TECH MEOW
PS5 HDMI Tool

PS5 SLIM · HDMI CHIP

Test Point Map

Realtek RTD2175P → Interposer Tech MeoW with MN864739

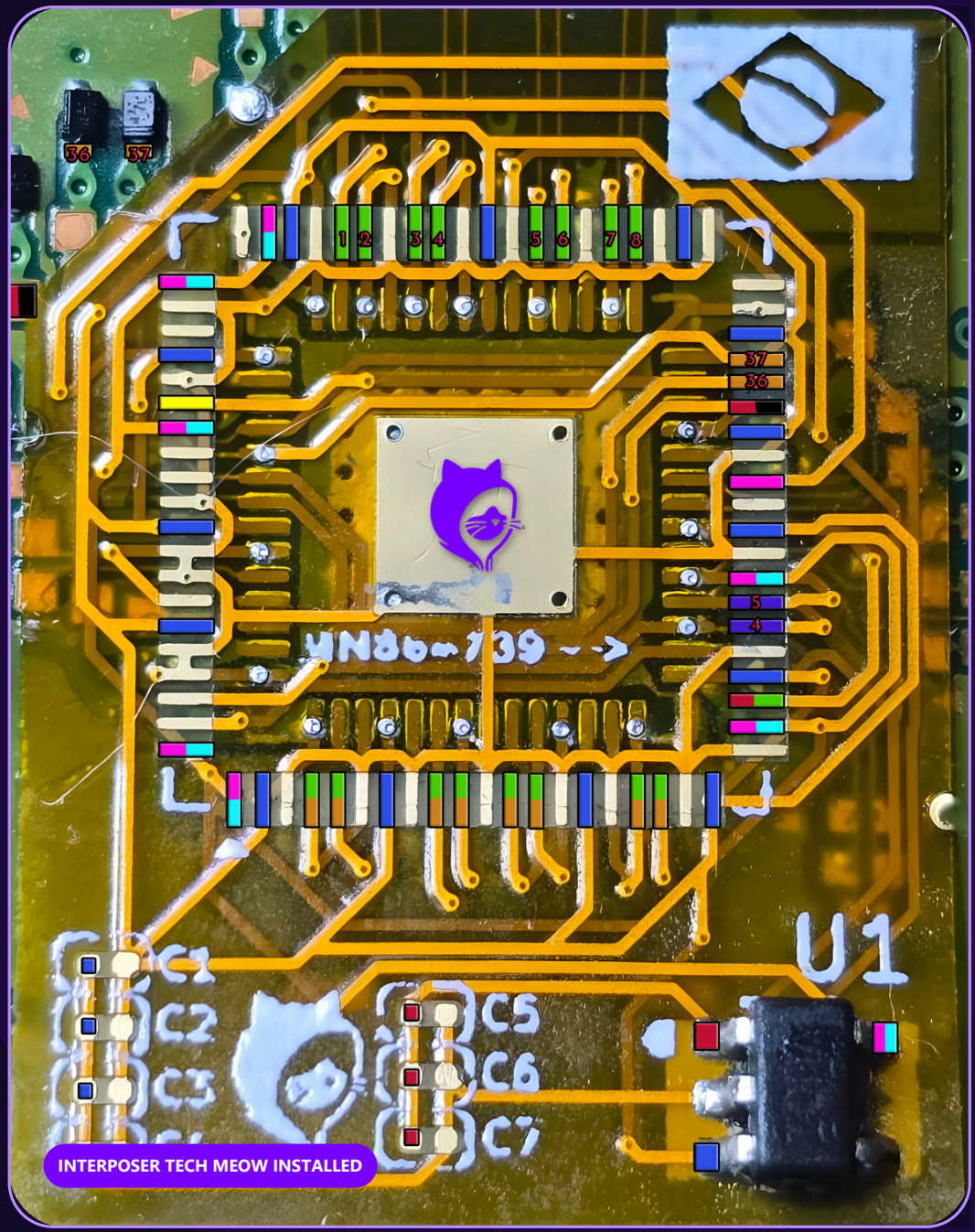
Test points of the board without and with the interposer, color code, interposer layout and the 1.8 V regulator schematic.

