

**AUDIONET**

Scientific magic.

# DNC

## The Interface that Excels



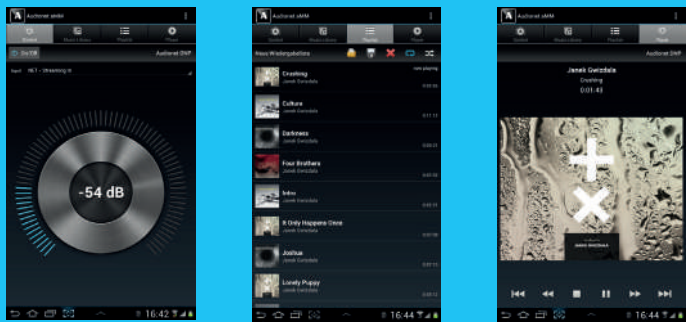
This is a scientific paper.

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Thanks very much. We're glad you are with us.

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## The Interface that Excels

The creation of the DNC (Digital Network Client) began with a single aim: to build the best sounding and most versatile network client and digital/analogue converter possible, capable of interacting with all current music reproduction sources. R&D was allowed to operate with uncompromising rigor and dedication at all phases, leading to the DNC's astonishing, powerful performance, innovative analogue signal processing and circuit design. It is a truly universal interface for digital music. Reading from computers, servers, HDD, USB sticks and streaming from the internet – via cable or wireless – the Audionet DNC will turn any digital music data into a captivating musical experience.



Audionet's DNC, considered a premium choice among elite network clients, allows an ease of use that is uncommon in the high-end audio world. With intuitive and powerful apps, it interfaces with all tablet PCs and smart phones, including all members of the Android and iOS operating systems (Audionet aMM – Audionet Music Manager for Android, Audionet iMM – Audionet Music Manager for iOS). The Audionet DNC is the first network client and Digital to Analog converter able to be fully integrated into a network and operated entirely by a PC or Mac. Our in-house developed software RCP (Audionet Remote Control Point) allows the user to organize complex functions and settings effortlessly through a GUI (graphic user interface). The RS-232 interface allows in addition for professional integration into home automation systems. At long last it can also be controlled in the classic way with the Audionet RC2 Remote Control.

The Audionet DNC's unique functions provide for a cutting-edge music experience. Our engineering team has refined our digital filter technology and integrated it into the Audionet DNC. It is the first network client and Digital/Analogue converter with such powerful delay and EQ management. Such precision allows for first time synchronised balance setting and effective correction for

“... enhances the status of all digital sources ... to High-End devices ... ”

(Einsnull)

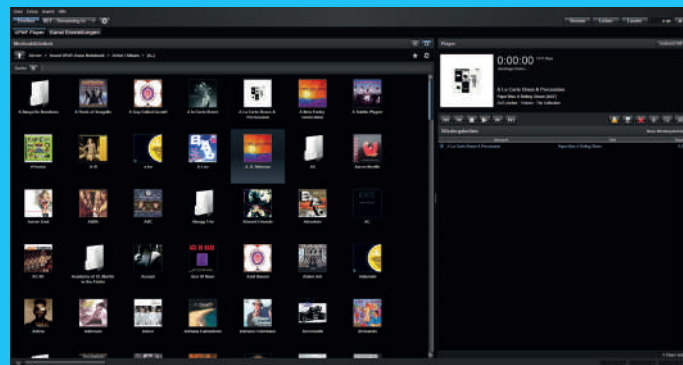
room acoustics and tonal disturbances. Each speaker ensemble can be adapted to its listening environment. Joined with Audionet's analysis and correction software, CARMA, the spatial data is captured, analyzed for perfect correction, and automatically transferred to the DNC. Professional room acoustics, all the time.

The Audionet DNC is fully equipped. It can receive internet and FM radio as well as podcasts, streams music from TIDAL, Qobuz and Deezer, offers an USB 2.0 (USB Audio) and a digital USB-A interface. Each input is independently namable and can have input levels matched. The DNC features an optical Audionet input and output for remote switching between components, and utilizes a network phase monitor. The DNC is capable of using an external power supply (Audionet EPS G2 or EPX), for clean power.

The Audionet DNC offers universal digital connectivity. Nine digital inputs, including WLAN, LAN, USB, S/PDIF, electrical and optical make any network interface possible. A pair of gold-plated RCA and XLR outputs cover all analogue applications.

