Digital Audio Player
DP-X1

Hi-Res AUDIO

ONKYO

DP-X1 Digital Audio Player

A Versatile and Powerful Portable Audio Player and Streaming Device

Onkyo has blazed a trail for Hi-Res audio, from our amplifiers and speakers for home use, to portable amps, headphones and smartphone apps, to the OnkyoMusic download service. Onkyo now introduces its first high resolution digital audio player (DAP), the DP-X1. It is the culmination of our 70 years of designing and engineering audio products, and enables hi-res audio and streaming wherever you go.
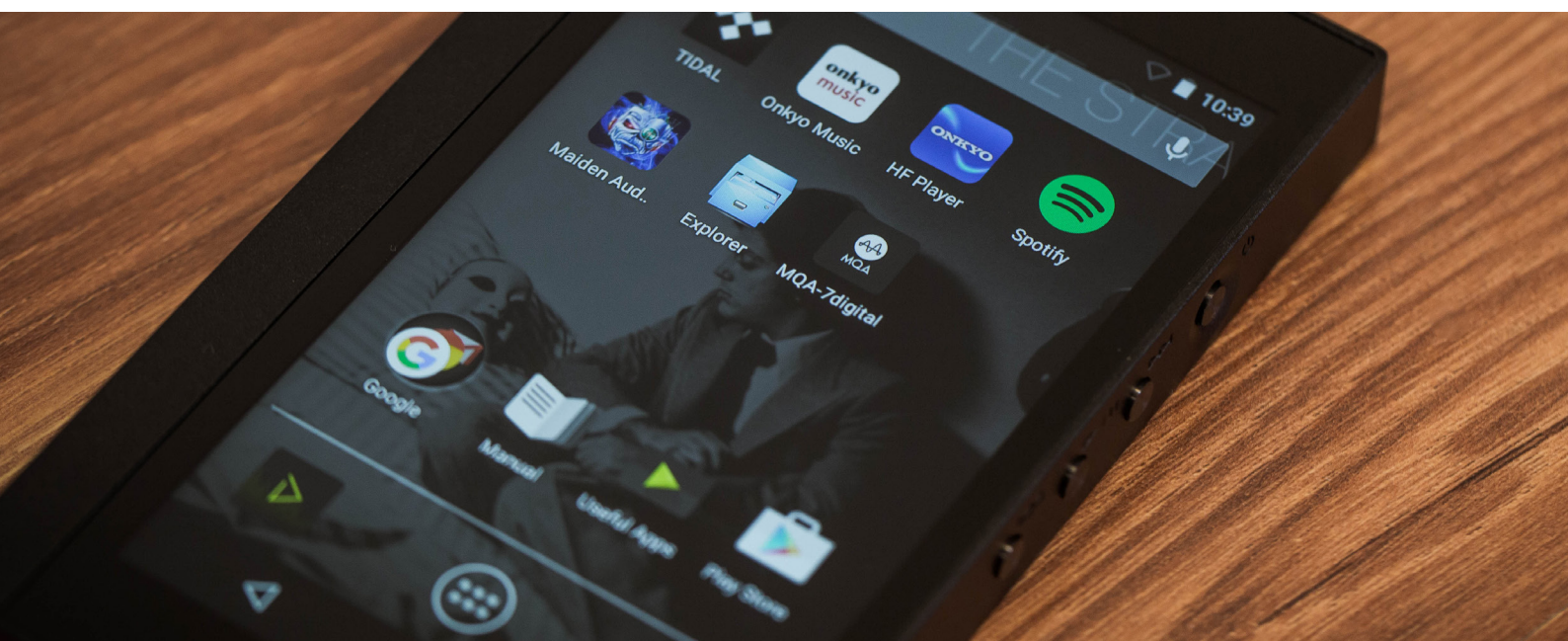
- Top Class DAC and Amp, based on Android™ OS.
- Dual ESS Sabre ES9018K2M DACs and Sabre 9601K Amps
- Standard Balanced (BTL) and Active Control Ground (ACG) modes
- 2.5mm 4-pole and 3.5mm 3-pole output
- Audio circuit board (DAC/amp board) separated and isolated from main circuit board (CPU board)
- Closed loop circuit design to limit noise
- Physical buttons for quick access to music playback control with no need to turn on screen
- Support for 432GB of storage (up to 200GB per micro SD slot and 32GB internal storage)
- Based on Android OS with access to Google Play™ over Wi-Fi [1]
- Micro USB-B/OTG digital output [2]
- Included accessory: Micro USB cable (1.0m) x1, for power and data transfer.

