Analogue Duo
User Guide

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Congratulations on becoming an Analogue Duo owner.

A tribute to virtually the entire NEC video game ecosystem.

Out of the box Duo is compatible with TurboGrafx-16, PCE, SuperGrafx & CD-ROM² game libraries. Including native support without the need for any system cards and beyond.

Sync 8BitDo Bluetooth or 2.4g controllers directly to Duo. In addition, Duo supports virtually all 1st party controllers. Up to 5 player support (including miniDIN or Multitap devices). You can connect controllers directly via wired USB, too.

Update your Duo to the latest firmware at analogue.co.

What's in the box

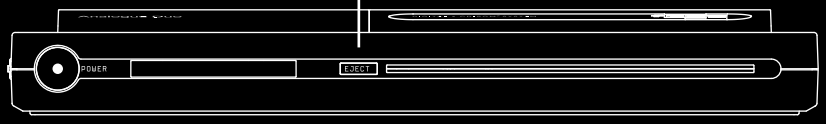
— Analogue Duo
— USB-C Power Supply
— HDMI cable
— USB-C cable
— Quick-Start Guide

VOLUME WHEEL

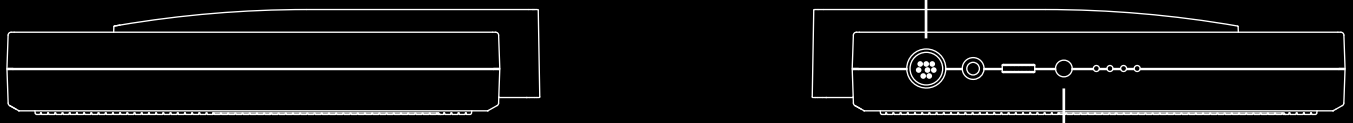
CONTROLLER LED



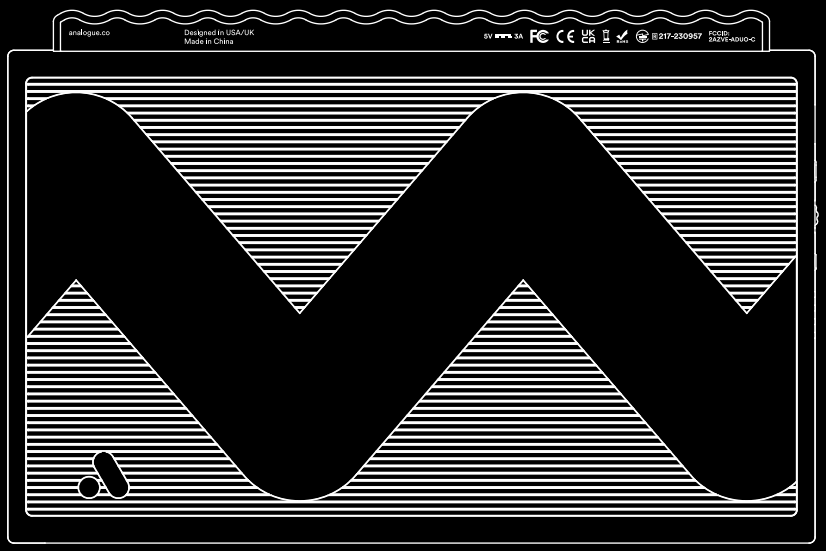
EJECT CD

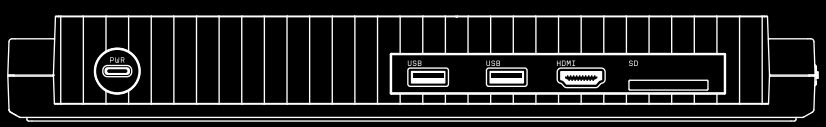


MINIDIN



PAIRING BUTTON





Getting Started

Connect the power supply to the USB-C cable and the USB-C cable to Duo. Plug the power supply into a standard AC outlet. A dedicated SD card is required for game saves and full OS features.

Duo has two USB ports, which can connect and charge controllers as well as a miniDIN connector supporting original controllers and devices. Duo can connect with up to four Bluetooth controllers, two 8BitDo 2.4G controllers or two USB controllers. Up to four controllers can be connected simultaneously using any combination of connections. A fifth controller can be connected via the miniDIN or by using an original Multitap device.