SOME TEST POINTS · FULL DIAGRAM COMING SOON

01 Quick concepts
02 Color code
03 Board without interposer
04 Board with interposer
05 Interposer layout
06 1.8 V regulator

Made by
Jefferson Honório

techmeow.app/ps5-hdmi-tool



01 · QUICK CONCEPTS

Understand the signals before measuring

The electronics basics you need to read this map, without the jargon.

Power

3.3 V · 1.8 V · 0.9 V

It is the energy that makes the chip work. Each part of the chip uses its own voltage. Without power, nothing works.

AT THE BENCH

With the console on, measure each point against GND (point 81). Zero or low voltage = missing power.

On the map:

Clock

SYSCLK

A signal that switches on and off nonstop, always at the same pace, like a metronome. It is the "beat" that keeps the chips in sync. Without a clock, the chip stays idle.

AT THE BENCH

A multimeter only shows an average voltage. To really see the clock, use an oscilloscope.

On the map:

Data

DP Lane · TX

The information itself: a sequence of 0s and 1s (0 V and high voltage). The picture sent to the TV is data too, just at very high speed.

AT THE BENCH

These signals are too fast for a multimeter. Check continuity and make sure there is no short to GND (diode mode).

On the map:

I2C

SCL/SDA · HSCL/HSDA

A way for two or more chips to talk using only 2 wires: SCL (clock, sets the pace) and SDA (data, carries the information). At rest, both stay at high voltage.

AT THE BENCH

With the console on, SCL and SDA stay at high voltage. A line stuck at 0 V means a short or a frozen chip.

On the map:

Reset

NRESET

The chip's "restart button". It works backwards: at 0 V the chip stays locked; when the voltage rises, it starts working. Reset stuck at 0 V = a chip that never starts.

AT THE BENCH

With the console on, NRESET must be at high voltage. At 0 V, the chip never leaves reset.

On the map:

Alerts

NIRQ · HPD

NIRQ: the chip pulls the line to 0 V to call the processor. HPD: tells that a TV is connected and ready. The "N" at the start of the name means the signal acts at 0 V.

AT THE BENCH

With the TV on and connected, HPD stays at high voltage. HPD at 0 V = console with no picture.

On the map:

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02 · COLOR CODE

What each color means

The same colors used on the photo markings, on both boards.

VIDEO



GPU → HDMI chip — DP Lane signal — GREEN / ORANGE

Picture coming out of the processor (APU) in DisplayPort format and going into the chip to be converted to HDMI.



HDMI chip → HDMI — TX signal — GREEN

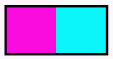
Picture already converted to HDMI, leaving the chip toward the connector and the TV.

POWER



3.3 V — power — RED

3.3 V power coming from the motherboard. On the interposer, it also feeds the input of the 1.8 V regulator (U1).



1.8 V — power — PINK / INDIGO BLUE

1.8 V power for the MN864739. It only exists with the interposer: it is made by the U1 regulator from the 3.3 V.



0.9 V — power — BLUE

0.9 V power for the chip core. On the interposer, it also turns on the 1.8 V regulator through the EN pin.

COMMUNICATION AND CONTROL



SCL, SDA — console I2C — ORANGE

Conversation between the PS5 processor and the chip: this is how the console configures the chip. SCL = clock, SDA = data.



HSCL, HSDA — TV I2C — PURPLE

Conversation with the TV through the cable (HDMI pins 15 and 16): reads the resolutions the TV accepts (EDID) and handles HDCP.



SYSCLK — clock — YELLOW

Main clock of the chip, the “beat” that makes it work. Without a clock, the chip stays idle.



NRESET — reset — PINK

Chip restart. At 0 V the chip stays locked; when the voltage rises, it starts working.