Volume Knob
with 161 steps
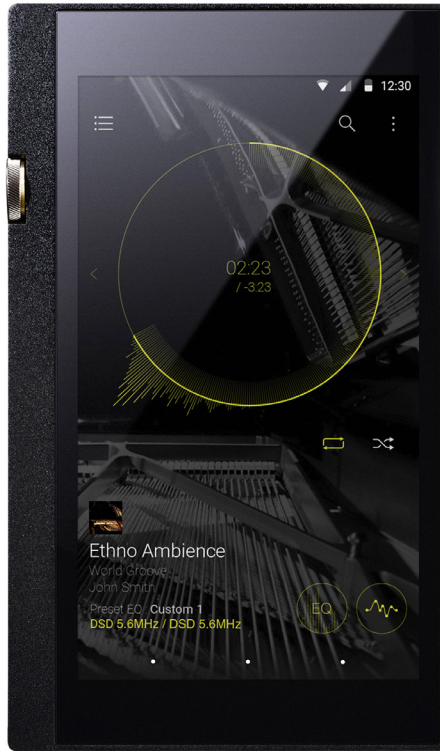
Power

Next Track / FF*

Play/Pause

Previous Track / REW*

Dual micro SD card
slots (support for up to
200GB SDXC per slot)

*Function enabled
via free update

4.7" touch panel display

Ethno Ambience
World Groove
John Smith
Preset EQ Custom 1
DSD 5.6MHz / DSD 5.6MHz

02:23
/ -3:23

3.5mm headphone jack
(line out mode)

2.5mm balanced headphone jack
(line out mode)

Microphone

Micro USB-B/OTG output
(Power & Data transfer)

Dual DACs and Amps Drive Many Hi-Res Audio Formats

DSD
Direct Stream Digital

Listen to your favorite Hi-Res audio formats in high quality audio-based on solid audio design and high grade circuitry, driven by a class leading DAC and Amp.

Playback support for a wide range of Hi-Res formats

The DP-X1 was designed to support many high fidelity audio formats. Maxing out at 11.2MHz DSD support, the DP-X1 also supports up to 384kHz/24-bit audio with support for WAV, FLAC, ALAC, AIFF. With its 2.5mm 4-pole balanced output, 3.5mm 3-pole headphone jack, micro USB-B/OTG digital output, and wireless playback options, the DP-X1 offers plenty of ways to enjoy music.

Up to DSD 11.2MHz, PCM 384 kHz/24 bit output

OUTPUT	DSD playback	Hi-Res playback
2.5 mm out 3.5 mm out /line-out mode	PCM 192kHz /24bit 11.2 / 5.6 / 2.8MHz > 192kHz /24bit	PCM 384kHz /24bit 384kHz > 192kHz 32 bit integer / float > 24bit
Micro USB-B Digital out	11.2 / 5.6 / 2.8MHz Native "DoP" / "Direct" / "PCM" transfer	PCM 384kHz /24bit 32 bit integer / float > 24bit

Industry First Support for MQA

MQA

MQA* is a revolutionary end-to-end technology that delivers master quality audio in a file that's small enough to stream or download. And because it's fully authenticated, you can be sure you're hearing exactly what the artist approved in the studio.

*Support for MQA format is via free update.

Expanded Storage for Extended Enjoyment

With 32GB of internal storage and dual micro SDXC card slots, storage can be expanded up to 432GB. And with up to 16 hours of playback time, you can carry an expansive music library and listen for extended periods of time.
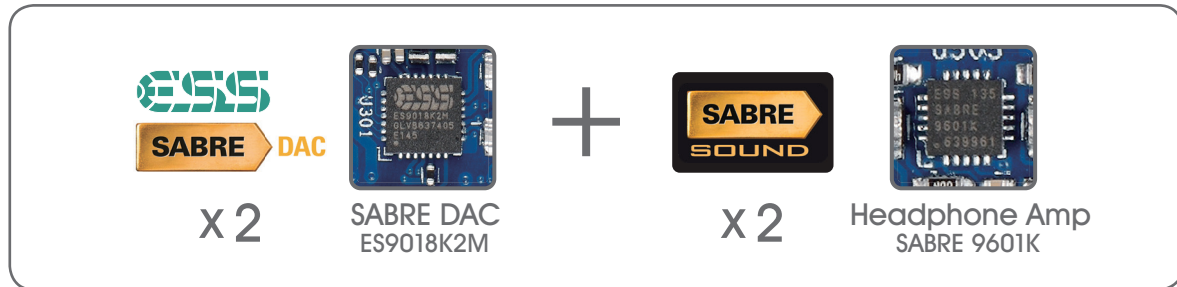
(16 hour playback based on 96kHz/24bit unbalanced output)

