



**WEISS**

SWISS MADE

## One & Only most advanced Music Archive Network Player "WEISS MAN301DSD" [Revised Jan. 10, 2014] Teruhisa Onda(Audio Writer)



MAN301DSD, most advanced and versatile network player, brought many reviews and reports in various media. But I think some most unique characteristics are not fully explained so far. In this article, I will extend overall explanation about characteristics of MAN301DSD.

### One & Only Unique characteristics of MAN301DSD

Comprehensive Operation with iPad, dedicated for music playback. All operation is controlled via iPad, data processing i.e. ripping is silently implemented in MAN301DSD base station. From the viewpoint of computer operation, it works lightly in command line interface or character user Interface without display and input method like Keyboard or mouse.

Of course it is PC based, but it is very sophisticated and has good taste.

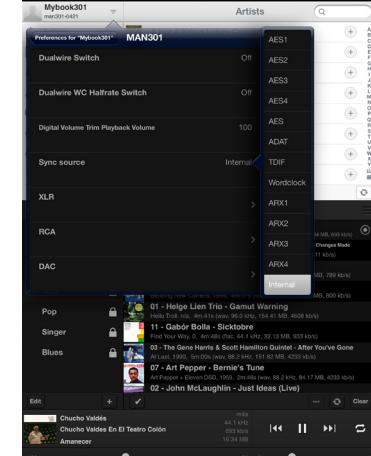
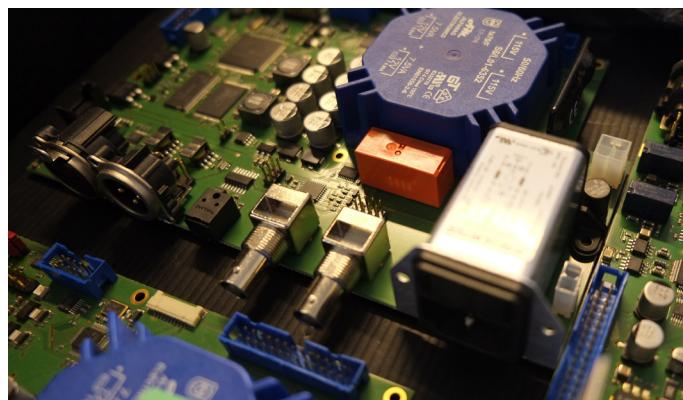
All hardware device and Input/Output boards in MAN301DSD is controlled by Linux PC with audio grade clock. In most case PC is used as DSP for audio use, but in MAN301DSD all inner parts (internal DAC, CD drive, SSD, I/O of LAN/USB/Firewire etc.) work under the control of Linux PC. That is, all timings of device implementation and data flow are controlled by audio grade computer.

### MAN301 iPAD Application.



### Linux PC and other all parts work with Audio Grade Clock.

All digital device works synchronizing with timing information i.e. clock signal. In computer, low quality clock oscillators are used, for example CPU works very fast with jagged waveform clock like saw. In MAN301DSD audio grade clock oscillator and DSP chip are mounted on Linux PC mother board, and whole PC and other all parts works with this audio grade clock. Shortly synchronization to outboard clock generator will be added by update. Then whole PC and other all parts will work in atomic clock grade. Of course, CD playback or ripping etc. will be implemented in atomic clock grade!



### MAN301 Sync source\*

\*This is a preview, which is planned on coming software updates. The powerful MAN301 is a platform that based on software development. Hardware wordclock (WLK) I/O are included.

Weiss believes internal clock is THE BEST, and WLK output provides master sync from MAN301 internal DAC to other sources.

### Versatile Playback means and Music Source

MAN301DSD can playback every audio media except SACD/DVD audio disc. As music source you can use NAS, better sounding USB HDD or Firewire HDD, USB Flash memory. For output you can use external USB/Firewire output for audio interfaces or S/PDIF & AES/EBU digital output for external DACs.



CD drive is very silently controlled with original Linux PC algorithm in audio grade. When it playbacks Music CD, it works ~4x speed very silently controlled by audio grade Linux PC. This is the most distinguished CD drive in the market. When it rips Music CD, of course CD drive speed is controlled by audio grade Linux PC.