NIRQ — alerts / interrupt — RED / GREEN

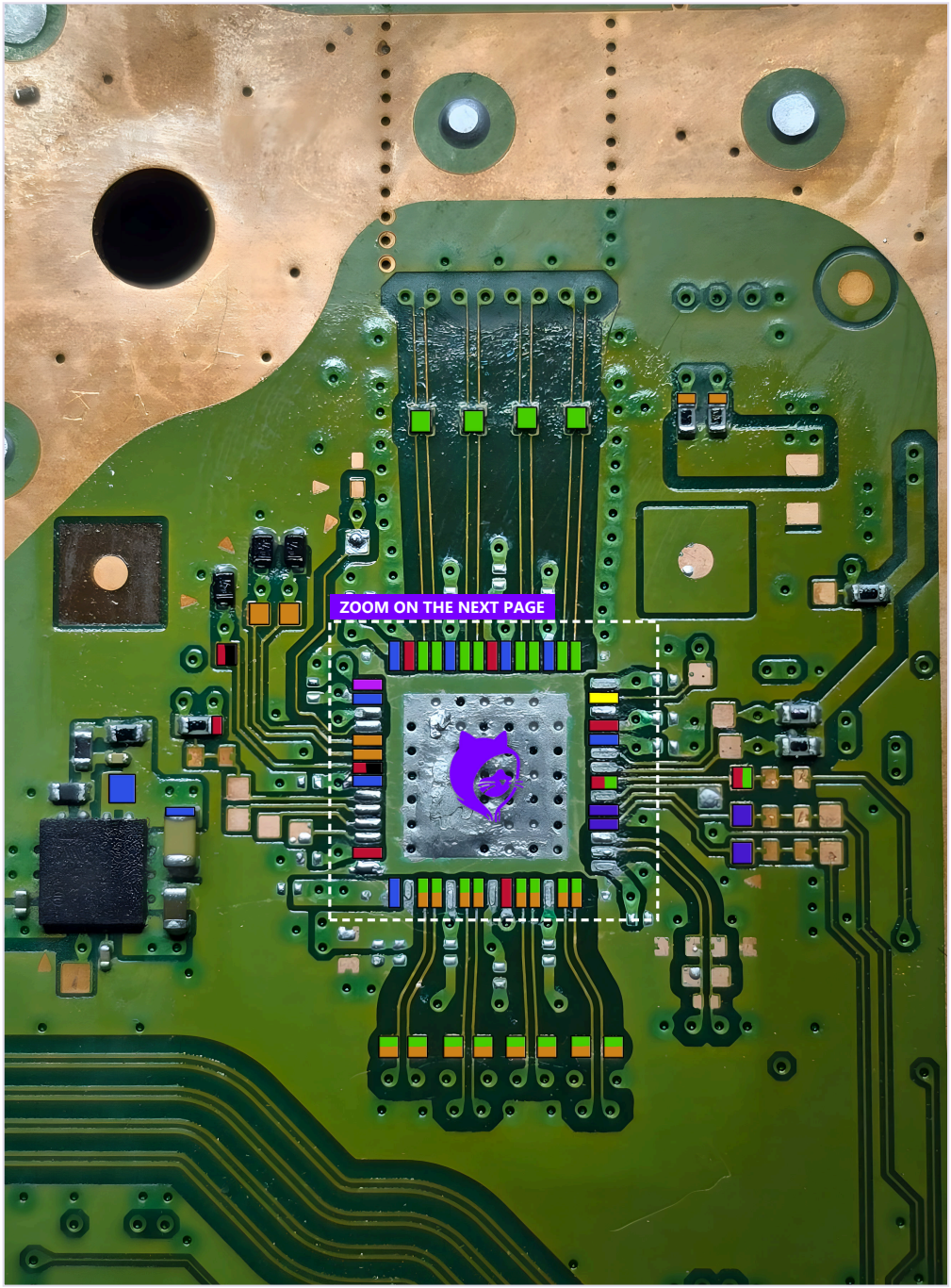
Alert line from the chip to the processor (active at 0 V). Signals events, such as a TV being connected or disconnected.



HPD — TV detection — RED / BLACK

Tells that a TV is connected and ready (HDMI pin 19). Without HPD, the console sends no picture.