32 GB + micro SD micro SD
200 GB x 2

Dual Class-Leading DAC and Amp Setup
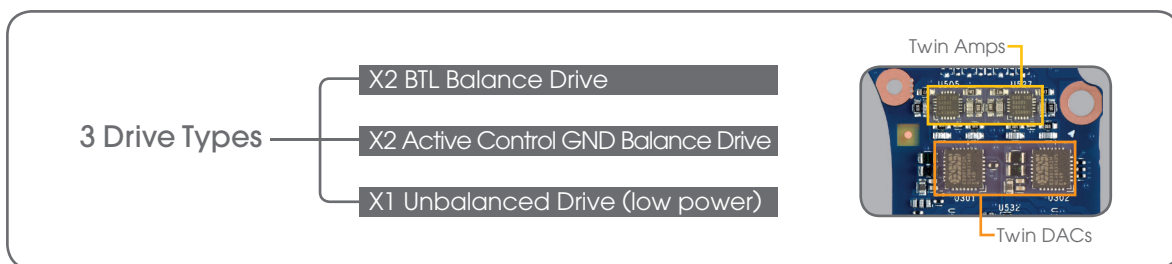
Two ESS Technology Sabre ES9018K2M DACs and two Sabre 9601K amps allow for extraordinary power and control from a portable device.

x2   **SABRE DAC**
ES9018K2M

\+

x2   **Headphone Amp**
SABRE 9601K

Symmetrical Twin DAC and Amp Circuit Design

Optimal component placement of the twin DACs and amps for symmetric circuit design (short, equal distance) yields greater control over balanced signals.

3 Drive Types

X2 BTL Balance Drive

X2 Active Control GND Balance Drive

X1 Unbalanced Drive (low power)

Twin Amps

Twin DACs

Noise Isolating Circuit Design

Similar to the build used in audio receivers, the DAC & amp board is separated from the CPU board to minimize noise and maximize performance. Within the DAC & amp board, the audio circuitry and switching power are also separated to reduce noise. The DACs & amps have their own capacitors to provide a clean audio signal with closed loop design that improves audio signal quality for all audio formats.

Power and audio circuits separated to reduce noise

Shield parts removed in photos.

Separated and isolated circuit boards
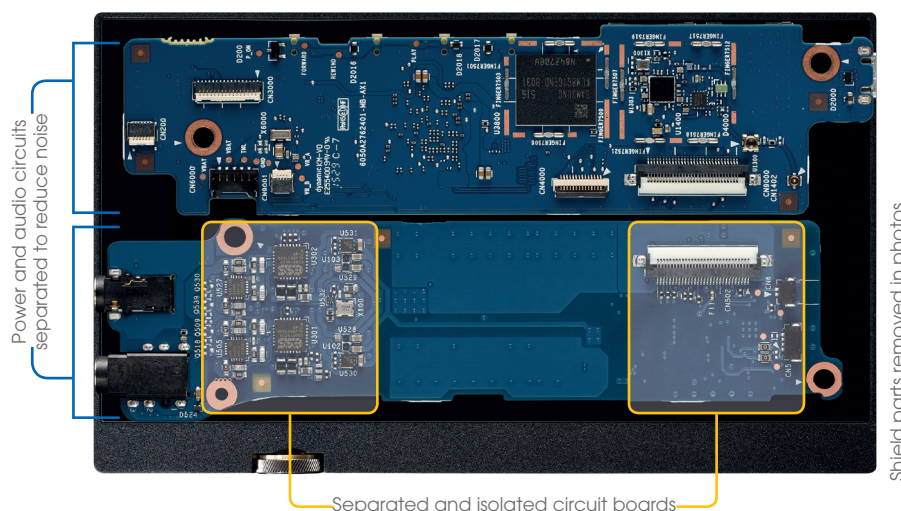
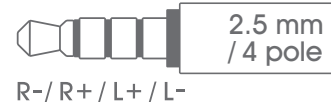# Two Types of Balanced Output & Realtime DSD Conversion and Upsampling

Two Types of Balanced Drive

Balanced output via the 2.5mm 4-pole jack supports the more standard balanced (BTL) drive as well as the more esoteric Active Control Ground (ACG) drive. ACG drive is a different form of balanced drive where the amp's cold side actively drives to create an ideally stable GND. Power gains and increased sound separation increase stability for a clean signal and greater sound clarity, especially compared to unbalanced drive.
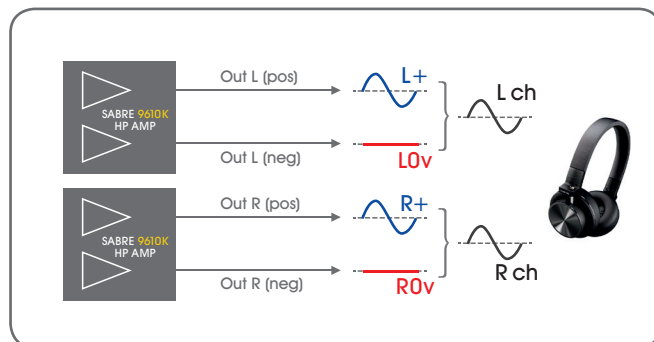
Active Control Ground (ACG) features:

- Increased S/N ratio, greater spatial dimensionality, and clean sound
- Greater delineation for lower frequencies in HiRes audio
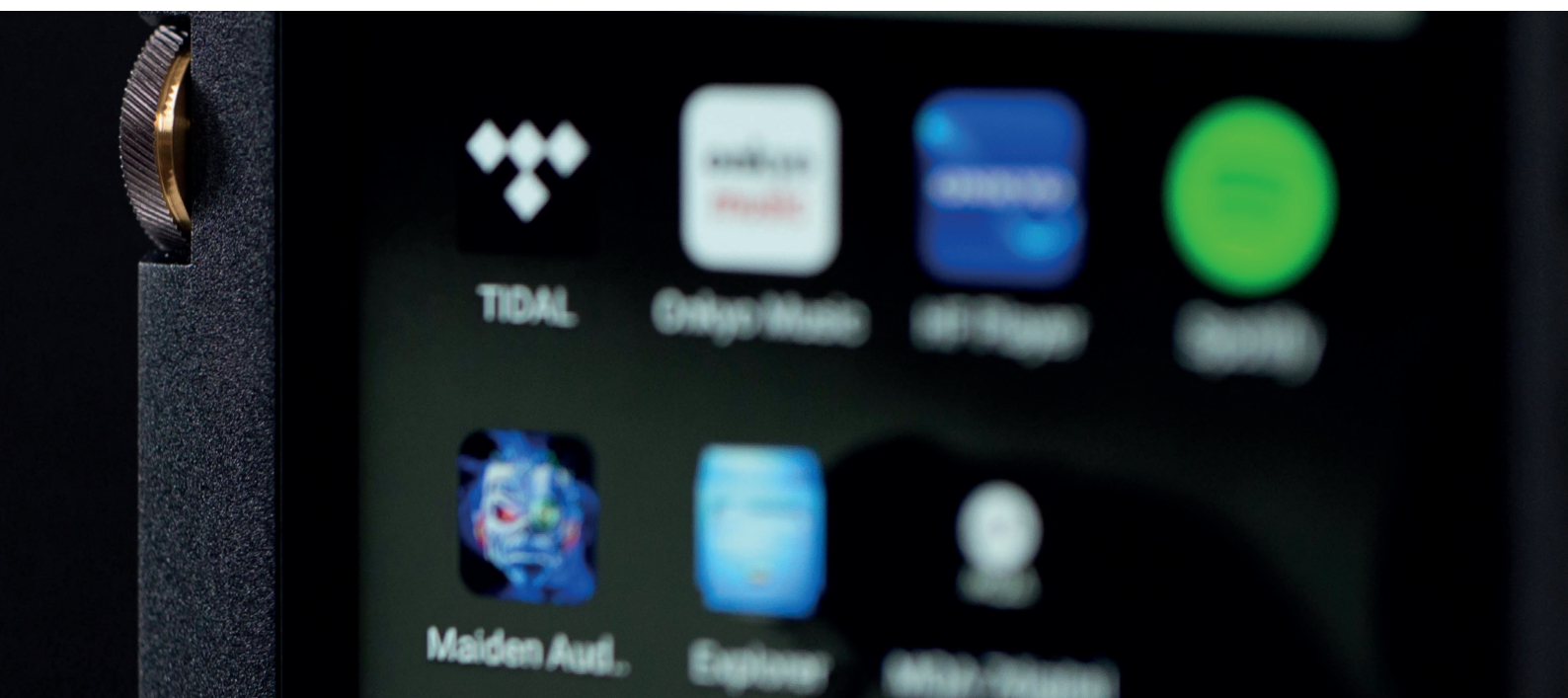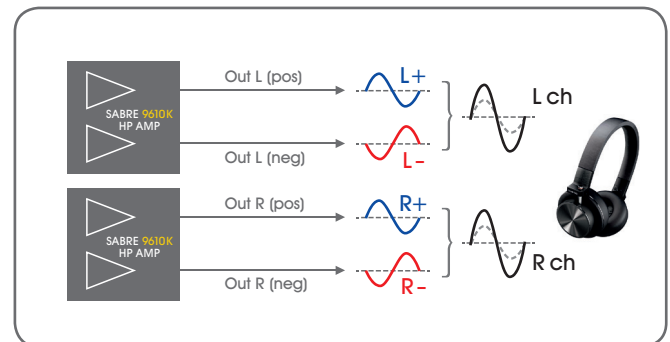- Overall robust and taut sound

Balance output pin assign

| | 2.5 mm / 4 pole |

R- / R+ / L+ / L-

ACG Drive – Increase Stability

SABRE 9610K HP AMP — Out L (pos) — L+ — L ch — L0v
SABRE 9610K HP AMP — Out L (neg) — L0v
SABRE 9610K HP AMP — Out R (pos) — R+ — R ch — R0v
SABRE 9610K HP AMP — Out R (neg) — R0v