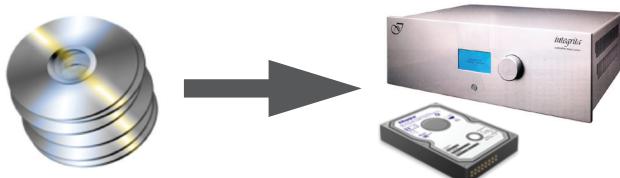


WEISS CUSTOM DIGITAL CONSOLE FOR SONY MUSIC



#### **WEISS BW102 MASTERING SYSTEM**

**High sound quality ripping engine and powerful metadata editor for various kinds of music data file system**

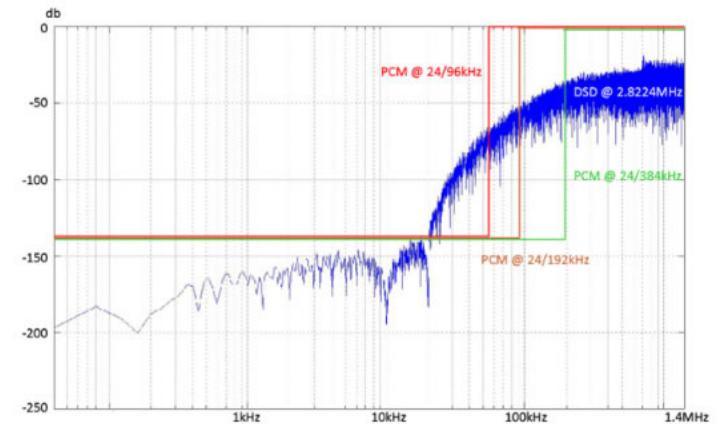


CD paranoia, famous Linux application for high sound quality, is used for CD ripping and it works in Linux PC with audio grade clock. In MAN301DSD CD paranoia ripping engine and original metadata editing application enable almost automatic operation with comprehensive previous setting.

DSD playback filtering to vast amount out-band noise is implemented in digital domain without influence upon audio data. In general, filtering to out-band noise is implemented in analog domain. But in MAN301 DSD it is implemented in digital domain with ultra high precision DSPs.

# Saracon

Daniel Weiss is famous as pioneer for file conversion software. Know-hows of professional file conversion software WEISS "Saracon" and plenty experiences in professional audio is entirely poured into MAN301 DSD playback system.



Fully customized Linux/Ubuntu 64bit OS dedicated for Music Listening  
MAN301DSD base station Operating System is based on Linux/Ubuntu 64bit, but fully and drastically customized for music playback and ripping etc. Nowadays Ubuntu has no real-time kernel, but WEISS has own rt kernel giving original rt patch to Linux Kernel. This is Operating System fully dedicated for music listening, so I'd better to call it "Ubuntu WEISS".

### ***Continuous and ambitious Update***

In most manufacture like DVD player, embedded GNU/Linux OS is updated only for minimum bug fix. But OS and applications of MAN301DSD base station, iPad control application is continuously updated after first release. Even Linux OS and kernel are ambitiously updated to bring many new functions. After external clock synchronization update, some unique updates are planned I hear. For example, file conversion function based on Saracon. And all this is free.

Frankly speaking, price tag of MAN301DSD is high, but it includes many software functions to commit future of digital audio.  
(Of course it doesn't mean all future updates are free.)

Especially metadata is not restricted in AIFF or FLAC. It can deal many file system like Wave, ALAC etc. Simple but powerful metadata editor can enable you editing metadata and CD cover art before or after ripping. You can easily fetch HD cover art from Gracenote and replace cover art easily, even with picture took by iPad camera.



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### How to enjoy MAN301DSD in your audio system

#### Ultra High Quality CD player

MAN301DSD Music CD data is first gathered in SSD. "Ram buffer", WEISS calls it. Then it will be play backed with WEISS original sound engine. It enables stable playback with silent mode ~4x speeds of CD drive and audio grade clock, then it can be ultra high quality CD player. Until setup of storage or leaning iPad operation is completed, I recommend you to enjoy very fine CD sound first. I enjoy very much listening CD via MAN301.

