

AI-04710 HP Envy 17t-k000 Information

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I'm looking for information regarding an hp 17" laptop. What is the model? What is the power supply? Imagine it's the end of the world scenario and I only have an m18v Milwaukee battery and ryobi 40v and a few 18650 lifepo4 batteries, how to revive the notebook. I don't have a power connector.

HP ENVY 17t-k000 — Parts Summary

Laptop identification

Item	Confirmed detail
Model	HP ENVY 17t-k000
Product number	G0U21AV
Regulatory model	TPN-Q141
Manufacturing era	Approximately 2014

Power supply

Part	Specification / Part number
AC adapter output	19.5V DC – 4.62A
Power rating	90W
Connector	HP 4.5mm × 3.0mm blue-tip Smart-pin
Common adapter model	TPN-DA18 / ADP-90WH D
Common HP part numbers	710412-001, 741727-001, 937532-850, H6Y90AA

Buy/search:

 HP 90W 19.5V 4.62A 4.5x3.0mm blue tip smart pin charger

SSD options

Part	Specification	Recommendation
2.5-inch SATA SSD	7mm, SATA III	Safest upgrade
M.2 SSD	2280 PCIe/NVMe	Compatible option, verify slot
M.2 SATA SSD	2280 SATA	Listed configuration option

SSD models mentioned

SSD	Type
Crucial MX500 1TB	2.5-inch SATA — recommended safest choice
Samsung 870 EVO	2.5-inch SATA
Kingston KC600	2.5-inch SATA
WD Blue SA510	2.5-inch SATA
WD Blue SN570	M.2 2280 NVMe — experimental/faster option

Samsung 970 EVO Plus	M.2 2280 NVMe
Crucial P3	M.2 2280 NVMe
Kingston NV2	M.2 2280 NVMe

Emergency power project

Part	Specification
Battery source	Milwaukee M18
Converter	Buck-boost DC-DC , input covering approximately 15–21V
Converter output	19.5V DC
Converter capacity	100W minimum; 120W+ preferred
Output connector	HP 4.5 × 3.0mm Smart-pin
Fuse	DC fuse near battery
Ryobi 40V	Requires a 40–42V-rated buck converter ; not direct
LiFePO ₄ cells	Six cells in series ≈19.2V nominal, but require proper BMS and regulation

My recommended shopping list

- 1. **Crucial MX500 1TB, 2.5-inch SATA SSD**
- 2. **HP 90W, 19.5V, 4.62A Smart AC adapter** — if you find one
- 3. **Milwaukee M18 battery adapter**
- 4. **120W buck-boost converter**, adjustable to 19.5V
- 5. **HP 4.5 × 3.0mm blue-tip Smart-pin pigtail**
- 6. **DC fuse holder and appropriate fuse**

Most important numbers to retain:
HP ENVY 17t-k000 · G0U21AV · 19.5V · 4.62A · 90W · 4.5 × 3.0mm Smart-pin.

Yes—this looks like an older **HP 17-inch Pavilion**, and the battery label gives us a very useful starting point. Your “end of the world” power situation is also workable, but the important part is **converting the battery voltage correctly rather than connecting a tool battery directly to the laptop.**

1. What HP laptop is this?

Identification from your photographs

Evidence	What it tells us
HP ProtectSmart	HP consumer notebook family
17-inch chassis	Consistent with the Pavilion 17 series
Battery replacement: 756743-001	Strongly associated with HP Pavilion 17-f models

Original battery HP part: 756478-241	Another part number associated with this battery family
Battery: 14.8V, approximately 2,700mAh	Four-cell lithium-ion battery
Manufacturing date: 2014/07	Consistent with the 2014-era Pavilion 17-f generation

My best identification: HP Pavilion 17-f series, probably a 17-f1xx variant.