BTL Drive – Increase Power

SABRE 9610K HP AMP — Out L (pos) — L+ — L ch
SABRE 9610K HP AMP — Out L (neg) — L-
SABRE 9610K HP AMP — Out R (pos) — R+ — R ch
SABRE 9610K HP AMP — Out R (neg) — R-

TIDAL   Maiden Aud.
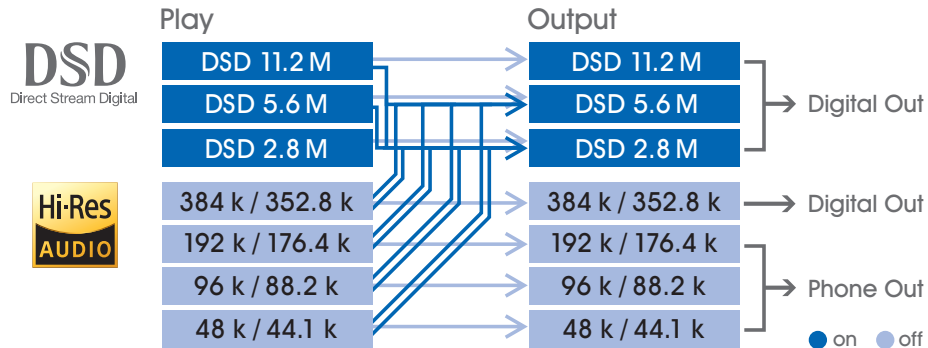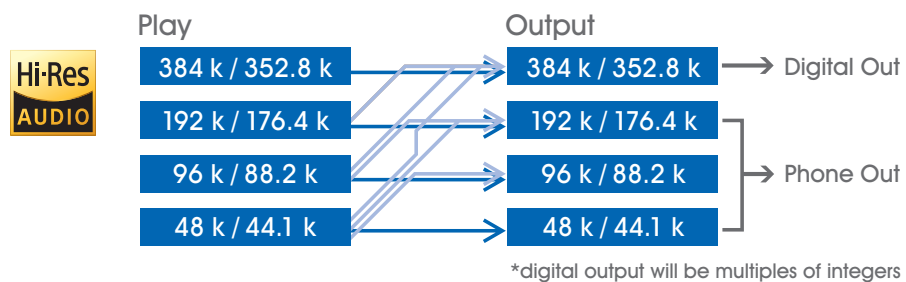
Realtime DSD Conversion

Converts all audio (from Hi-Res to compressed) into DSD quality with realtime DSD conversion over Digital out. The DP-X1 oversamples and pushes bit quantization outside the audible spectrum for crystal clear signal.

DSD Direct Stream Digital	Play		Output	
	DSD 11.2 M		DSD 11.2 M	
	DSD 5.6 M		DSD 5.6 M	Digital Out
	DSD 2.8 M		DSD 2.8 M	
Hi·Res AUDIO	384 k / 352.8 k		384 k / 352.8 k	Digital Out
	192 k / 176.4 k		192 k / 176.4 k	
	96 k / 88.2 k		96 k / 88.2 k	Phone Out
	48 k / 44.1 k		48 k / 44.1 k	

● on   ● off

Upsampling for Hi-Res Sound Quality

Upsamples up to 384kHz (through Digital out). Enjoy all content upsampled to Hi-Res audio quality.

Hi·Res AUDIO	Play		Output	
	384 k / 352.8 k		384 k / 352.8 k	Digital Out
	192 k / 176.4 k		192 k / 176.4 k	
	96 k / 88.2 k		96 k / 88.2 k	Phone Out
	48 k / 44.1 k		48 k / 44.1 k	

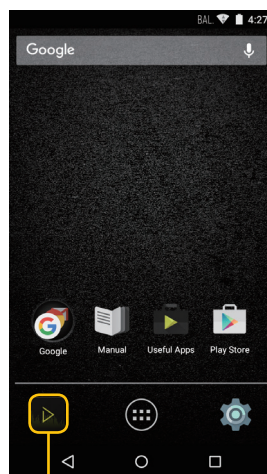*digital output will be multiples of integers
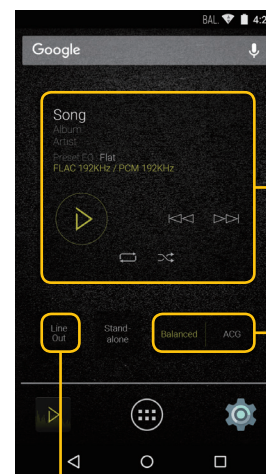
Quick Selection of Playback

