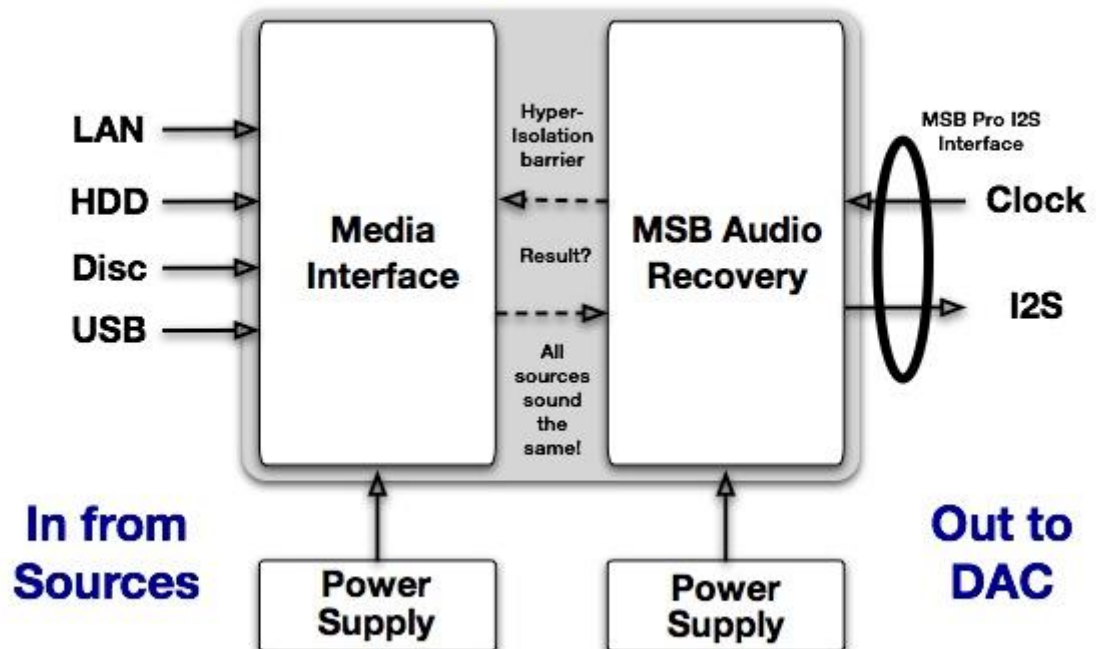


Universal Media Transport *PLUS*



UMT shown in Matte Black with optional EURO heatsinks and Dual Signature Transport Power Base.

MSB UMT plus Architecture



MSB Technology Leadership

MSB has lead the industry for years with the perfection of new playback technologies. We produced the first high-end CD player using Ladder DAC technology in the 1980s. Then the first AC3 player and first THX approved laser disc player in the 90s. Our XPORT upgrade finally gave access to SACD and high resolution music on discs and our groundbreaking iLink digital iPod system was introduced in 2007. Then in 2010 the MSB Universal Media Transport became the first truly universal player that outputted all formats in their native resolution including SACD! It sends perfected, jitter-free digital audio data from its solid state memory to any Digital-to-Analog Converter (DAC). And now we have the UMT *plus*. Plus separate external power supplies for audio and video. *Plus* internal clock header for low jitter playback with other DACs. *Plus* the MSB I2S interface that allows the UMT plus to operate as a slave to the low jitter clock within the MSB DAC. *Plus* the most most advanced clock management technology allowing clocks to be input or output. *Plus* multichannel decoding of all formats. *Plus* Low latency operation in all modes for movie mode. Wow!

How we did it!

We started out by looking for the very best disc reading technology available. There is just no competition to the core technology of the OPPO BDP-103. This amazing player is loaded with features and plays a mind boggling range of media.

The Drive - Lets start with the drive. MSB makes use of the OPPO Blu Ray drive without modification. Drives are mechanical and will fail in time. Using a stock OPPO drive makes replacement quick, easy and inexpensive. This assures that this keystone of your system will not be put out of commission for lack of a replacement drive.

The Video - Video has become synonymous with formats, decoding, and security. Even for a 2 channel audio system, video is required to browse music files and select formats. Video is constantly changing and so we wanted a way to keep our video up to date. Again there was a major advantage to using the superb OPPO video processing without modification. Firmware updates are released often and can be instantly installed because we have made no superficial modifications to customize the OPPO process (like replacing the OPPO logo with an MSB logo on the OSD). With stock OPPO firmware you have all the

advantages of the latest updates and OPPOs customer support. So we took the OPPO video processing and perfectly integrated it with our long proven audio technology and low noise power supply to create the ultimate transport.