When first using Duo it will automatically search for a wireless controller to pair with indicated by a flashing white controller LED. Once a controller is paired or connected you can remotely power on Duo without having to press the Duo power button by simply powering on the controller (typically with the Start or Home button).

Use the included USB-C cable and Power Supply

Caution: Do not insert DVD, Blu-ray or damaged discs into Duo. These are not supported and may cause undesired behavior.

Upgrading Duo OS and Firmware

Note: Remove any CD, HuCard or USB controllers before updating.

Update Duo OS by visiting analogue.co/support/duo to get the most recent release. You will see an update bar on your display during the two stage update process. If the update is interrupted, restart by powering off and powering on Duo.

Power LED Status

—	LED Solid White	Power is On
—	LED Blinking White	CD Ejecting
—	LED Breathing White	CD Reading
—	LED Solid Purple	System Sleep
—	LED Flashing Yellow	Updating OS

Controller LED Status

—	LED Blinking White	Pairing Ready
—	LED Solid White	Connected

Ports and Indicators

Power Button
Press to power on or wake Duo. Hold for 2 seconds to power off Duo.

Eject Button
Press to eject the CD.

Pairing Button
Press to pair a wireless controller.

Controller LEDs
Indicate whether Player 1 - 4 is connected or pairing with Duo. There is no indication for original controllers connected via the miniDIN.

HDMI Port
Output video and audio from Analogue Duo to your display or receiver.

USB Ports x 2
Connect directly or charge your controllers.

Power Port
Insert the USB-C Cable and connect it to the USB-C Power Supply to power Duo.

SD Card Slot
Used for updating Duo, game saves, Memories and Library support (up to 1TB).

Headphone Jack
Connect headphones or external speakers via the 3.5mm stereo output jack.

Volume Wheel
Rotate to adjust the volume level for the headphone jack.

Compatible Media

— Official NEC-manufactured PCE HuCards and TurboChips
— Official SuperGrafx HuCards
— Official TurboGrafx/Duo CD-ROMs
— NEC System Cards & Games Express Green & Blue Cards
— CD audio & CD+G playback with appropriate System Card

Compatible Original Peripherals

— PCE 2-button & 6-button Controllers & Multitaps
— TurboGrafx-16 Controllers & TurboTap with DIN to mini-DIN Converter
— Memory Base 128
— PCE Mouse
— Coconuts Pachinko Controller
— Dempa XE-1AP Analog Controller with X-HE3 converter

Original Controllers and Peripherals

Duo supports original controllers via the miniDIN connector. Additionally, an original Multitap device can be connected here for up to five player support with original controllers. Duo does not support USB hubs as well as mixing a Multitap device with wireless or USB controllers. Some special models of original controllers may require using “Passthrough Mode,” which can be enabled via the OS menu Settings>Duo>System>Input.

Wired Controllers

Plug any hardwired USB controller that Duo supports into a USB port and it will instantly connect to Duo. You can also use and charge any supported wireless controller as a wired USB controller by connecting it with a USB cable.

Game Saves and SD Cards

Duo natively supports features that were originally only possible with an array of external hardware and accessories (more details on page 8). Duo requires a dedicated SD card (FAT32 or exFAT up to 1TB) for game saves and full feature support.

OS Menu

Play HuCard
Run a HuCard in the card slot (only appears if a HuCard is inserted).

Play CD
Run a CD-ROM in the CD drive (only appears if a CD is inserted).

Library (requires SD card)
View your game collection and time played.

Memories (requires SD card)
Access HuCard Save States (coming in a future OS update) & Screenshots.

Controllers
Pair supported Bluetooth and 2.4g controllers, change controller order, and reset pairings.

Settings
Adjust Duo and system specific settings.

About
View information about Duo including OS version and the changelog.

Settings – Duo – HDMI

Sync Mode
Buffering modes on Duo support the conversion of the system video signal to modern HDMI video.

Zero Delay (60Hz) – Provides lag-free HDMI output. This mode will not work with 50Hz HDMI modes.

Fully Buffered – Buffers a full frame in order to maintain sync with the display's native refresh rate (60Hz or 50Hz) and eliminates tearing.

