlements with the stores on behalf of the artist.

DIRECT TO FAN SALES OF HD DOWNLOADS

Independent musicians have myriad channels for selling compressed downloads, from iTunes to CD Baby. For artists who want to sell high resolution files direct to their fans, there is (at this writing) one choice: Bandcamp is an indie artist-oriented store; its platform offers files at the customer's choice of mp3, AAC and 24/96 FLAC among many options.

The 24/96 master created by Airshow can be used by the artist to deliver music to Bandcamp's DIY platform.

With most music releases "born HD" and a complete high res workflow from recording through mastering, very little effort is required to embrace high res retail opportunities. We used to call making a high res master archive a way to "future proof" a recording; with the range of affordable HD retail options, the future is here.

Please let your Airshow studio manager or mastering engineer know you want to add high res options to your release. We'll factor your requirements into our workflow and schedule, so you have the benefits of Airshow's premium services.

AIRSHOW, INC.
TOLL-FREE IN BOULDER:
888.545.9035
TOLL-FREE IN TAKOMA PARK
877.460.0763
studio@airshowmastering.com