I would **not claim the exact submodel yet**. It could be something such as the **17-f114dx**, but the photographs do not clearly expose the laptop's product-number label. The battery part number is used across multiple HP models, so it cannot uniquely identify the exact submodel. HP documentation confirms the 756743-001 battery specification, and HP support discussions associate it with models including the Pavilion 17-f114dx. [\(HP Support\)](#)

How to get the exact model

Look for a label:

- Underneath the laptop
- Inside the battery compartment
- On the bottom near the RAM/service panel
- Or, if it boots, press **Fn + Esc** to open HP System Information

Look for something like:

Product: 17-f114dx
Product No.: J7... / E...
Model: HP Pavilion 17 Notebook PC

The **product number**, rather than just "HP Pavilion 17," is what HP uses to determine the exact parts.

2. What power supply does it use?

The likely charger is an older HP **Smart AC adapter with a blue-tip barrel connector**.

Likely specification

Specification	Likely requirement
Output voltage	19.5V DC
Connector	4.5mm outer × 3.0mm inner, center smart pin
Polarity	Center positive
Likely wattage	65W
Typical current rating	3.33A
Common HP adapter part	710412-001 or equivalent, depending on submodel

HP's 65W adapter documentation specifies a 4.5mm connector and 18.5V output for one adapter variant, while Pavilion 17-f replacement listings commonly specify **19.5V, 3.33A, 65W, 4.5 × 3.0mm**. This is why the **exact laptop product number and**

original adapter specification matter. (HP)

For your likely Pavilion 17-f, I would initially look for:

- HP-compatible 65W Smart AC Adapter
- Output: 19.5V – 3.33A
- Tip: 4.5mm × 3.0mm blue-tip smart pin

A 45W adapter may be listed for some configurations, but I would favor a correctly matched **65W unit** unless the laptop's label specifies otherwise.

3. End-of-the-world scenario: Can you power it from Milwaukee M18 or Ryobi 40V?

Yes. The M18 is the much better candidate.

The laptop does not need 120V AC specifically. It needs approximately **19.5V regulated DC** at its DC input.

The key is:

- Tool battery → DC-DC voltage converter → 19.5V regulated output → HP laptop
- Not:
- ✗ Tool battery → laptop directly

4. Best emergency power options

Option A — Milwaukee M18 battery ★ Best choice

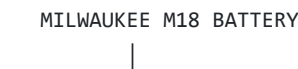
A Milwaukee M18 battery is nominally **18V**, which is very close to the laptop's required **19.5V**.

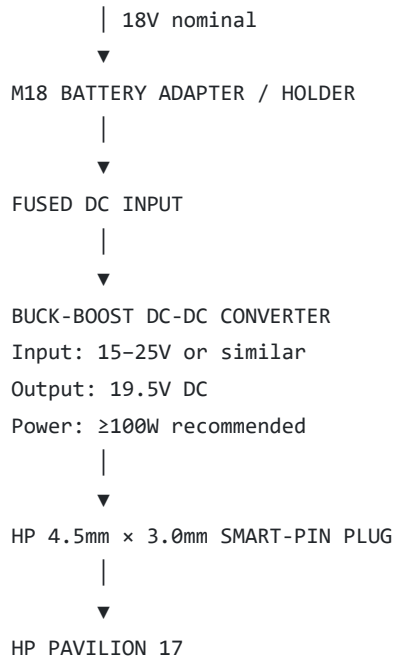
Electrical relationship

Item	Voltage
M18 nominal	18V
M18 fully charged	Approximately 20V
HP laptop input	Approximately 19.5V

That means you need a **regulated buck-boost converter**.

Recommended architecture





Converter requirements

Look for a converter with:

- **Input:** Must cover the entire M18 voltage range
- **Output:** Adjustable, set to **19.5V**
- **Power:** At least **65W continuous**
- **Recommended rating: 100W or greater**
- **Input fuse**
- Overcurrent protection
- Short-circuit protection
- Adequate cooling

At 65W output, the converter may draw roughly **4–5A from an 18V battery**, depending on efficiency and laptop load.

Do not assume an inexpensive “12V-to-19V laptop booster” is suitable. Many are designed for automotive 12V input and cannot tolerate a fully charged M18 battery.