## Construction

Over eighteen years of research and development into improvement of our components, proprietary software and the feedback of audiophiles at all stages allow the Audionet DNC to feature a sound that is rarely experienced in a streaming client. The digital and analogue sections and the corresponding power supplies are both electrically and physically strictly separated from each other and function independently.



The digital parametric equalizer uses 5 Minimum Phase Equalizers (MPE), for main channels. Each MPE is configurable in filter type, frequency, gain, and Q factor within an unusually wide adjustment range, allowing the effective optimization of all parameters and compensation of less than ideal room characteristics or acoustical problems.

## Signal Processing

In order to optimize the D/A conversion, Audionet's engineers pursued the uncompromising reduction and elimination of jitter, resulting in a highly exact, musical and solid sound image, stage and depth. To this end, we have developed Audionet's Intelligent Sampling Technology, which performs with stellar results the analogue signal recovery from the digital bit stream. Audio data is routed through a two-stage filtering and decoupling procedure.

First, the input data is filtered with Audionet's proprietary software using a powerful signal processor and up sampled synchronously, through filters designed for optimal transient and frequency response. At the next stage, the optimized data is then resolved through an asynchronous up sampling procedure at 192kHz/24bit, allowing the complete isolation from any potential jitter originating from the input clock. The resulting audio data is then passed to two high-performance converters, which are clocked by dedicated ultra high precision quartz crystals and individually processed per channel into analogue signals. This method ensures that jitter faults are eliminated – completely lossless – in the analogue signal to the highest degree, resulting in unmatched clarity, room depth, and stage imaging. In addition, power flux interferences are avoided by powering the digital section of the DNC entirely separately from the analogue section.



## Architecture

Neither did we make any compromises with the analogue signal processing of the Audionet DNC. In a lavish research and development phase every detail has been reconsidered and tested. The circuit design and the construction are designed for maximum performance. Audionet researches, pursues and acquires exclusively only highest

quality components worldwide, requiring in many cases custom design and production. For example, filter caps are designed to our specifications using Japanese silk dielectrics, custom mica caps, and selected high-current foil caps from Germany, manufactured for an ultra low loss angle. Internal wiring is done with top-grade silver/gold alloy, and the best available connection systems.

## Finish

- Front panel:  
Brushed aluminium, 10mm, black anodized, light grey printing  
Brushed aluminium, 10mm, silver anodized, black printing
- Display:  
Red or blue
- Cover:  
Aluminium, 6 mm, black anodised
- Sides:  
Aluminium, 8 mm, black anodised
- Chassis:  
Sheet steel, 2mm, black varnished



As part of our quest to use only the highest-grade components available, Audionet manufactures the DNC's operational amplifiers in house. Each Audionet op-amp contains more than 86 discrete components, and is characterized as a unique gain-bandwidth product. Signal flow and ground routing are implemented consistently in dual mono, in order to achieve maximum channel separation for high frequency characteristics, as well as circuit miniaturization and the shortest possible signal paths. The DNC's signal flow is completely unimpeded by coils, inductors, or capacitors in the path, contributing to the DNC's outstanding performance as an interface that excels in options and sound.

An independent power supply is included for the analogue hardware, with a 50VA toroidal transformer, 26,000  $\mu\text{F}$  of filter capacitance, and a dual voltage stabilization by discrete and instantaneous voltage regulators. In addition, local voltage at each op amp is filtered again with an extra capacitance for a total of 8,000  $\mu\text{F}$ .

Noise, distortions and crosstalk are reduced to a minimum and ensure a high level of energy, dynamics and purity of sound.

## Function

Network-compatible streaming client and D/A converter.

