



Master Quality Digital Audio Player

Quick User Guide



Thank you for choosing Cayin N7+ master quality digital audio player. Please read through this User Guide before you start to use the player and it will help you understand the basic operations of the player.

● Packaging and Accessories-----

Cayin N7+ Master Quality Digital Audio Player comes with the following accessories in the package. Please check carefully and make sure everything is in place.

Cayin N7+ Master Quality Digital Audio Player x1

User Guide x 1

Tempered Glass Protective Screen x 1

Hi-Res Audio label x 2

Protective Case x 1

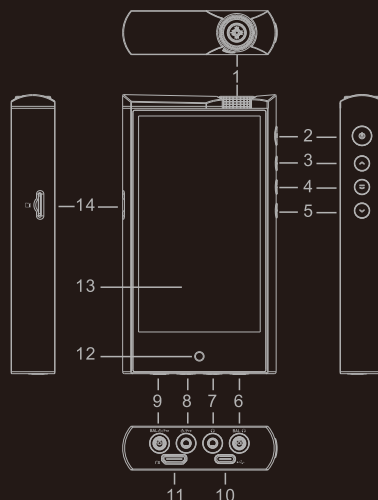
USB Type-C Cable x 1

4.4mm to 2.5mm adapter x 1

3.5mm to 2.5mm adapter x 1

● Buttons and Control -----

1. Volume Knob
2. Power on/off and Screen on/off Button
3. Previous/Rewind Button
4. Play/Pause Button
5. Next/Fast Forward Button
6. 4.4mm Balanced Headphone Out
7. 3.5mm Single-ended Headphone Out
8. 3.5mm Single-ended Line Out/Pre Out
9. 4.4mm Balanced Line Out/Pre Out
10. Multi-functional USB-C Port (USB Storage, USB Audio, SPDIF)
11. I²S Digital output via Mini HDMI
12. Return/Home/Charging/Sampling Rate Indicator
13. Touch Screen
14. Micro-SD(TF) Card Slot



● Menu and Settings-----

The Pull down menu of N7+ adopts a phase-in design like other Android device. Drag your finger from the top (preferably at the middle) of your screen downward to show the Notification Center, and then drag down again to display the Quick Settings Menu. Click on the gear icon at the right bottom of the menu, you'll enter System Settings Menu. Click on the pencil icon at the left bottom of the menu, you'll be able to edit the drop-down menu. Click on the power icon at the middle bottom of the menu, you can choose to shut down or restart the DAP. Other than the regular Android features, the Quick Settings Menu provides the following options:

1. Gain Settings: Choice of Low (LdB), Mid (MdB) and High (HdB). Gain setting in amplification circuit. The sound level and output level will be changed when you toggle the gain switch even with volume remain unchanged.
2. Amplifier Type: Choice of Class A and Class AB.
Note: Static Current of the amplifier circuit at Class A mode is higher than Class AB. Once changed there is a change on the timbre too. However the Power Consumption at Class A mode will also be higher and Battery Duration will be shorter. Please select the mode according to your preference.
3. Output Switch: Choice of Line Output (LO) and Preamp Output (Pre). Please select according to your actual needs.
4. Digital Output: Choice of SPDIF and I²S in digital output. This player cannot output these two bit-streams at the same time.
5. Audio Settings:
Audio settings such as Digital Output, Amplifier Modes, Pre Out/Line Out, PO/Pre Gain, Channel Balance, Max Volume Volume Knob Setting and MQA Decode Setting etc.

Note: All these settings will be applied to all music apps in N7+. After you started up the Cayin Music App, you can click the rudder icon or swipe from left (preferably at the middle) of the screen to right to display the Application Menu. This will offer options such as Music scanning, Equalizer, Cover and Lyrics Settings etc.

You can call out the Recent Apps list by swipe from bottom (preferably at the middle) of the screen to the middle. You can review or switch to other active applications. To terminate an active application, you can either click the cross sign at each task window or swipe up (out of the main display area). If you scroll to the left end of the list, the system will offer a "Clear All" options and you terminate all active application in one move.

• Basic Operation -----

1. Power on/off and Screen on/off.

Press Power On/Off Button for 3 seconds to turn on N7+. When screen is on, short press the Power Button will turn off the display. Press the Power Button again to turn on the display. When the player is on, press and hold Power Button for 3 seconds the player will pop up a confirmation interface and you can choose to Power Off or Restart. If you need to force the player to Power Off please press the Power Button and Previous Button simultaneously for 15 seconds and then the player will be powered off in regardless of operation status.

2. File Management

You can connect the player to a computer via the USB-C cable. When connected, the player will pop up a USB status system message. Tab on the message and select "Transfer file", you can now copy, paste and delete files to the internal storage or TF card mounted in the card slot. The TF card slot supports SDHC and SHXC types TF cards and tested to be compatible with 1.0TB TF cards.