Important M18 detail

Use a **proper M18 battery adapter/holder**, not loose wires shoved into the battery terminals. A proper adapter gives you a mechanically secure connection and makes it easier to add a fuse and switch.

5. Option B — Ryobi 40V battery

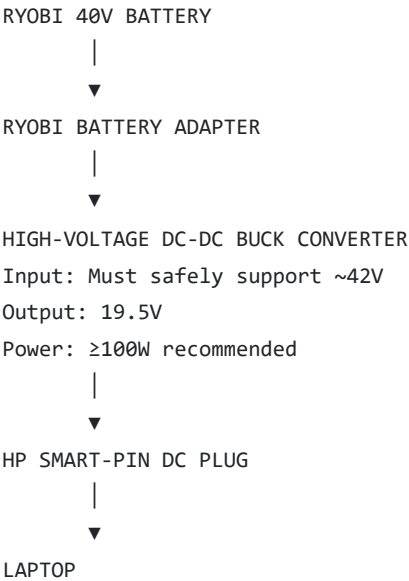
Technically possible, but much less attractive.

A Ryobi 40V battery is approximately:

- **36V nominal**
- Around **40–42V when fully charged**, depending on the battery and charge state

That is **far too high** for the HP laptop.

Required architecture



Why I would not choose it first

- Higher input voltage
- More demanding converter requirements
- Greater risk from incorrect wiring
- Need a converter rated for the **fully charged voltage**, not merely “40V”
- More energy available in the battery, meaning a wiring mistake can be serious

Never connect the Ryobi 40V battery directly to the laptop. It could destroy the laptop's input circuitry.

6. What about your 18650 LiFePO₄ batteries?

There is an important terminology issue here.

18650 describes the physical size—not the chemistry

Battery type	Nominal voltage	Full-charge voltage
Standard 18650 Li-ion	3.6–3.7V	4.2V
LiFePO₄ cylindrical cell	3.2V	3.65V

If yours are genuinely **18650 LiFePO₄**, they are **not interchangeable** with ordinary 18650 lithium-ion cells.

To create approximately 19.5V

For LiFePO₄:

6 cells in series = 19.2V nominal
6 cells fully charged = 21.9V

That is close enough **only with a suitable regulated converter**.

But there are major requirements:

- All cells must be the **same chemistry**

- Same type and capacity
- Properly matched and balanced
- Correct **LiFePO₄ BMS**
- Correct charger
- Proper insulation and fusing
- No mixing old and unknown cells

Do not build a series pack from random loose 18650 cells just to test the laptop. A battery pack assembled incorrectly can cause a fire or cell failure.

For your situation, I would rank the options:

Rank	Power source	Recommendation
👉1	Milwaukee M18 + buck-boost converter	Best practical emergency solution
👉2	Proper 6S LiFePO₄ pack + converter	Possible, but requires battery expertise
👉3	Ryobi 40V + high-voltage buck converter	Possible, but unnecessarily complex
❌	Direct battery connection	Do not do this

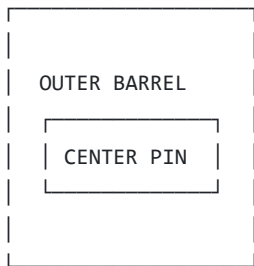
7. The real obstacle: You don't have the HP power connector

This is the part that needs attention.

The laptop's normal input is likely an **HP 4.5mm × 3.0mm smart-pin barrel connector**.

It has three electrical contacts:

HP SMART-PIN PLUG



Outer barrel = NEGATIVE
Inner barrel = POSITIVE
Center pin = HP identification / smart signal

Why the center pin matters

HP Smart adapters commonly use the center pin to identify the adapter and communicate its capability to the laptop.

Without the center-pin connection:

- The laptop **may still power on**
- It may refuse to charge the battery

- It may display an “adapter not recognized” warning
- It may limit CPU performance
- It may refuse to operate normally on some models

So simply applying 19.5V to the two main contacts is **not guaranteed to work as a complete charger replacement**.