## Special Features

- Streaming client for internet radio and podcast playback (airable.Radio & airable.on-demand and vTuner Internet Radio Service), network devices (UPnP mediaserver) and music data from USB memory sticks
- Offers access to music online services TIDAL, Qobuz and Deezer in Hifi/HighRes quality: FLAC 44.1kHz/16bit up to 192kHz/24bit (depending on availability and account type of respective online service)
- Supported streaming client formats: WAV (up to 192kHz/24bit), FLAC (up to 192kHz/24bit), ALAC (up to 96kHz/24bit), AIFF (uncompressed, up to 192kHz/24bit), AAC, WMA, OGG-Vorbis
- USB 2.0 for external media control and USB Audio 2.0 (up to 192kHz/24bit)
- Analogue stereo outputs
- Parametric equalizer and delay manager for all outputs
- Audionet Intelligent Sampling Technology with asynchronous upsampling up to 192kHz/24bit
- Precise clock generator for the elimination of clock flank deviations (jitter)
- Sampling frequencies and resolution of the digital inputs: 32 kHz to 192kHz/24bit
- Audionet HighBit interface for all audio data including DVD-A and SACD
- FM radio receiver with RDS function
- Audionet ULA technology (Ultra Linear Amplifier)
- Fully DC-coupled, no capacitors in the signal path
- One 50VA toroidal mains transformer for analogue signal processing
- 44.000  $\mu\text{F}$  total filtering capacitance
- Separate power supplies for digital and analogue section
- Gold-doped, pure silver, solid core signal cabling
- Microprocessor with dedicated power supply controls and handles all functions
- Remote activation of other Audionet component via Audionet Link (optical fiber)
- Automatic mains phase detection

## Audionet Listening Room

Listen and be enlightened!

In Audionet's quite incomparable listening room.



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## Delay Manager

- Adjustment range: Distance Listening position <-> loudspeaker 0m to 7m
- Automatic calculation of the delays resulting from the distance settings

## Equalizer

- 5 MPE (Minimum Phase Equalizer) for each main channel
- Adjustment range for each MPE: Filter type Peak-Fil-ter, High-Shelve, Low-Shelve, high-order filter, low-order filter
- Frequency (f): 20 Hz to 20 kHz, 128 logarithmic steps
- Gain: -12 dB to +6 dB, 0.5 dB-steps
- Quality (Q): 0.3 to 8.0, in 20 logarithmic steps
- Import of CARMA equalizer settings

## In- and Outputs

Digital audio inputs: 2 RCA, 75 Ohm, gold plated, Teflon insulated  
2 optical (TosLink)  
1 Neutrik XLR AES/EBU, 110 ohms, gold-plated, teflon insulated  
1 USB Audio type B

Audio outputs: 1 pair RCA, gold-plated, teflon insulated  
1 pair Neutrik XLR balanced, gold-plated

Additional connectors: 1 USB 2.0  
1 Ethernet (RJ 45)  
WLAN antenna (SMA)  
FM-antenna, 75 Ohm  
RS232  
Screw connector for additional earth connection, gold plated

Remote activation: 1 Audionet Link OUT, optical (TosLink)  
1 Audionet Link IN, optical (TosLink)  
3.5mm-jack plug as trigger output with 12V-switching voltage

External power supply: 5-pin socket for EPS G2/EPX  
Mains: IEC male power insert connector

## Technical Data

Frequency response: 0 – 96,000 Hz (-3 dB), DC-coupled  
Slew Rate: 10 V/μsec  
Channel separation: between channels: >100 dB at 20 kHz  
Output voltage: Line: max. 3.2 Vrms  
XLR: max. 6.4 Vrms  
Output impedance: Line: 24 Ohm real  
XLR: 48 Ohm real

### Digital inputs

Sample frequency: 32 to 192 kHz  
THD + N: < -104 dB

Mains: 220...240 volts / 50...60 Hz or 100...120 volts / 50...60 Hz

Power consumption: < 1 W stand by, max. 85 W

Dimensions: width 430 mm  
height 70 mm  
depth 310 mm

Weight: 8 kg

## Optional: External precision-power supply EPS G2 or EPX

Our high performance external precision-power supplies EPS G2 or EPX are improving the qualities of connected equipment tremendously indeed.



[en.audionet.de](http://en.audionet.de)

 Audionet

audionet GmbH  
Brunsbütteler Damm 140 B  
D-13581 Berlin  
Fon +49 (0) 30 233 2421 0  
[contact@audionet.de](mailto:contact@audionet.de)

Errors and omissions excepted. Specifications and design are subject to changes without prior notice.



#### Sources

PLANCK  
VIP G3  
ART G3



#### Integrated Amplifiers

WATT  
SAM G2



#### Preamplifiers

STERN  
PRE G2  
PRE I G3  
PAM G2



#### Power Amplifiers

HEISENBERG  
MAX  
AMP  
AMP IV2



#### Network Components

DNP  
DNA 2.0  
DNA I  
DNC



#### Power Supplies

AMPERE  
EPX  
EPS G2