Single Buffered – Buffers a portion of a frame with reduced latency relative to Fully Buffered mode, but will show a mismatched frame retrace line (tearing) visible once every several seconds.

Limit RGB Range
Enable for compatabilty with some capture devices.

Settings – Duo – Headphones

High Impedance – Enable if your headphone impedance is rated in hundreds of ohms. Note that this will noticeably increase the volume.

Settings – Duo – Eject CD

Ejects the CD. Unavailable if a CD is not inserted.

Settings – Duo – Global Reset

Global Reset will restore factory settings and erase all controller pairings from Duo if confirmed. Library and Memories will not be affected.

Duo – System – Display Modes

Analogue TG16
Analogue pixel perfect display mode.

Sharpness – Set from 0-3 progressively increasing sharpness with 3 providing razor-sharp pixels.

Size – Adjust the screen resolution as you like from as low as 512×224 to 1920×1200. The default provides a full screen 4:3 aspect ratio. Quickly set a vertical integer scale and disable Y interpolation (sharpness must be set to 3) by selecting 3x, 4x or 5x and can be used in combination with Show Overscan.

CRT Trinitron
A recreation of Sony's line of aperture-grille-based CRTs. This initial CRT Original Display Mode is not based on a hyper specific model but on the fundamental underlying technology of Sony's Trinitron line of CRTs.

Med vs. Fine Aperture Grille – Adjusts the phosphor density simulating different TVL values.

Soft vs. Hard Edges – Adjusts scanline horizontal transitions (slew rate) for a natural looking blending of dithered art or a sharper appearance.

Heavy Scanlines – Enhances scanline depth.

Turbo Express
Recreates the original LCD screen of the Turbo Express Handheld Console.

PC Engine LT
Recreates the original LCD screen of the PCE LT Portable Console.

Duo – System – Video

Color Palettes
RGB – Native RGB color output pulled directly from the PCE VDP.

Composite – Recreates the palette of an original PCE composite output.

Show Overscan
When enabled the display format will show graphics normally hidden by a CRT bezel.

Duo – System – Audio

HuCard Audio
Enables extra audio generated from a HuCard, such as CD (stereo) and ADPCM, and to set its level relative to the volume generated by Duo.

Duo – System – Region

By default Duo auto detects the game region. Manually set the region by selecting USA or Japan. Remember to set the region appropriate for the game if using Manual selection.

Duo – System – SuperGrafx

By default Duo auto detects SuperGrafx games and enhancements. If set manually during game play, restart the game for changes to take effect. Note you can use this option to downgrade or upgrade certain games with SuperGrafx support.

Duo – System – CD-ROM²

By default Duo auto detects appropriate versions of CD-ROM² for each respective game. If set manually during game play, restart the game for changes to take effect. Note you may use this option to enable Arcade CD-ROM² enhancements supported by certain Super CD-ROM² games and some peripherals may require disabling CD-ROM².

Duo – System – Input

By default Duo auto detects support for 2-button or 6-button controllers. Note most PCE games are not compatible with 6-button controllers when set to 6-button mode.

Passthrough Mode
Required when using special original miniDIN peripherals like the Memory Base 128, PCE Mouse, Pachinko controller and the Micomsoft XE-1AP analog stick. It is recommended for correct turbo button behavior of some original PCE controllers. After starting a game OS Menu can not be accessed or used while using passthrough mode.

Duo – System – Reset to Defaults

Resets all System settings to their defaults. All changes to these settings will be lost.

Settings – Analogue OS

Startup Action
OS Menu – Duo lands into Analogue OS menu upon power-up.

HuCard/CD – Duo plays an inserted HuCard first on power-up, followed by an inserted CD if a HuCard is not present.

CD/HuCard – Duo plays an inserted CD on power-up, followed by an inserted HuCard if a CD is not present.

Set Date/Time
Set the date and time used for Library and Memories.

Settings – Library

Auto add to Library – Analogue OS adds games to Library every time you play a new game.

Library Browser – View all games in archival detail.

Settings – Memories

Enable Quick Load – Quick Load allows you to easily load the most recently used Save State during gameplay without opening the Menu. To use Quick Load during gameplay hold Home then press Down on the D-pad. With original controllers hold Down on the D-pad then press Select.