8. Three ways to solve the connector problem

Method 1 — Salvage an HP barrel plug ★ Recommended

You don't need a complete power supply. You need the correct **4.5mm × 3.0mm HP smart-pin plug**.

Possible sources:

- Dead HP laptop charger
- Broken HP power adapter
- Old HP docking station
- Laptop DC plug pigtail
- Replacement HP DC power connector cable

Search terms:

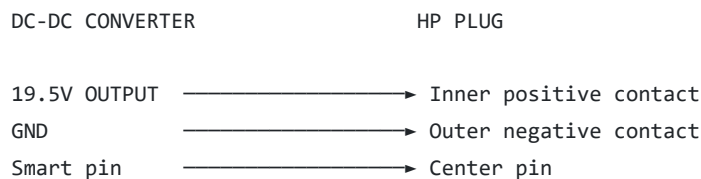
HP 4.5mm 3.0mm blue tip smart pin DC plug pigtail

or:

HP 4.5 x 3.0mm smart pin laptop power connector

A pigtail with wires is ideal because you can connect it to your converter.

Wiring concept



But verify the plug's wiring with a multimeter. Do not trust wire colors.

Method 2 — Salvage the laptop's own DC jack

If you have no external connector, the laptop itself may still have its original DC jack and internal wiring.

You could potentially:

1. Remove the bottom cover.
2. Locate the DC-in jack or DC-in cable.
3. Identify the positive, negative, and center-pin connections.
4. Connect a regulated 19.5V supply to the appropriate input wiring.

However, this is **not my first recommendation** because:

- The jack may be mounted on a small board or cable.
- The center-pin circuit may need to remain intact.

- Accidentally reversing polarity can destroy the motherboard.
- A short at the battery/DC input can damage the power circuitry.

If you go this route, **photograph the DC jack and its wiring first**. I can help identify the contacts before you apply power.

Method 3 — Power through the battery contacts?

This is the tempting emergency idea, but I would **not recommend it as the first experiment**.

The laptop battery is approximately **14.8V nominal**, while the laptop's AC input is approximately **19.5V**. The battery interface is not simply a raw power input. It includes:

- Battery management electronics
- Charging circuitry
- Temperature sensing
- Battery identification
- Protection circuitry

The laptop is designed to receive power through the battery's controlled interface, not necessarily to accept an arbitrary external voltage there.

- **Do not inject 19.5V into the battery contacts.**
- **Do not inject 18V from the M18 directly into the battery contacts.**

If the goal is emergency operation, the **DC-in jack is the correct power-entry point**.

9. My recommended “survival laptop” build

Given your Milwaukee and Ryobi ecosystem, I would build this:

Parts list

Part	Specification
Battery source	Milwaukee M18
Battery adapter	M18 battery-to-wire adapter
Fuse	Appropriately sized DC fuse near battery
Converter	Buck-boost, approximately 100W or higher
Input range	Must cover the full M18 voltage range
Output	Adjustable to 19.5V DC
Output connector	HP 4.5 × 3.0mm smart-pin
Enclosure	Insulated project box
Meter	DC voltage/current display, optional but useful
Switch	DC-rated switch, optional

Bench-test sequence

Do not connect the laptop until all of these are verified.

1. Identify the exact laptop model.
2. Obtain the correct HP plug or DC-in connector.
3. Build the M18 adapter and fuse.
4. Set the converter output to **19.5V with no laptop attached**.
5. Verify output polarity with a multimeter.
6. Verify voltage remains stable under a suitable test load.
7. Confirm the plug's positive, negative, and smart-pin contacts.
8. Connect the laptop **without relying on the internal battery as the first test**.
9. Check for abnormal heat, smell, sparks, or excessive current.
10. Only then test battery charging.

Do not adjust the converter while it is connected to the laptop.

10. A realistic runtime estimate

Your HP Pavilion 17-f is an older laptop, so its consumption may be relatively modest during light use.