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03 · TEST POINTS · WITHOUT INTERPOSER

Board without the interposer

HDMI chip footprint with the Realtek RTD2175P removed

The points are marked directly on the motherboard pads. Use this map to measure and check the board before soldering the interposer.

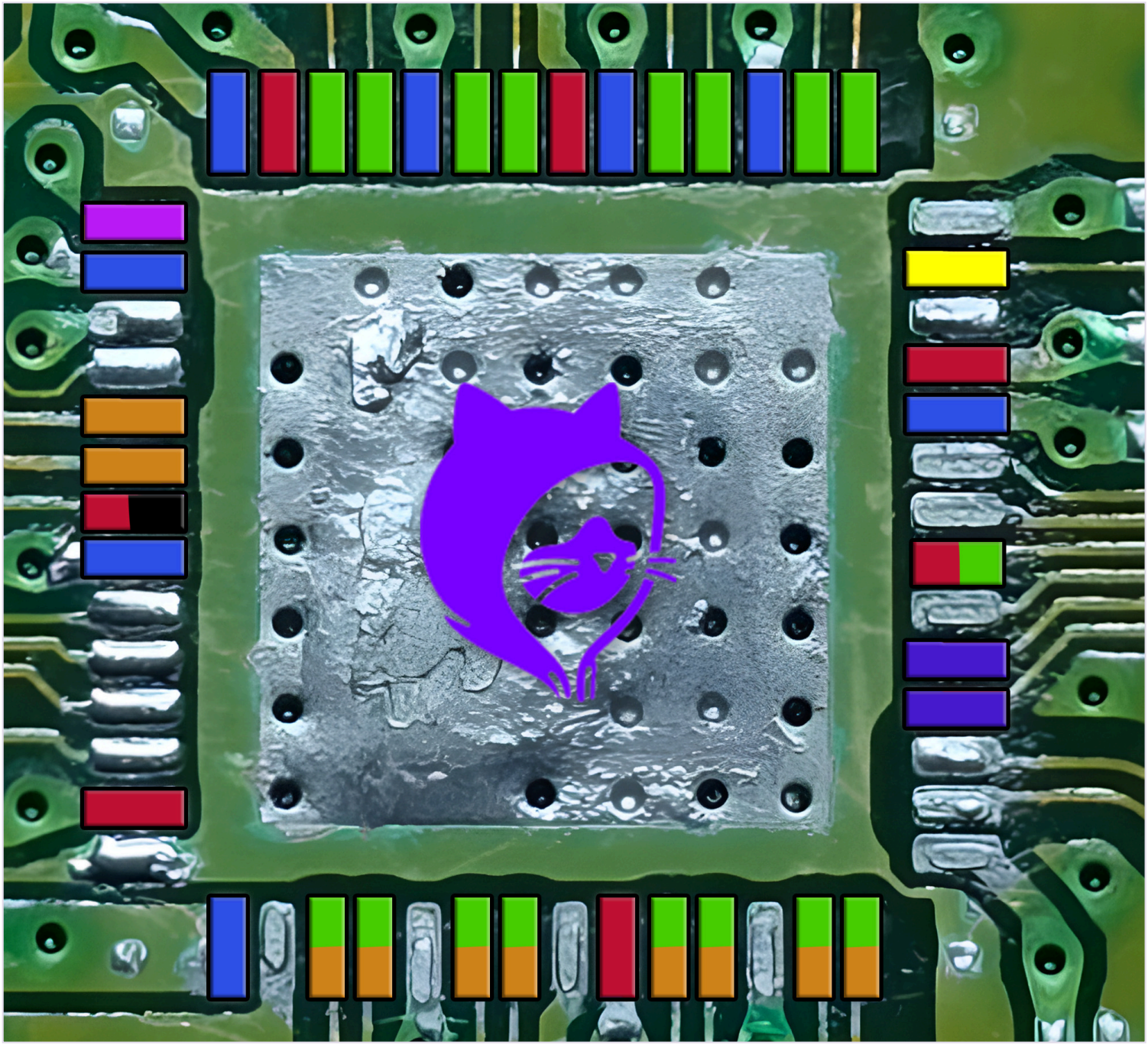
LEGEND

GPU → HDMI chip DP Lane signal	GREEN / ORANGE
HDMI chip → HDMI TX signal	GREEN
3.3 V power	RED
0.9 V power	BLUE