Select Balance output, Realtime DSD conversion, and upsampling easily, even during playback.
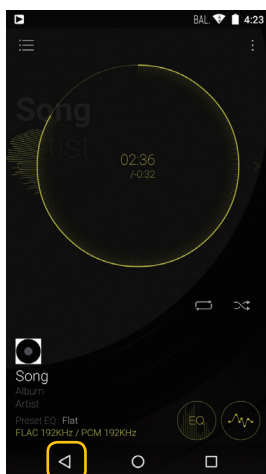
Playback (Music player)
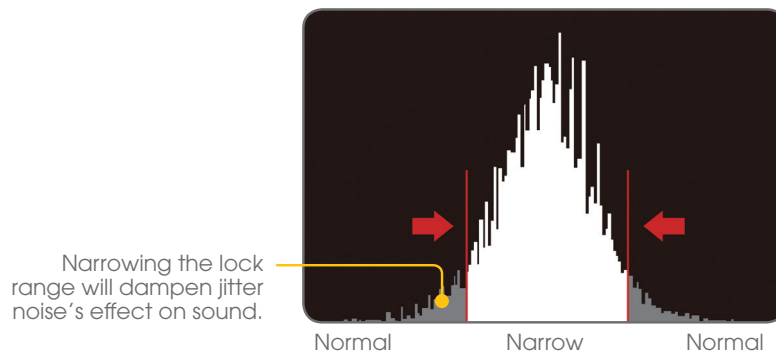
Music Player

Player Widget

Balance Drive Selector

Line Out

Fine Tuning Controls for a Supreme Listening Experience

Lock Range Adjust Eliminates Jitter Noise

Adjust the 7-position lock range to limit jitter noise, improving S/N ratio.

Narrowing the lock range will dampen jitter noise's effect on sound.

Normal   Narrow   Normal

Digital Filters Adjust Sound Characteristics

SHARP, SLOW, SHORT digital filters adjust sound characteristics on the fly.

SHARP

Improves linear startup of sound, bringing the sound forward.


SLOW

Improves response, particularly for stringed instruments, allowing for softer resonance and natural sound.

SHORT
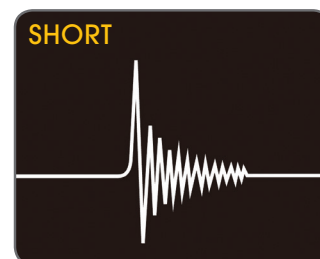
This standard filter keeps the sound characteristic neutral.
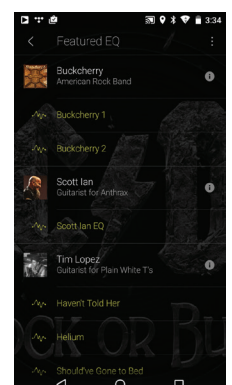
High Precision EQ-HD

With up to 16,384 discrete bands to adjust and the ability to save up to 1,000 EQ profiles, the linear-phase FIR equalizer offers high definition equalization with zero loss in audio quality.
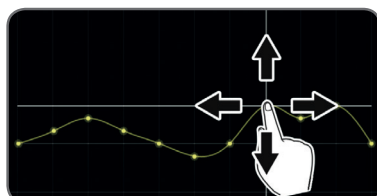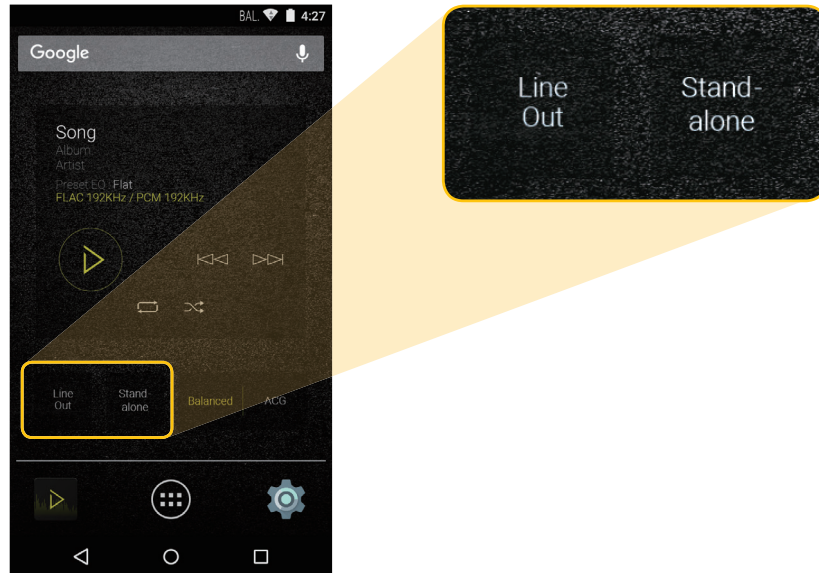

Featured EQ

Experience sound presets created by professional musicians.

Stand Alone Mode For a Pure Audio Experience

In Stand Alone Mode, Wi-Fi, Bluetooth® and the display, which are sources that can create digital noise, are turned off. During Stand Alone Mode, use the physical volume knob and playback buttons to control your music.

Manage Music Easily with "X-DAP Link"

Manage and transfer your non-DRM protected music to the DP-X1. X-DAP Link searches your music libraries, including music purchased from other services, and transfers the song and related metadata to the selected storage location on the DP-X1.