3. Connecting Headphones

The player supports 4.4mm balanced headphone and 3.5mm single-ended headphone. You can connect your headphone to designated phone out sockets on the bottom of the player and enjoy music immediately. If you are using balanced headphone with a 2.5mm TRRS connector, we have provided a 4.4mm to 2.5mm adapter and a 3.5 to 2.5mm adapter for that purpose.

4. Music Playback (Cayin Music App)

Cayin Music App is a music player app preinstalled with the N7+ firmware. It plays all popular music file format and is fine tuned and optimised to work with the circuit design and hardware capability of N7+. We strongly recommend all N7+ users to check out the Cayin Music App.

(1). When you are at the default screen of Cayin Music App, select Folder Tab and then choose the preferential storage location: Internal Storage, microSD card or OTG. You can now browse through folder tree and, when you find the music file you are looking for, press it and N7+ will start the playback of the file. Or you can select “Scan for Music Files” from the Application menu, when N7+ finishes the scanning process, you can now browse through the music content by Album, Artist, Genre or Song and select the music files you want to play.

(2). When N7+ starts a playback, the track information and playback status will be displayed at Now Playing Bar at the bottom, press the Now Playing Bar, the player will display the Music Playback screen. You can play/pause, skip tracks, change playback mode and review play queue by pressing at the appropriate icon. In addition, you can swipe at the Album Art to review lyric and music information, drag and drop the progress bar to fast forward or rewind, or press the T-shirt icon on the bottom left corner of album art to change playback theme.

5. Volume Adjustment

Rotate Volume Knob to adjust the output volume level of Headphone Output and Pre Output. Turn clockwise to increase or counter-clockwise to decrease the volume output. N7+ will display the Volume Control Screen during volume adjustment, user can slide up and down on the screen to adjust volume quickly, or press the + and - icon to fine tune volume setting.

6. Play/Pause

Click the Play/Pause button to play or pause the playback.

7. Skip Tracks

Press the Previous/Rewind button to switch to previous track, and press the Next/Fast Forward button to skip to next track. Hold the Previous/Rewind button to rewind from current playback, and release the button to resume playback at designated location. Hold the Next/Fast Forward button to fast forward from current playback, and release the button to resume playback at designated location.

8. Return/Home Button

Press the circular Return/Home button at any screen will bring you back one level, or hold the button to go back to the Home screen directly.

9. Multi-color smart glowing LED

■ Yellow : 44.1/48 kHz

■ Blue : 176.4/192 kHz

■ Cyan : 705.6/768 kHz

■ Green : 88.2/96 kHz

■ Violet : 352.8/384 kHz

■ White : DSD

Charging indicator:

- Red: Breathing light when charging. Lighted up continuously when charging is completed.

Note:

You can enable or disable the Smart LED at the System Settings menu. If you playback music during charging, the Smart LED will be function as charging indicator only.

● Connect to other Devices-----

1. Connect to other devices as a USB DAC

(1) N7+ can be used as a USB DAC when connected to any device with USB output function (laptop, other DAP etc.). The bundled USB-C cable is applicable for this purpose. When connected, the player will pop up a USB status system message in the drop-down menu. Tab on the message and select "USB DAC in" option, USB DAC function will become effect. N7+ will display USB DAC user interface screen and stop all local playback function.

(2) N7+ is compatible with desktop or laptop computers and Cayin DAPs. Android device are partially supported (required correctly implemented OTG with Audio support).

(3) Windows based devices might require an appropriate USB Audio Driver before it will recognize N7+ as a USB DAC. Please download and install suitable USB Audio driver from Cayin's official website (en.cayin.cn).

*The Cayin Audio USB Audio Driver for N7+ is ONLY compatible with Windows 10 or newer system versions.

(4) Mac OS devices and Cayin DAP or Android devices (if supported) do not require any driver to work with N7+ (as a USB DAC).

NOTE:

When connected as a USB DAC, the source device will be feeding audio data and charge N7+ through the USB connection. The USB DAC function might fail if the source device cannot provide sufficient power supply for this purpose.

2. Connect to Digital Audio Devices

N7+ offers three digital output interfaces: S/PDIF, I²S and USB Audio. You can choose your preferential digital output interface.