Assume:

- Laptop average consumption: **25–40W**
- M18 battery: approximately **72–144Wh**, depending on whether it is a 4Ah, 5Ah, 8Ah, or larger pack
- Converter efficiency: approximately **85–90%**

Example using a **5.0Ah M18 battery**:

18V × 5Ah = 90Wh nominal battery energy

90Wh × 0.85 efficiency = 76.5Wh usable output

At 30W laptop load:

76.5Wh ÷ 30W ≈ 2.55 hours

Approximate M18 runtime

M18 battery	Light laptop use, rough estimate
2.0Ah	~1 hour
4.0Ah	~2 hours
5.0Ah	~2.5 hours
8.0Ah	~4 hours
12.0Ah	~6 hours

Actual runtime depends heavily on screen brightness, CPU load, battery condition, and whether the laptop is charging its internal battery.

My conclusion

Your laptop is most likely an HP Pavilion 17-f-series notebook from around 2014. The battery is a **756743-001 / 756478-241 family**, rated around **14.8V**.

The most practical emergency revival path is:

Milwaukee M18 → proper battery adapter → fused buck-boost converter → regulated 19.5V → HP 4.5 × 3.0mm smart-pin connector → laptop

Do not use the Ryobi 40V directly, and do not connect any of the batteries directly to the laptop.

The next photograph I would want is **the bottom of the laptop, especially the product-number label and the DC charging jack**. With that, we can identify the exact model, confirm whether it needs 45W, 65W, or another adapter, and design the connector wiring much more confidently.

That label solves the identification. My earlier answer was close on the family but incorrect about the exact model and under-rated the power supply. This is an **HP ENVY 17t-k000**, not a Pavilion 17-f.

1. Exact laptop identification

The label in your photograph reads:

Label field	Confirmed information
Brand / family	HP ENVY
Model	17t-k000
Product number	G0U21AV
Regulatory model number (RMN)	TPN-Q141
Input requirement	19.5V DC – 4.62A
Required power	90W

The **G0U21AV** product number is independently associated with the **HP ENVY 17t-k000**, including configurations with an Intel Core i7-4710HQ. ([HP Support Community](#))

2. Correct power supply

Your laptop's label explicitly says:

INPUT: 19.5Vdc = 4.62A

Therefore:

Correct adapter specification

Specification	Correct value
Output voltage	19.5V DC
Output current	4.62A
Power	90W
Connector	4.5mm × 3.0mm HP Smart-pin barrel
Polarity	Center positive
Common compatible adapter	HP TPN-DA18 / ADP-90WH D
Other commonly listed HP part numbers	710412-001, 741727-001, 937532-850, H6Y90AA

The 90W, 19.5V, 4.62A specification and 4.5 × 3.0mm connector are listed for the ENVY 17-k000 by multiple replacement-adapter references. ([Battdepot United States](#))

Correction to my previous answer

I previously suggested a likely **65W / 3.33A** adapter. **That was not correct for this specific machine.** Your label is authoritative: use a **90W-capable, 19.5V adapter**.

A 65W supply may be insufficient, especially under load or while charging the internal battery.

3. Your emergency-power project is now much clearer

The laptop requires:

- 19.5V DC
- 4.62A maximum rated input
- 90W power supply

That makes the **Milwaukee M18 route even more reasonable**, because its voltage is close to the laptop's required voltage.

But there is one important distinction:

The laptop needs 19.5V—not merely “something around 18V.”