#### Coexistence of MAN301DSD and other network players

MAN301DSD can read out most of NAS used by Linn DS or other network players. So you can add MAN301 to your audio system to extend more functions, for example, CD Ripping, DSD file playback, Gracenote metadata and album artwork fetching and external clock synchronization etc.

#### Seamless music listening without worrying about various kinds of data formats.

With MAN301DSD and HDD storage you can select and playback music data only with tapping on iPad. This is seamless and joyful music listening without worrying about kinds of data format to playback. In this case, MAN301DSD uses precision internal clock generator. On the other hand, you must change sampling rate setting if MAN301DSD is synchronized to external clock generator after update scheduled in near future.

#### Functions will be extended by future with software updates.

This is another and everlasting story. We will have many times to talk in future. Digital audio development is too quick for expansive high end market. However IT computer technology does not guarantee audiophile standard quality. A software based and modular high end (yet expansive) audio product is definitely what hiend audio market is demanded. DSP engines can enhance audio playback quality and transform different character to original sound.

#### MAN301DSD from the viewpoint of computer technology

File sharing system in general use. You can use NAS as music source for MAN301DSD. But MAN301DSD is not DLNA equipment. As it is known, DLNA (Digital Living Network Alliance) is not standards but a guidance based upon much kind of existent computer technologies.

MAN301DSD read out various files in storages with file sharing system in general use, SMB/Cifs, nfs, usbfs etc. Of course it can accept most of DLNA servers. By security reason, at first time MAN301DSD requires User ID & Password of NAS, but it can read out most of Network Attached Storages.

#### Linux PC and hardware configuration

"Only Music Data changes and others are stable and silent." is basic concept of audio playback. On mini ITX mother board, very low power consumption fan less CPU is located only with heat sink. Generally CPU consumes vast power and power consumption changes very rapidly and it is no good for

music playback. Moreover CPU brings radiation noise into whole PC and it is quite harmful for audio playback. And it is not well known, in computer operation Music Data playback is implemented as "Audio Stream".

MAN301 has separated power supplies for DSP & other USB/Firewire devices. The MAIN digital board, which holds digital audio I/Os, master clock, and D to A module are powered by an independent linear power supply. MAN301 internal D to A module has its own dual mono power regulators. When MAN301 is used as an external DAC, DA converter works in "Isochronous Operation" synchronizing to sampling rate, that is, computer works in "Isochronous Transfer". Then computer supply data isochronally at regular intervals (125μs) in bus bandwidth fixed with priority. Basically retry or flow control is not implemented.

[Note] Asynchronous Mode, mainly used in USB audio, is one mode of Isochronous Transfer. Very low power consumption fan less CPU works as DSP, audio grade clock oscillator & DSP chip on mother board, and Linux PC controlling all inner devices with audio grade clock. This hardware configuration is supposed to be a great contribution to excellent sound quality.

#### Real-time kernel

"Real-time" means, the response time which takes the computer to respond to an event is known and predictable. It is supposed to be suitable for audio playback and Isochronous Transfer above. And there is more. "A byproduct of this is usually lower latency for audio." (<https://help.ubuntu.com/community/UbuntuStudio/RealTimeKernel>)

#### One & Only most advanced Music Archive Network Player

I have been using MAN301DSD for 1 year and more. And I felt its price is not high but reasonable. First, it sounds very fine, and update by update it sounds even much better and functions are extended. Easy operation and fine sound quality of ripping is also wonderful.

Now I'm looking forward to receiving an update for external clock synchronization scheduled in near future. I have Stanford Research SC-10 atomic grade time reference, ultra precise OCXO. Here comes Linux PC based music player with atomic grade clock. I think it must bring splendid and wonderful music world. Clock synchronization & quality is critically important in digital audio playback, especially in professional audio, and I know very high reputation of WEISS Engineering in professional audio equipment.

**In this November 2014, I'll be 64 old and I think MAN301DSD will be the best and unreplaceable partner in the rest of my life.**

**Thanks to Meister Daniel Weiss and my fabulous friend Kent Poon.**