- (1) USB Audio Output: USB Audio output is available through the USB-C connector. Please use high quality USB OTG cable to connect N7+ to a DAC device with USB Audio input. Typically, a desktop DAC features a USB-B connector for USB Audio input, you'll need a USB-C to USB-B cable for this connection. The cable is readily available in the market and is not supplied in N7+ package. Be reminded that the phone output, line out and S/PDIF and I2S digital output will be suspended when USB Audio output is enabled.
- (2) S/PDIF Digital Output: Cayin has embedded the S/PDIF signal into USB-C connector. This is a proprietary digital audio transmission technology and will require a special USB-C to RCA or USB-C to 3.5mm 75Ω coaxial cable from Cayin (purchased separately) to complete the connection.
- (3) I²S Digital Output: N7+ implements I²S digital output through the Mini HDMI port. Please use high quality HDMI cable (purchased separately) to connect N7+ to outboard DAC with I²S input.

Note:

To enable (2) and (3), you have to set the digital output option from Audio Settings from Pull down menu to SPDIF or I²S accordingly, and disconnect all 3.5mm and 4.4mm connections before the digital audio output is available.

The I²S through mini HDMI Connector is an proprietary implementation. The pin definition was defined in-house and was designed to work with Cayin DAC with I²S input. It is incompatible with standard HDMI audio visual device, and we cannot guarantee compatibility with other DAC with I²S input.

3. Connect to Analogue Audio Devices

N7+ is designed to have a shared 3.5mm singled ended Line Output/Pre Output and a shared 4.4mm balanced Line Output/ Pre Output. You can connect it to your amplifier with an appropriate analogue audio cable.

If you are using 3.5mm Line Output please set the Output Switch to LO from pull down menu. You can output line out signal to an amplifier by connecting the 3.5mm plug of analogue interconnect to the line out port of this player, and then connect the other end to the line input connectors of an amplifier.

If you are using 3.5mm Pre Output please set the Output Switch to Pre from pull down menu. With Pre Output you can connect N7+ to an amplifier which has the function of Pre In like our C9 Portable Headphone Amplifier.

If you are using 4.4mm Line Output please set the Output Switch to LO from pull down menu. You can output line out signal to an amplifier by connecting the 4.4mm plug of analogue interconnect to the line out port of this player, and then connect the other end to the line input connectors of an amplifier.

If you are using 4.4mm Pre Output please set the Output Switch to Pre from pull down menu. With Pre Output you can connect N7+ to an amplifier which has the function of Pre In like our C9 Portable Headphone Amplifier.

Note:

- (1) Line Out and Pre Out used the same shared Output socket. You can switch and choose the appropriate output mode from the Output Switch from the Pull down Menu.
- (2) Please be reminded that volume control of this player is not applicable to line out signal.

● Bluetooth/WiFi-----

You can connect N7+ to Bluetooth device. The Bluetooth device must be paired with N7+ in advance.

You can select the WiFi icon on the Quick Setting menu to connect N7+ to WiFi/internet. N7+ International version has pre-installed Google Play Store, you can install music or streaming applications and enjoy online streaming service after connected to internet.

● Charging-----

N7+ supports PD2.0, you can use an appropriate QC ready chargers or standard 5V 2A USB charger. We recommend you to use the supplied USB-C cable to charge the player. A battery charging icon with battery capacity will display on the Screen during charging. The circular charging indicator will flash while charging, and lighted up continuously when charging is completed.

● Firmware Upgrade-----

Cayin will release new firmware as needed to improve and optimize the function of N7+. Please follow the instructions of the firmware released on <http://en.cayin.cn/> to complete the firmware upgrade procedure.

● Specifications -----

Product Highlights			
CPU	Snapdragon 665	OS	Android 12
DAC	DSD	Battery	3.8V 9000mAh (34.2Wh)
Display	5.0" TFT 1080*1920 (FHD)	WiFi	IEEE 802.11 a/b/g/n/ac
Net Weight	~ 370 g	Dimension	约 142*77.8*22.2mm

Battery and Duration Parameters					
Battery Duration	Testing Condition	WiFi, Bluetooth Disabled, Screen off, 32Ω, Mid Gain, Class AB, Volume 30, Playback various format of music files			
		PO(Class A)		PO(Class AB)	
		3.5 Single Ended	4.4 Balanced	3.5 Single Ended	4.4 Balanced
		~11H	~9H	~13H	~10H
Charging	Charging Condition	Standard Charger (5V-2A)	Quick Charge (PD2.0)		
	Charging Time	~5.5H	~3.5H*		

