iCode Cart2600 Ultimate SE H1

Read, identify and back up your Atari 2600 cartridges — no screen needed. Insert a cartridge and the Cart2600 Ultimate SE reads it twice, verifies the read, identifies the game from its built-in database and saves it to the SD card as a ready-to-play ROM, telling you each result out loud. Connected to a computer, its two controller ports turn your Atari joysticks, paddles, keypads and driving controllers into USB gamepads, and the SD card opens as a drive so you can copy your ROMs off.



iCode Cart2600 Ultimate SE

Getting Started

Step 1. Insert a microSD card (FAT32) — the SE saves every cartridge you read onto it.

Step 2. Connect power with a USB-C cable. A short startup tune plays.

Step 3. Push a cartridge into the slot on top. The SE says **"Reading cartridge."**, reads it, and tells you the result — for example **"Cartridge saved."**

Step 4. Pull the cartridge out (**"No cartridge."**) and insert the next one.

Know Your Device

Control	What it does
START (yellow)	Read the inserted cartridge again
SELECT (blue), tap	Repeat the last result
SELECT (blue), hold 1½ seconds	Next USB mode (see *USB Gamepad*); the SE says the mode and restarts
MENU (black), tap	Volume: 25 → 50 → 75 → 100 %, spoken at the new level
MENU (black), hold 1 second	USB Drive on — hold again for off
MENU held while connecting power	Firmware update mode (see *Firmware Updates*)

You'll also find the cartridge slot on top, two Atari controller ports (Port 1 and Port 2) on the front, a microSD card slot, a speaker, and a USB-C port for power, the USB gamepads and firmware updates.

Reading Cartridges

Insert a cartridge, label facing the front, and push it firmly into the slot. About half a second later the SE says **"Reading cartridge."**, reads the cartridge twice, compares the two reads and checks that the data looks like a valid game. A cartridge already in the slot at power-on is read after the startup tune.

Every good read is saved to the SD card's `2600` folder, named after the game — for example `Combat.a26`. A cartridge the database doesn't know is saved as `Cart_<CRC>.a26`. An existing file is never overwritten.

You hear	Meaning
"Reading cartridge."	A cartridge was inserted (or START was pressed) and is being read
"Cartridge saved."	Read, verified and saved to the SD card
"Already saved."	This exact cartridge is already on the SD card — nothing was added
"Unknown cartridge."	Read fine, but the game isn't in the database; it is saved as `Cart_<CRC>.a26`
"Read failed. Please reseat the cartridge."	The two reads didn't match or the data isn't valid — clean the contacts, reseat it and press **START**
"No cartridge."	The cartridge was removed, or **START** was pressed with the slot empty
"No SD card."	No card was found (or it can't be written) — the cartridge was read but not saved
"SD card full."	The card ran out of space; the file was not saved

Press **SELECT** at any time to hear the last result again.

Supported cartridges: standard 2K, 4K and 8K (F8) cartridges — which covers most of the 2600 library. 16K and larger cartridges can't be read yet. The built-in database identifies over 3,600 titles.

Your ROM Library

The saved `.a26` files are standard Atari 2600 ROMs that play in emulators such as Stella on a computer. To copy them off:

• **USB Drive:** connect the SE to a computer with a USB-C data cable and hold **MENU** for one second (**"USB drive on."**). The SD card appears on the computer as a drive. When you're done, hold **MENU** again — the SE waits for copying to finish, closes the drive (**"USB drive off."**) and restarts.

• **Card reader:** switch the SE off, take the microSD card out and use any card reader.

USB Gamepad

Connected to a computer, the SE's two controller ports appear as two USB gamepads, ready for emulators and PC games. Each port picks joystick, paddles, keypad or driving by itself, from what is plugged in (a driving controller once you turn it).

Controller	Gamepad
Joystick	D-pad and left stick; fire = button 1
Paddles	First paddle of the pair = left stick X, second = left stick Y; their fire buttons = buttons 1 and 2
Keypad	Its 12 keys = buttons 1–12 (1 2 3 / 4 5 6 / 7 8 9 / * 0 #)
Driving	The wheel = left stick X (centred at start, stops at each end); fire = button 1
SE **START** / **SELECT**	Start / Select on the Port 1 gamepad

When a port changes, the SE says **"Port set to"** and the controller: **Joystick**, **Paddles**, **Keypad** or **Driving**.

USB mode — how the gamepads appear to the computer or console. Hold **SELECT** for 1½ seconds to step to the next mode; the SE says its name and restarts in it:

USB mode	Appears as
Standard (default)	iCode gamepad — best for computers and iCodeHub
Classic	Generic USB joystick
Nintendo	Nintendo Switch–compatible controller
Legacy	Older generic gamepad, for software that doesn't recognize Standard
iOS	iPhone / iPad–compatible controller
Classic 2	Controller for the Atari Gamestation Pro

START and **SELECT** are always sent to the computer as the gamepad's Start and Select. While connected to a computer with the slot empty, **START** doesn't say "No cartridge."

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iCodeHub

Connect the SE to a computer and open the **iCodeHub** website in Chrome or Edge to identify the device, try your controllers in its Live Test, and install firmware updates with one click. Use USB mode **Standard** when connecting to iCodeHub.

Firmware Updates

With iCodeHub (easiest): connect the SE with a USB-C cable, open iCodeHub and follow its firmware update steps.

By hand:

Step 1. Download the latest firmware file (`.uf2`) for the SE.

Step 2. Hold **MENU** while connecting the USB-C cable to your computer. The SE appears on the computer as a USB drive.

Step 3. Copy the `.uf2` file onto that drive. The SE updates and restarts by itself.

One update file contains both the firmware and the game database. Your SD card is never touched. Volume and USB mode return to their defaults after an update.

Setting Up the SD Card

Use a microSD card formatted as **FAT32**, inserted before switching on. The SE creates the `2600` folder on a new card and saves every cartridge there.

Troubleshooting

Problem	Solution
"Read failed"	Clean the cartridge contacts, push it in fully and press **START**. 16K and larger cartridges can't be read yet.
Nothing happens when a cartridge goes in	Push it in fully; it is read about half a second after it seats. Press **START** to read it again.
"No SD card."	Insert the card fully and switch the SE off and on. Make sure it is formatted FAT32.
No sound	The volume may be low — tap **MENU** to step it up.
Computer doesn't see the gamepads or the drive	Use a USB-C data cable (not charge-only) and USB mode **Standard**.
iCodeHub doesn't find the SE	Set USB mode **Standard** (hold **SELECT**) and use Chrome or Edge.

Specifications

Specification	Details
Processor	RP2350B dual-core
Cartridge slot	Atari 2600 (2K, 4K, 8K F8 cartridges)
Controller ports	2 × Atari DB-9: joysticks, paddles, keypads and driving controllers as USB gamepads
Controls	MENU, START, SELECT
Feedback	Spoken results through the built-in speaker
Storage	microSD (FAT32)
USB	USB-C: power, 2 × USB gamepad (6 modes), USB Drive, iCodeHub firmware updates
Game database	3,600+ Atari 2600 titles

Want to play your cartridges, test controllers on screen and play arcade games? See the Cart2600 Ultimate.