The Audio - At this point we leave the OPPO behind and the transport becomes all MSB. We start out by processing the raw audio and storing it in memory. Some formats such as SACD require very processor intensive decimation, which is accomplished with proprietary MSB software with stellar results. Others just need to be read bit-perfect, without resampling or watermarking. The stored musical information is then played back via two paths. First, it is output on the S/PDIF digital outputs. As PCM is limited to 24 bits, formats over 24 bits are processed and the best quality 24 bit signal is provided. These PCM outputs can be attached to any DAC. Four digital outputs are provided in every possible connector type. Alternatively, full resolution jitter-free outputs are provided via the MSB Pro I2S format, the proprietary MSB connection method between all our products. This output can be connected to any MSB DAC with perfect timing, no noisy ground connection and extremely low jitter. Just as with our iLink transport technology, there is no connection between the input and the output of the transport. Unlike a traditional CD transport, you are never listening directly to the data from the optical disc. Instead the data is pulled from the media source, stored, rebuilt and clocked back out using a highly stable clock.



The Clock and Jitter - When it comes to audio quality, its all about jitter, jitter and jitter. It is the key to good sound. The biggest PLUS in the UMT*plus* is our advanced approach to clock jitter. There are two cases in which the UMT can be used, with an MSB DAC or with any other DAC. With the MSB DAC we use the MSB I2S interface. This advanced connection provides extremely high speed, high resolution digital data transfer with NO ground connection, and send a very

low jitter clock from the MSB DAC to the UMT, keeping the UMT in sync with the DAC. This dramatically reduces noise and jitter in the DAC because the DAC and transport are running on the same clock rather than two similar but slightly different clocks. The other case is where a non-MSB DAC is used. Here the transport output stream is the DAC clock. Most DACs recover their clock from the input data stream. So to provide the lowest possible jitter output we have made provision to install any of the MSB super low-jitter clocks, like the Femto 140 or the Galaxy Femtosecond Clock. With the addition of one of these clocks, the MSB USB *plus* becomes the lowest jitter transport in the world. And to help keep that quality in the DAC, we offer a 512 clock output that can be attached to DACs with an external master clock input.

DSD

Direct Stream Digital

DSD Playback - The UMT*plus* offers you the highest possible quality SACD playback. When an SACD is played, native DSD will be output on the digital outputs. This DSD stream can be connected to a DSD ready DAC like any MSB DAC or can be saved on your computer to add to your playlist. If you do not have a DSD ready DAC, a menu change will allow SACD to be output as PCM.

The Power Supply - The Universal Media Transport uses an external DC power supply. That keeps all the ugly byproducts of AC power and its conversion away from the important clocks and timing of the audio transport. The DC is again filtered and regulated within the transport providing ultra-clean power for each part of the circuits. But that is not all. We have actually separated the UMT *plus* into two parts. Each is provided with an external power supply. The main power connector powers the drive and video circuits. The secondary power supply runs the clock and audio processing circuits. The second power supply is optional. If no power supply is connected to it, the main connection is bridged to power the whole unit. But as soon as you plug in the second supply, the two parts are disconnected and the audio output is now truly isolated from the video.



The Package - As usual with MSB products, it is simple to use, without unnecessarily fancy menus and gimmicky features and provides solid accurate playback in a great looking package. The Platinum Family design is simple and elegant. It has much needed integral heat sinks - video processing is a hot business. It also utilizes our amazing **MSB Isorack Damping Feet** which provide fantastic mechanical damping and vibration control.

The Results

The results are remarkable. Based on comparisons with any standard technology SACD, high res music or computer based system, the Universal Media Transport *plus* produces remarkably better sound quality for any listener on any system. This transport unlocks all the musical magic stored on your media sources and hidden from you up until now.

In short, the MSB Universal Media Transport *plus* is a unique integration of the best of the best. Its most exciting feature is the ability to read such an amazing range of media sources, without the use of a computer. Not just common formats, but a whole range of formats, ALL output digitally at FULL resolution! NO other transport in the world does this!

Here are all the media types you can play!



USB Memory Stick

Music files in almost any format can be played bit-perfect directly from a USB memory device.



External HDD

Music files up to 192 kHz in almost any format can be played bit-perfect directly from an external hard drive.



Network Streamer

Music files up to 192 kHz in almost any format can be played bit-perfect directly from any computer on your network. This is an amazing way to access music bit-perfect without having to worry about operating systems, applications or system settings.



All kinds of discs

SACD, DVD Audio, CD, Data Files on DVD or Blu-ray. All will play on this universal player. Two channel or multi-channel discs will play. Dolby Digital HD and DTS HD Music discs will play as well as all the movie formats.

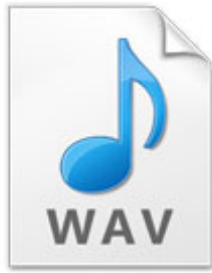
About Multi-channel and Play Modes

This transport is an 8 channel player. Our most intensive processing and highest quality sound is presented on the front two channels but all 8 channels are available on the digital outputs at incredible resolution, both on RCA connectors and by the MSB ProI2S including multichannel SACD or multichannel streamed sources such as multichannel DSD. Control over the number of channels output is a menu setting.