SCL, SDA console I2C	ORANGE
HSCL, HSDA TV I2C	PURPLE
SYSCLK clock	YELLOW
NRESET reset	PINK
NIRQ alerts / interrupt	RED / GREEN
HPD TV detection	RED / BLACK

Partial map: There are more points on the chip. These are some of the test points; the full diagram will be available soon.

Tip: zoom in, the photo is high resolution. The dashed box shows the area enlarged on the next page.

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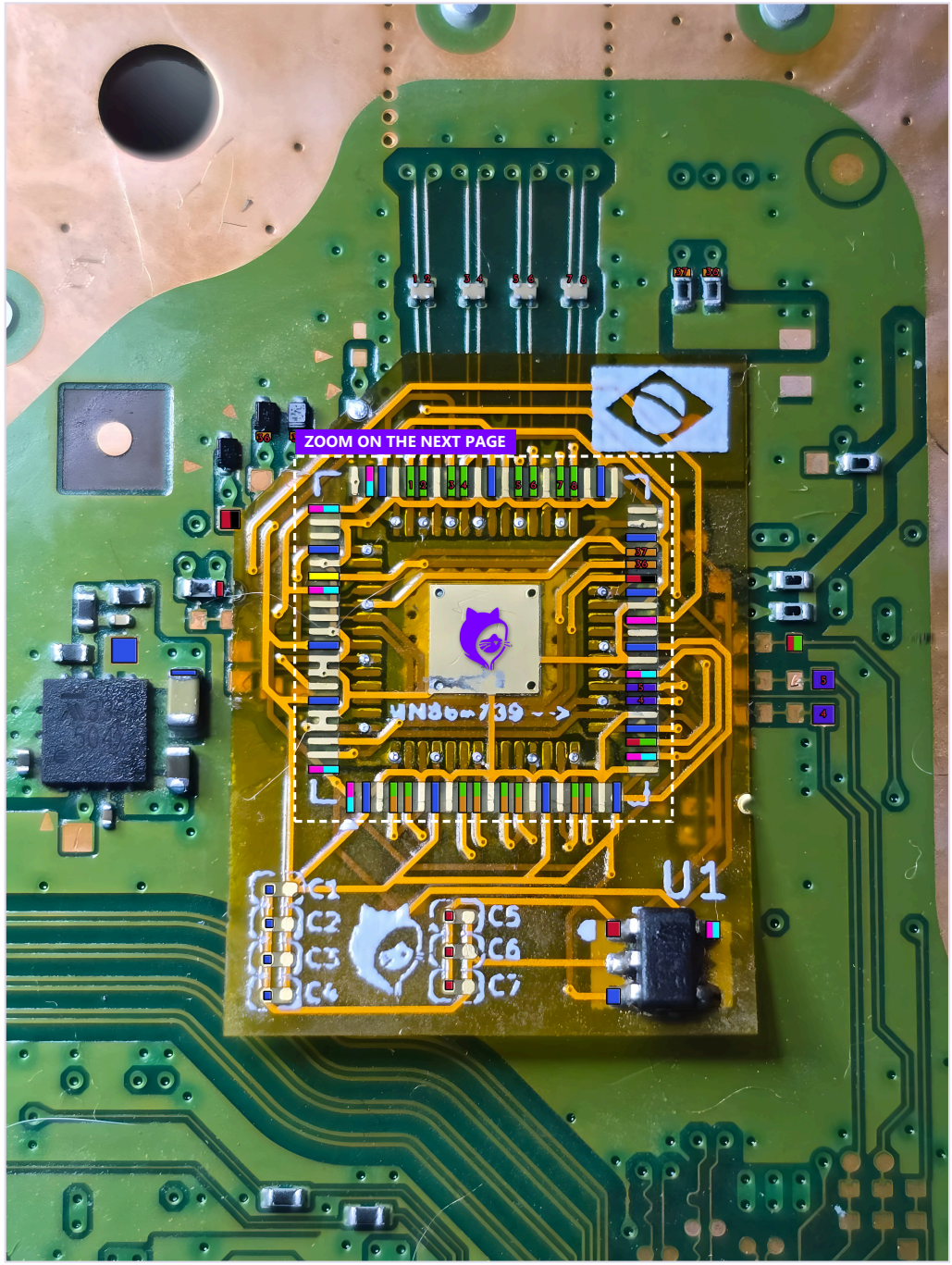
03 · ZOOM