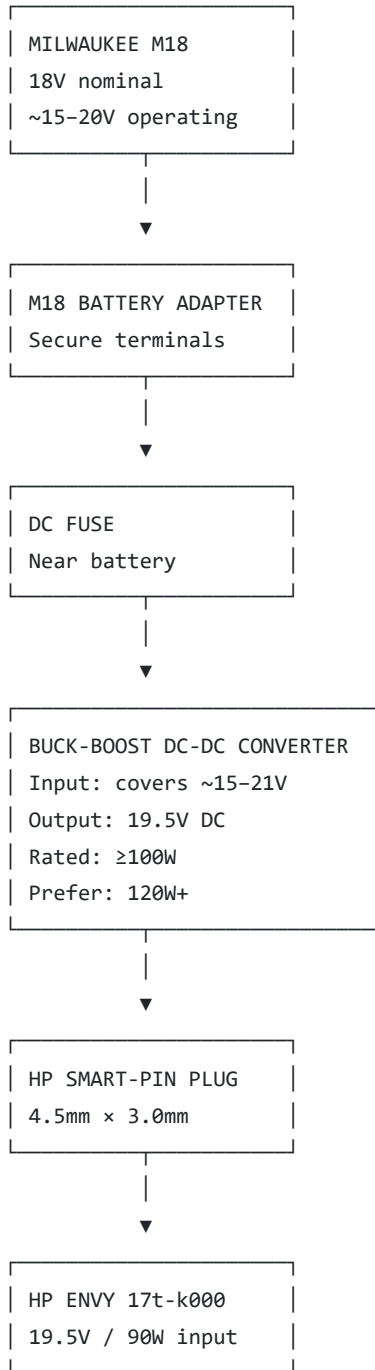
An M18 battery is approximately:

M18 state	Approximate voltage
Nominal	18V
Near empty	~15V
Fully charged	~20V

So a direct connection is not a stable 19.5V source.

4. Best emergency solution: M18 → regulated 19.5V

Recommended architecture



Why I recommend a 100W+ converter

The original adapter is rated **90W**. I would not choose a converter rated exactly 90W and operate it continuously at its limit.

Look for:

- **Input:** approximately 15–25V DC, or wider
- **Output:** adjustable to **19.5V**
- **Continuous output: 100W minimum**

- **Preferable:** 120W or more
- Overcurrent protection
- Short-circuit protection
- Thermal protection
- Adequate heatsinking

Important: A converter advertised as “100W” may only achieve that with substantial cooling. Check its continuous rating, not just its marketing peak rating.

5. How much current will the M18 supply?

At full laptop load:

$$P = 19.5V \times 4.62A = 90.09W$$

Assuming the converter is approximately 88% efficient:

$$P_{\text{input}} = \frac{90W}{0.88} \approx 102W$$

At an 18V battery:

$$I_{\text{input}} = \frac{102W}{18V} \approx 5.7A$$

Practical interpretation

The M18 may need to provide roughly:

- **2–3A** during light laptop use
- **4–6A** under heavier use or charging
- Potentially more transiently, depending on the converter and laptop behavior

That is well within the capability of a healthy M18 pack, but the converter and wiring must be designed for it.

6. The connector: now we know what to look for

Your HP ENVY 17t-k000 uses the familiar HP **blue-tip Smart-pin barrel connector**.

Search terms

If you want to buy or salvage just the connector:

HP 4.5mm 3.0mm blue tip smart pin DC plug pigtail

or:

HP ENVY 17-k000 DC power connector

or:

HP 90W TPN-DA18 charger

Important correction about the center pin

The HP Smart-pin connector has:

- **Outer barrel:** negative
- **Inner barrel:** positive
- **Center pin:** adapter identification / sensing

The center pin is **not simply another power ground or positive terminal**. The laptop may boot with only positive and negative connected, but it may report an unrecognized adapter or restrict charging/performance.

For a proper long-term solution, use a genuine compatible HP plug or salvage the original adapter cable.

7. Can you use the Ryobi 40V?

Yes, but it is the **less practical option**.

The Ryobi 40V battery is approximately:

- **36V nominal**
- **40–42V fully charged**, depending on the pack

You would need a **buck converter rated for the fully charged input voltage**.



Why I prefer M18

Factor	Milwaukee M18	Ryobi 40V
Nominal voltage	18V	36V
Distance from 19.5V	Very close	Much higher
Converter	Buck-boost	Buck
Complexity	Lower	Higher
Risk of wrong converter	Lower	Higher
My choice	🏆1	🥈2

Never connect the Ryobi battery directly to the laptop.