*PD2.0 from 20% to 80% in ~2H

Audio Specification				
3.5mm PO	Power Rating	High Gain	32Ω	330mW
	Frequency Response	20Hz-20kHz (±0.2dB, Fs=192kHz)		
	THD+N	0.004%(1kHz,Fs=44.1kHz;20Hz-20kHz,A-Weighted)		
	Dynamic Range	110dB(1kHz,Fs=192kHz/24bit;20Hz-20kHz,A-Weighted)		
	S/N Ratio	115dB(1kHz,Fs=192kHz/24bit;20Hz-20kHz,A-Weighted)		
	Channel Separation	78dB(1kHz;32Ω Load)		
	Output Impedance	0.6Ω(32Ω Load)		
4.4mm PO	Power Rating	High Gain	32Ω	690mW
	Frequency Response	20Hz-20kHz(±0.2dB, Fs=192kHz)		
	THD+N	0.004%(1kHz,Fs=44.1kHz;20Hz-20kHz,A-Weighted)		
	Dynamic Range	112dB(1kHz,Fs=192kHz/24bit;20Hz-20kHz,A-Weighted)		
	S/N Ratio	116dB(1kHz,Fs=192kHz/24bit;20Hz-20kHz,A-Weighted)		
	Channel Separation	110dB(1kHz;32Ω Load)		
	Output Impedance	1.2Ω(32Ω Load)		

Audio Specification				
3.5mm PRE	Output Level	High Gain	10k Ω	4.0Vrms(MAX)
	Frequency Response	20Hz-20kHz (± 0.2 dB, Fs=192kHz)		
	THD+N	0.005%(1kHz, Fs=44.1kHz; 20Hz-20kHz, A-Weighted)		
	Dynamic Range	112dB(1kHz, Fs=192kHz/24bit; 20Hz-20kHz, A-Weighted)		
	S/N Ratio	116dB(1kHz, Fs=192kHz/24bit; 20Hz-20kHz, A-Weighted)		
	Channel Separation	98dB(1kHz; 10k Ω Load)		
	Output Impedance	110 Ω		
4.4mm PRE	Output Level	High Gain	10k Ω	7.0Vrms(MAX)
	Frequency Response	20Hz-20kHz (± 0.2 dB, Fs=192kHz)		
	THD+N	0.004%(1kHz, Fs=44.1kHz; 20Hz-20kHz, A-Weighted)		
	Dynamic Range	114dB(1kHz, Fs=192kHz/24bit; 20Hz-20kHz, A-Weighted)		
	S/N Ratio	117dB(1kHz, Fs=192kHz/24bit; 20Hz-20kHz, A-Weighted)		
	Channel Separation	105dB(1kHz; 600 Ω Load)		
	Output Impedance	220 Ω		

Audio Specification				
3.5mm LO	Output Level	High	10k Ω	2.0Vrms
	Frequency Response	20Hz-20kHz (± 0.2 dB, Fs=192kHz)		
	THD+N	0.005%(1kHz, Fs=44.1kHz; 20Hz-20kHz, A-Weighted)		
	Dynamic Range	112dB(1kHz, Fs=192kHz/24bit; 20Hz-20kHz, A-Weighted)		
	S/N Ratio	116dB(1kHz, Fs=192kHz/24bit; 20Hz-20kHz, A-Weighted)		
	Channel Separation	98dB(1kHz; 10k Ω Load)		
	Output Impedance	100 Ω		
4.4mm LO	Output Level	High	10k Ω	4.0Vrms
	Frequency Response	20Hz-20kHz (± 0.2 dB, Fs=192kHz)		
	THD+N	0.004%(1kHz, Fs=44.1kHz; 20Hz-20kHz, A-Weighted)		
	Dynamic Range	114dB(1kHz, Fs=192kHz/24bit; 20Hz-20kHz, A-Weighted)		
	S/N Ratio	117dB(1kHz, Fs=192kHz/24bit; 20Hz-20kHz, A-Weighted)		
	Channel Separation	105dB(1kHz; 600 Ω Load)		
	Output Impedance	200 Ω		

Digital Audio Interface	
I ² S	Connector:Mini HDMI (The DAP transmits I ² S signal with HDMI connector, it is not compatible with standard HDMI device)
	PCM upto 32Bit/768kHz
	DSD upto DSD512
S/PDIF Coaxial	Connector : USB-C (75Ω)
	PCM upto 24Bit/192kHz
	DSD : upto DSD64(DoP)
USB Audio Out	Connector : USB Type-C
	PCM upto 32Bit/768kHz.
	DSD upto 512
USB Audio In (DAC)	Connector : USB-C, Asynchronous USB Audio Class 2.0
	Support Windows(drivers required),Mac OS,Android(partial)
	PCM upto 32Bit/768kHz
	DSD: upto DSD 512, support Native, Dop256
Bluetooth	v5.0
	Transmit Codec: UAT(up to 192kHz)、LDAC(up to 96kHz)、AAC(up to 48kHz)、SBC(up to 48kHz) Receive Codec: UAT(up to 192kHz)、LDAC(up to 96kHz)、AAC(up to 48kHz)、SBC(up to 48kHz)

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