For Windows only
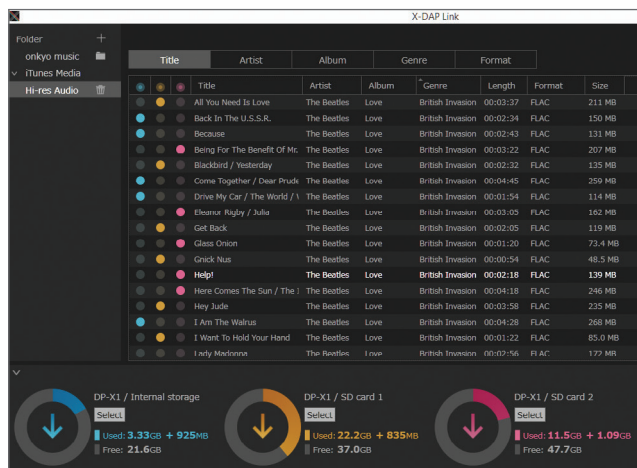
Internal Storage   SD Slot 1   SD Slot 2

Internal storage

X-DAP Link supports
Windows 7,8,10 (32/64 bit)
(as of December 2015)

# Intuitive Interface, Wireless Playback and Limitless Entertainment

## Android OS with intuitive GUI design.

Built on Android 5.1.1, with a fast quad core 2.2GHz CPU and 2GB RAM, the DP-X1 easily supports powerful DSP, the latest apps and is fully customizable.

Large, Easy-to-Use Touch Screen

The DP-X1 features a 4.7" (1280 x 720) screen size many smartphone users have become accustomed to. The capacitive touch display allows for intuitive use of flicks, taps and scrolling gestures. All icons, physical buttons and knobs are positioned with one handed operation in mind. Playback control in the music player supports flick gestures for track advancing, and tapping the progress circle allows for direct control of track positioning.

Touch Screen
4.7 inch
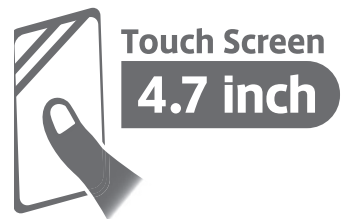
Organize Home Screens
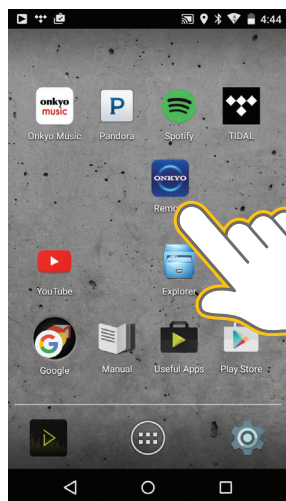
Just like a typical smartphone, arranging home screens and icons to your preference is as simple as drag and drop.

Access to Google Play

Go beyond just a music player. Shop Google Play to add your favorite streaming apps such as Tidal or Pandora, video services, games, and more. More than a music player, the DP-X1 is a limitless entertainment player.
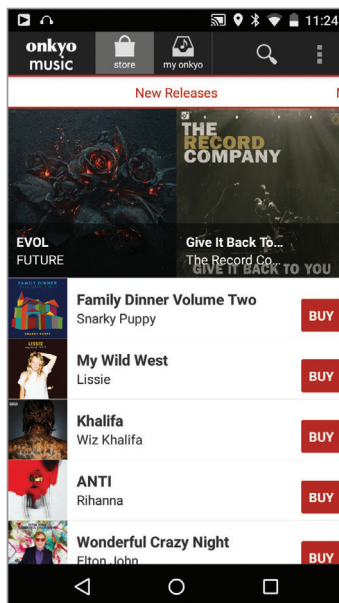
ANDROID APP ON
Google play
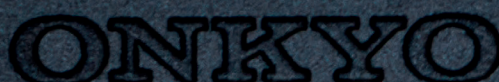
Direct Download From OnkyoMusic
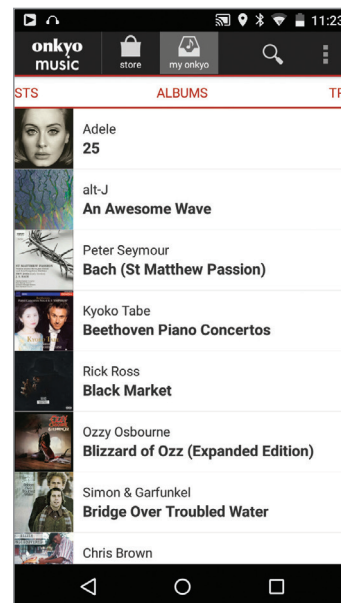
onkyomusic