Realtek footprint pads

LEGEND

- **GPU → HDMI chip** — DP Lane signal
- **HDMI chip → HDMI** — TX signal
- **3.3 V** — power
- **0.9 V** — power
- **SCL, SDA** — console I2C
- **HSCL, HSDA** — TV I2C
- **SYSCLK** — clock
- **NRESET** — reset
- **NIRQ** — alerts / interrupt
- **HPD** — TV detection

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04 · TEST POINTS · WITH INTERPOSER

Board with the interposer

Interposer Tech MeoW with the MN864739 installed

The interposer is soldered in place of the Realtek and takes the MN864739 on top. The points are marked on the MN864739 pins and on the U1 regulator (1.8 V).

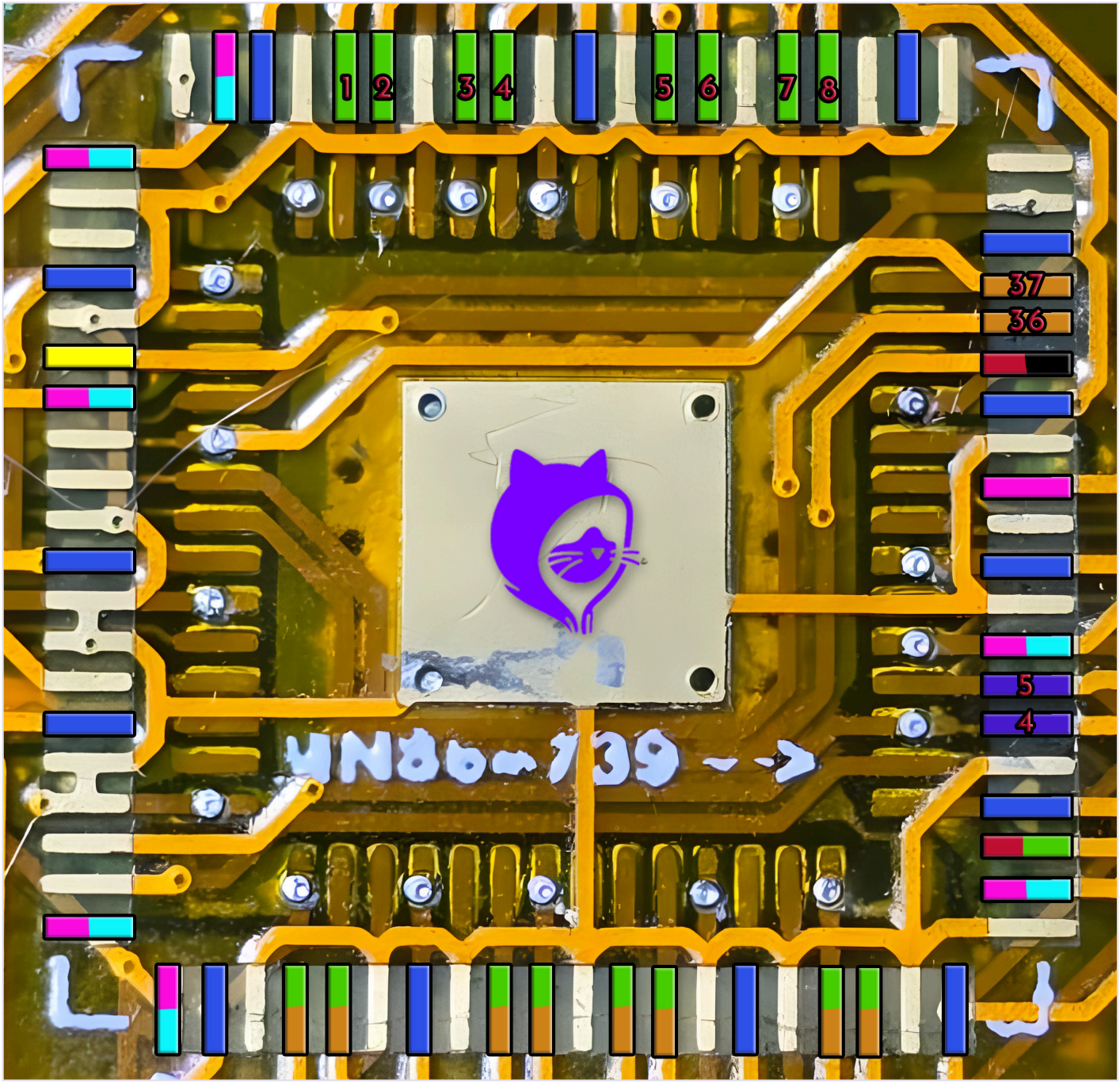
LEGEND

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SYSCLK clock	YELLOW