Enable Quick Menu – Quick Menu allows you to easily access your Memories list during gameplay without navigating the Menu. To use Quick Menu during gameplay hold Select or Home and Down on the D-pad together for 1 second.

Thumbnail View – A thumbnail image of Save State will be shown in the menu.

Sleep and Wake

Sleep – Quickly press Duo Power Button to suspend HuCard game play and put Duo into sleep mode. A purple Power LED indicates Duo is in Sleep Mode.

Wake – Quickly press Duo Power Button to Wake Duo and resume HuCard game play where you left off.

Save States

Save States allow saving and loading virtually any moment of HuCard game play even if Duo has been powered off and on again. Past Save States are filtered by the game currently running. Create Save States by holding Home then pressing Up on the D-pad. With original controllers hold Up on the D-pad then press Select.

Using Ten no Koe Bank (天の声バンク)

Originally, HuCard games could only save by implementing passwords. The CD-ROM² upgrade and later PCE Duo systems with a built in Super CD-ROM² added a dedicated 2KiB RAM for saving CD games and certain HuCard games. HuCard-only systems could still save to this memory by attaching a Ten no Koe 2 (天の声2) or Backup Booster backup device.

Normally, games had to contend with other games for storage space within this 2KiB RAM. Analogue Duo provides an exclusive 2KiB to any game which accesses this RAM and will save backups of this RAM to SD card.

If you wish to use a Ten no Koe Bank (天の声バンク) card to transfer backup RAM data from Analogue Duo to an original system, follow this procedure:

1. Insert the Ten no Koe Bank card in Duo, then Play Game followed by Quit Game.

2. Remove the SD Card from Duo, insert it into a PC or Mac and navigate to \Saves.

3. Note the name given to the save file for the Ten no Koe Bank card and delete the file.

4. Find the save file of the game of the game you want to transfer to the Ten no Koe Bank card and rename the file to the filename given for the Ten no Koe Bank card.

5. Reinsert the SD card in Duo, play the Ten no Koe Bank card again and copy the Backup RAM to the Ten no Koe Bank card using the card's built-in copying program.

Note that Ten no Koe Bank cards contain battery backed RAM and the original batteries may be expired preventing normal function.

Using Memory Base 128

Alternatively, Memory Base 128 has user-replaceable batteries, but unlike the Ten no Koe Bank card requires Super CD-ROM² or Arcade CD-ROM² enhanced systems on both ends of the transfer. The Memory Base 128 can backup the complete contents of the internal 2KiB save RAM.

The procedure is similar:

1. Find the name of the save file of the game whose save content you wish to transfer ("game 1").

2. Find the name of the save file of the game which will perform the transfer ("game 2").

3. Relocate the save file for game 2 temporarily and rename the game save of game 1 to the name of game 2.

4. Play game 2 and run its copying program.

Note that not all games may allow the transfer of the entire internal 2K backup memory to the Memory Base 128's memory and may only allow their own games to be transferred. Private eye dol is one game which allows a full backup of the internal memory to be made.

Using Original System Cards

Analogue Duo supports original NEC System Cards as well as Games Express Green & Blue Cards. Supported features include CD audio, CD+G playback, and the original CD BIOS versions.

1. Insert the original System Card into the HuCard slot. If recognized, the OS menu will display "Using System Card".

2. Insert and play the CD. The original System Card will be used automatically.

Supported Controllers – Duo OS v1.0

- Switch Pro (and variants)
- Switch Joycon
- WiiU Pro
- Wiimote
- Stadia
- Xbox 360 & Xbox One
- PS3, PS4 & PS5
- Turbo mini
- KingKong 2 Pro
- 2.4g N30
- 2.4g N30 (Noir)
- 2.4g SN30
- 2.4g SN30 Classic
- 2.4g SF30
- 2.4g M30
- 2.4g M30 Classic
- 2.4g PCE
- 8BitDo Pro 2
- 8BitDo Zero 2
- 8BitDo Lite
- 8BitDo Lite 2
- 8BitDo M30
- 8BitDo SN30
- 8BitDo SN30 Pro
- 8BitDo SN30 Pro+
- 8BitDo N30 Pro
- 8BitDo N30 Pro 2
- 8BitDo Arcade (BT & USB only)
- 8BitDo NeoGeo
- 8BitDo Micro

Pairing controllers to Duo

1. Press the pairing button on the left side of Duo (required for 2.4g controllers) or select “Pair Controller” from the OS menu. A Controller LED indicator will start to blink. Duo is now in Pairing mode.
2. Put your controller in pairing mode by holding the pairing button.
3. Your controller will pair to Duo. Controller LED indicator will become solid when a controller is paired or wired controller connected to a USB port.
4. Pair additional controllers by repeating the above steps.