8. What about your LiFePO₄ 18650 cells?

If they are genuinely **LiFePO₄**, remember:

- Nominal: **3.2V**
- Full: **3.65V**

A six-cell series pack gives:

$$6 \times 3.2V = 19.2V \quad 6 \times 3.2V = 19.2V$$

and fully charged:

$$6 \times 3.65V = 21.9V \quad 6 \times 3.65V = 21.9V$$

That is close to the laptop's required voltage, but it still needs a **regulated output stage**.

My recommendation

For an emergency laptop power project, I would **not use loose, unknown 18650 cells** unless you already have:

- A proper 6S LiFePO₄ BMS
- Matched cells
- Correct balancing
- Proper charger
- Fuse and insulated enclosure

A tool battery is already a professionally packaged, protected energy source. It is the safer and simpler starting point.

9. One important question: Do you have the laptop's internal battery?

Your first photograph showed an HP battery rated:

14.8V, approximately 2,700mAh

That battery is likely the original or compatible battery for this ENVY/Pavilion-era chassis, but I would want to verify its exact part number against the ENVY 17-k000 before treating it as confirmed.

If the internal battery is still installed and functional, the emergency setup becomes easier:

M18 → regulated 19.5V → laptop DC-in

The laptop can then use its own internal battery as a buffer, assuming the charging system accepts the adapter.

If the internal battery is dead or absent, the laptop may still operate from the external adapter, but that depends on its power-management behavior.

My final recommendation for your “apocalypse laptop”

For this exact machine:

HP ENVY 17t-k000 / G0U21AV
19.5V DC – 4.62A / 90W

I would build:

Milwaukee M18 → M18 adapter → fuse → 120W buck-boost converter → 19.5V → HP 4.5 × 3.0mm Smart-pin plug.

That is a legitimate engineering project—not a fantasy. The laptop's voltage requirement is close enough to M18 that the conversion is straightforward **provided the output is regulated and the connector is correct**.

Next step: If you want, I can design the actual **M18-to-HP ENVY 17 emergency power box**, including the exact converter specifications, fuse size, wiring diagram, connector pin identification, and a shopping list of parts you can look for in the U.S. or Shopee Philippines.

Yes. For your **HP ENVY 17t-k000 (G0U21AV)**, you have **two potential SSD upgrade paths**: replacing the existing 2.5-inch hard drive, or using the laptop's M.2 slot. The M.2 option is particularly interesting because this generation can support **both SATA and PCIe/NVMe M.2 SSDs**, depending on the configuration. ([HP Support Community](#))

1. SSD compatibility

SSD type	Compatibility	My recommendation
2.5-inch SATA SSD, 7mm	✔ Safest replacement for the existing HDD	Excellent choice
M.2 2280 SATA SSD	✔ Listed as supported	Good
M.2 2280 PCIe/NVMe SSD	✔ Listed as supported	Best performance option
M.2 2242 SSD	⚠ Not the documented size	Avoid unless physically confirmed
M.2 NVMe Gen 4	⚠ May work at backward-compatible speed, but not necessary	Prefer Gen 3
M.2 SATA + NVMe dual-protocol SSD	⚠ Compatibility depends on the slot and drive	Avoid unnecessary uncertainty

HP's documentation for the **17t-k000 family** lists configurations with a **1TB 2.5-inch SATA hard drive plus a 256GB PCIe NVMe M.2 SSD**, a SATA M.2 SSD, or an Intel Optane module. That confirms the M.2 slot was used for storage in this platform. ([HP Support Community](#))

2. My recommendation: Buy a 2.5-inch SATA SSD first

If your goal is to **revive this old laptop reliably**, I would start with a **2.5-inch SATA III SSD**.

What to buy

2.5-inch SATA SSD — 7mm thickness — 500GB or 1TB

Examples of suitable product families:

- **Samsung 870 EVO**
- **Crucial MX500**
- **Kingston KC600**
- **WD Blue SA510**

These are **2.5-inch SATA SSDs**, not M.2 drives.

Why this is the safest route

Your ENVY 17t-k000 was designed around a conventional 2.5-inch SATA hard drive. Replacing that drive with a SATA SSD generally means:

- Same physical drive bay
- Same SATA interface
- Same drive cable
- No concern about M.2 keying or protocol compatibility
- Easy installation and cloning

For an old laptop that you may turn into an Ubuntu/Docker machine, a 1TB 2.5-inch SATA SSD is a very sensible upgrade.