NRESET reset	PINK
NIRQ alerts / interrupt	RED / GREEN
HPD TV detection	RED / BLACK

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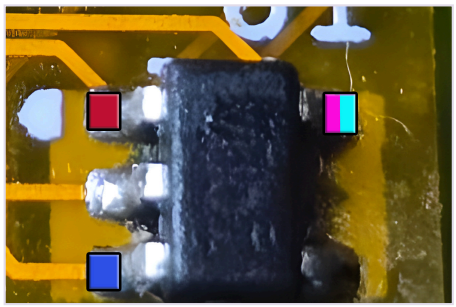
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04 · ZOOM

MN864739 pins on the interposer



U1 regulator (1.8 V)

pin 1 = 3.3 V · pin 3 = 0.9 V · pin 5 = 1.8 V

LEGEND

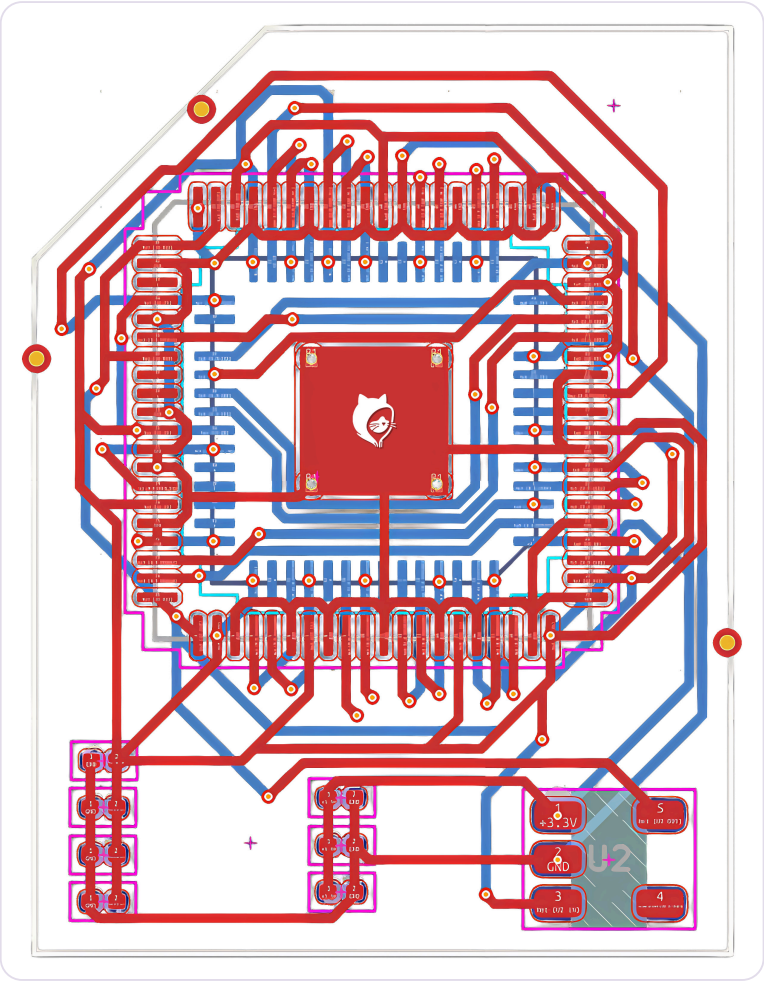
- **GPU → HDMI chip** — DP Lane signal
- **HDMI chip → HDMI** — TX signal
- **3.3 V** — power
- **1.8 V** — power
- **0.9 V** — power
- **SCL, SDA** — console I2C
- **HSCL, HSDA** — TV I2C
- **SYSCLK** — clock
- **NRESET** — reset
- **NIRQ** — alerts / interrupt
- **HPD** — TV detection