A 5th controller can be connected via the miniDIN or by using an original Multitap device. A controller connected via the miniDIN will always be assigned to Player 1. Duo does not support USB hubs as well as mixing a Multitap device with wireless or USB controllers.

8BitDo Bluetooth controllers need to be in X-Input mode before pairing.

8BitDo 2.4g controllers require specific firmware to work with Duo. This will disable compatibility with included original and USB controller port receivers unless reverted. The firmware update can be reverted by the same method indicated to update the firmware. Please visit support.8bitdo.com/analogue/Dock for firmware and instructions.

Force Disc Eject

Method 1: Unplug USB power from Duo along with any connected USB devices then plug power back in. Power on Duo while repeatedly pressing the CD eject button for 3-4 seconds to eject the disc.

Method 2: On the root of your SD card create a blank .txt file and name it “duo_eject.txt“ (case sensitive). Unplug USB power from Duo along with any connected USB devices. Insert the SD card with the new file. Plug in USB power and power on Duo to eject the disc automatically. If the disc does not eject on the first try please try again by repeating the above steps. Be sure to use the included USB-C cable and Power Supply. Delete the newly created file from the SD card before continuing to use Duo.

Factory Resetting Duo

Resetting will restore factory settings and erase all controller pairings from the Duo. Library and Memories will not be affected. Select and confirm “Global Reset” from OS menu Settings>Duo.

Manually Resetting Controller Pairings: Plug the USB-C power into Duo while holding the pairing button. Wait until the Controller LEDs begin to flash green and release the pairing button before the green LEDs turn off. If successful, all four Controller LEDs will flash red.

Controller Mappings

Main system(s) default button mapping across compatible game controllers.
All 8BitDo Bluetooth controllers need to be in X-Input mode before pairing.

	Menu	I	II	RUN	SE
8BitDo Controllers					
Wireless 2.4g					
N30	Home	A	B	ST	SE
N30 Noir	Home	A	B	ST	SE
SN30	↓ + SE	A	B	ST	SE
SN30 Classic	↓ + SE	A	B	ST	SE
SF30	↓ + SE	A	B	ST	SE
M30	Heart	B	A	ST	-
M30 Classic	Heart	B	A	ST	-
PCE	Heart	I	II	RN	SE
Wireless Bluetooth					
Pro 2	Heart	A	B	ST	SE
Zero 2	↓ + SE	A	B	ST	SE
Lite	Heart	A	B	+	-
Lite 2	Heart	A	B	+	-
M30	Heart	B	A	ST	-
SN30	↓ + SE	A	B	ST	SE
SN30 Pro	Heart	A	B	ST	SE
SN30 Pro+	Heart	A	B	ST	SE
N30 Pro	Home	A	B	ST	SE
N30 Pro 2	Home	A	B	ST	SE
Arcade Stick	Heart	A	B	ST	SE
NeoGeo	Heart	B	A	ST	SE
Micro	Heart	A	B	+	-

	Menu	I	II	RUN	SE
Non 8BitDo Controllers					
Wired					
Xbox 360	Xbox	B	A	ST	BK
Turbo mini	↓ + SE	I	II	RN	SE
Wireless					
Switch Pro	Home	A	B	+	-
Switch Joycon	Home	X	A	+ / -	Joy in
WiiU Pro	Home	A	B	+	-
Wiimote	Home	2	1	+	-
Stadia	Stadia	B	A	☰	...
PS3	PS	O	X	ST	SE
PS4	PS	O	X	Opt.	Share
PS5	PS	O	X	Opt.	Share
Xbox One	Xbox	B	A	Menu	View
KingKing Pro 2	Home	A	B	+	-



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