There are no lip sync issues with the *Plus*. In all cases the UMT is in sync with the DAC or digital outputs so latency is very low, without compromising sound quality. A menu adjustment allows variations in displays to be accommodated. For those users with a home theater system sharing the same room with their audio system, standard digital surround sound outputs are also provided. There are a number of very effective ways to integrate this product and the DAC IV family into high-end home theater systems. Have you heard multichannel DSD downloads yet? Wow!

Just what kind of media can be played?





Network Streaming - Goodbye Server

The problem with using a computer to play music can be summed up with the word software. Almost every application and many parts of the operating system have made it their business to get involved with deciding how audio files will be played. They adjust levels, give you a soft start and stop, do some equalization and particularly like to resample the audio to another sample rate.

No matter how much care is made in setting up the computer, software upgrades and new applications being installed will change it and you will have to go through the whole learning curve again.

We at MSB have seen many "high-end" music serving systems put together by customers and dealers alike, and literally 100% of those systems were not bit-perfect, and were not doing what the user thought they were doing.

The solution to this thorny problem is Network Streaming. For those who have not run across products like the Logitech Squeezebox, this class of product is a physical music player, that rather than storing any music onboard, finds music files on other computers and plays them. And plays them the way the streamer is set up to play them regardless of how the host computer is set up.

You can see the advantages immediately.

- You will never outgrow the storage space of the streamer. More computers and more drives can be added anytime.
- The quality of the music played is not dependent in any way on the quality of the source computer.
- Computers can be added to your network and removed anytime without effecting your ability to listen.
- Music can be stored on Apple and PC computers without issue.
- All music will be played bit-perfect every time. Thats the big one.
- You do not have to have a computer in your listening room. In fact your music can be stored on many computers anywhere you happen to have computers.
- Nothing related to computers is easy to set up, but a streamer is much easier to set up than a music server.

For you technical users, here are the details. As a digital media player (DMP): the player can actively search, access and pull content from local media servers which is functionally equivalent to DLNA or SMB/CIFS (a network file sharing protocol) client. As a digital media renderer (DMR): the player plays content received ('pushed') from a digital media controller (DMC). A DMC-capable media server is required. As a SMB/CIFS client: the player can directly access files shared through SMB/CIFS clients over the network, as if accessing an external USB hard drive. Most computers, especially those installed with Windows, already have an SMB client embedded. USB drives can be formatted with the FAT (File Allocation Table), FAT32 or NTFS (New Technology File System) file system.

About the Outputs

This transport has been designed for optimum performance using the MSB PRO I2S connection to any MSB DAC. The 32 bit MSB PRO I2S interface is the best to use with an MSB DAC as high-resolution sources such as SACD will take advantage of the full 32 bit capability of the network.

The S/PDIF digital outputs are also optimized for use with other DACs. They are directly driven from the internal femtosecond clock for the lowest possible jitter.

About the Clock Link

This transport has a 512 x clock link. It can be attached to an external clock. Our advanced clock management will use this clock when the frequency is correct for the media being played or will revert to the internal clock when they are incompatible. For example if external clock is supplied for CD playback, it will use that clock but when a DVD is played the internal clock will be used with no switching. In the same way, the internal clock is output on the clock link and can be used to sync your DAC with the low jitter clock in the UMT. All this is done via the MSB I2S connection when MSB DACs are used.



About the OPPO



There is no point in reinventing the wheel. The design team at OPPO did an amazing job bringing a truly universal player to market with remarkable video. The BDP-103 incorporates Marvell's Kyoto-G2H video processor with the latest generation Qdeo technology. We left this part of the technology alone, so as OPPO releases firmware upgrades, you will be able to take advantage of them

immediately. So we use the OPPO drive and video processing board modified only with cleaner power, better vibration control and better thermal management. We provided a new power supply and of course provide all the audio processing.

About the Power Bases

The Universal Media Transport *plus* can operate with either one or two outboard 12V power supplies. The minimum power supply required to operate the Transport is a single desktop supply (below). The required supply is also included in any of the DAC IV Power Bases allowing the transport and DAC to be powered by the same base.



For improved performance, the transport can be ordered with an range of upgraded power supplies. The MSB Signature and Diamond Transport Power Bases are dedicated high power linear supplies with a single output. The Diamond has twice the power output as the Signature as well as extensive shielding. Another option specifically designed for the UMT *plus* is the Dual Signature Transport Power Base. It offers two isolated outputs of the same power as the Signature Transport Power Base. This is a great solution, especially if the UMT *plus* is attached to a video system, as significant isolation can be achieved by separating the supplies for the video and audio outputs.



The Dual Signature Power Base shown here provides completely isolated power to the audio and video side of the UMT *plus*. You can expect to see an improvement in the audio and video.

Signature Model

The Single Universal Media Transport is an upgraded model with a number of small improvements. The big change is a solid milled aluminum drawer. This drawer is solid and reliable and compliments the super performance of this transport.