3. The M.2 slot: What exactly can it use?

The documented M.2 storage options for the 17t-k000 family include:

M.2 specification	HP-listed configuration
M.2 2280 PCIe NVMe	256GB PCIe NVMe
M.2 2280 SATA	128GB SATA 3 TLC
M.2 2280 PCIe	16GB Intel Optane

These are not merely generic M.2 listings—the HP support information specifically identifies these storage combinations for the **ENVY 17t-k000**. ([HP Support Community](#))

So, can you install a modern M.2 NVMe?

Yes, an M.2 2280 PCIe/NVMe SSD is the correct type to investigate.

For this older platform, I would look for:

M.2 2280 NVMe PCIe Gen 3 SSD

Examples:

- Samsung 970 EVO Plus
- WD Blue SN570
- Crucial P3
- Kingston NV2

However, there is an important caveat:

I would not promise that every modern NVMe drive will boot in every BIOS configuration of this laptop. The HP-listed configuration confirms PCIe NVMe support, but older BIOS implementations can be particular about booting from newer drives.

For a first installation, a **500GB or 1TB PCIe Gen 3 NVMe** is a reasonable target.

4. Important: Don't confuse these three drives

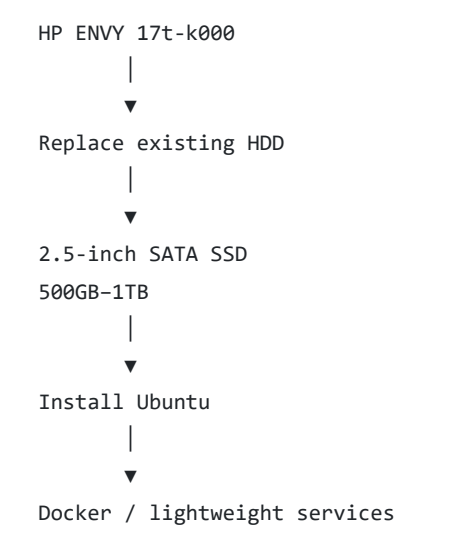
Drive	Appearance	Interface
2.5-inch SATA SSD	Rectangular 2.5-inch case	SATA cable
M.2 SATA SSD	Small circuit board, usually B+M key	SATA protocol
M.2 NVMe SSD	Small circuit board, usually M key	PCIe protocol

M.2 is a physical form factor, not a protocol. An M.2 SATA drive and an M.2 NVMe drive can look similar but communicate differently.

5. What I would do with your specific HP

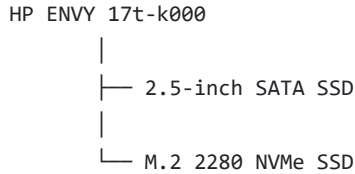
Given your plans for an old laptop revival:

Option A — Most reliable



My pick: 1TB 2.5-inch SATA SSD.

Option B — More ambitious



Potentially, you could retain a 2.5-inch SSD and use the M.2 slot for another drive, **if the required cable, mounting hardware, and BIOS configuration are present**. HP documented dual-storage configurations for this family, but the exact factory configuration matters. ([HP Support Community](#))

My final answer

For your **HP ENVY 17t-k000**:

Safest purchase

2.5-inch SATA III SSD, 7mm, 500GB or 1TB.

Faster M.2 option

M.2 2280 PCIe/NVMe SSD, preferably Gen 3.

What I would buy

If you want the least hassle:

Crucial MX500 1TB 2.5-inch SATA SSD

If you want to experiment with the M.2 slot:

WD Blue SN570 500GB or 1TB M.2 2280 NVMe

Before buying the M.2 drive, show me a photograph of the inside of the laptop—especially the area around the existing hard drive and the M.2 slot. I can tell you whether it has the M.2 connector, whether it is occupied by an Optane/cache module, and whether you need a mounting screw or bracket.