OnkyoMusic download service offers the latest music releases and remastered albums in hi-res for beyond-CD quality audio. Install the OnkyoMusic app to purchase and download directly within the player over Wi-Fi – no need to sync with a home computer.
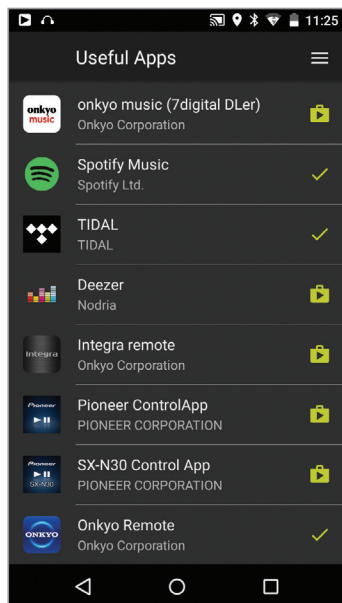
Access OnkyoMusic
via "useful apps"

Purchase music directly
from OnkyoMusic

Download songs
from within the app

Stream Audio to Another System

Wi-Fi Direct (Play Thru, via free update) enables the DP-X1 to stream audio wirelessly to other devices. The Onkyo Remote App facilitates wireless streaming to an Onkyo system, and allows you to use the DP-X1 as a remote controller, too. In addition to streaming over Wi-Fi, aptX makes high quality audio possible over Bluetooth.

Model number	DP-X1
OS	Android 5.1.1
Display	4.7 inch/11.94 cm (1280 x 720) capacitive touch screen
Internal memory	32GB (including system area)
Expansion memory	MicroSD (SDXC) slot x2 (200GB Max per slot)
Wi-Fi	802.11a/b/g/n/ac (Wi-Fi Direct/WPS)
Bluetooth®	Profiles: A2DP/AVRCP/HSP/OPP/HID/PAN Codecs: SBC/aptX
Supported audio formats	DSD (DSF/DSDIFF)/FLAC/ALAC/WAV/AIFF/Ogg-Vorbis/MP3/AAC/MQA (via free update)
Sampling Frequency and bit rate	44.1 kHz/48 kHz/88.2 kHz/96 kHz/176.4 kHz/192 kHz/352.8 kHz/384 kHz 16 bit/24 bit (32 bit float/integer will convert to 24 bit) 2.8 MHz/5.6 MHz/11.2 MHz (1 bit) PCM conversion
Supported playlist formats	M3U/PLS/WPL
Supported video formats	H.263/H.264 AVC/H.265 HEVC/MPEG-4 SP/VP8/VP9
Supported picture formats	JPEG/GIF/PNG/BMP/WebP
Max. output power	75 mW + 75 mW (Unbalanced/ 32 Ω) 150 mW + 150 mW (Balanced/ 32 Ω)
THD	Less than 0.006%
Sensitivity	Greater than 115dB
Frequency Response	20 Hz - 80,000 Hz
Impedance	Unbalanced: 16 - 300 Ω/Balanced: 32 - 600 Ω
Input terminal	2.5 mm 4 pole headphone output (pin assign from tip R- R+/L+ L-) 3.5 mm headphone output (w/LINE OUT mode) Micro USB-B/OTG output (Power & Data transfer)
Gain setting	Low/Normal/High
Playback	Approx 16 hours (96 kHz/24 bit,FLAC Unbalanced playback)
Dimensions (H×W×D) mm	129.0 × 75.9 × 12.7 mm
weight	203g

[1] Wi-Fi access required for data transmission.
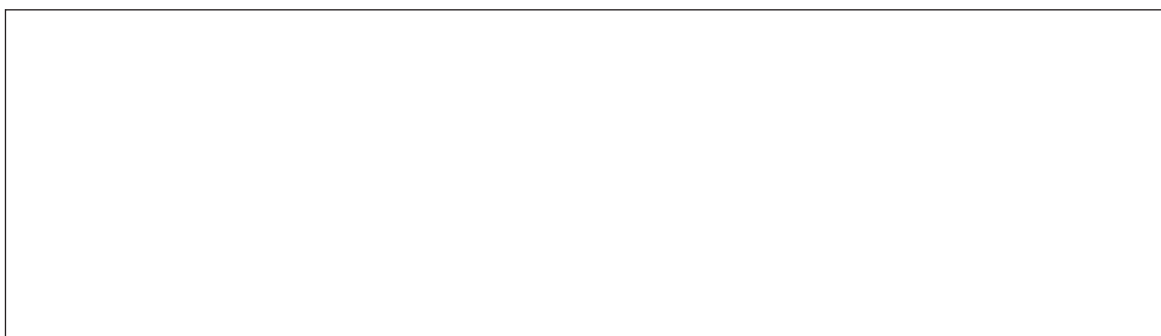[2] On The Go operation requires a separately sold micro USB cable.

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Hi·Res AUDIO The product with this logo has been designed to maximize the sound performance of High Resolution Audio.*
*High-resolution audio generally refers to music data with a volume of information exceeding that of CDs.

For more information, please visit: www.eu.onkyo.com

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