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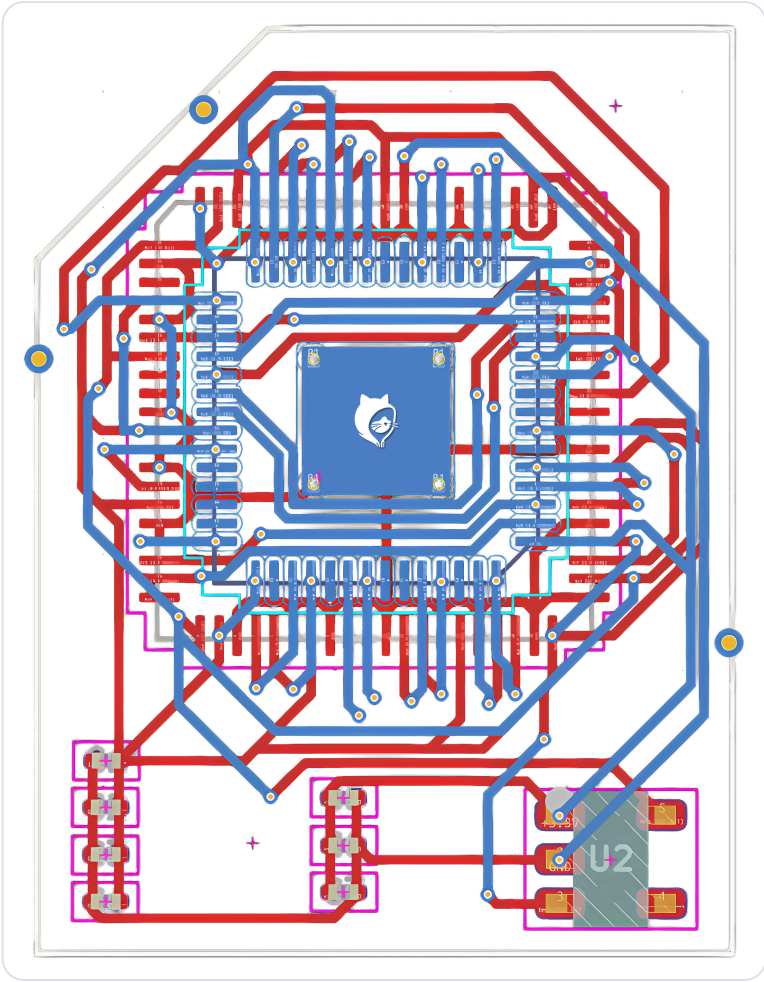
05 · INTERPOSER LAYOUT

Interposer design in KiCad

Traces on both sides of the board. The center pad (point 81) is GND.



Highlight: red traces
front layer (F.Cu)



Highlight: blue traces
back layer (B.Cu)

HOW TO READ

Red trace
copper on one side of the board

Blue trace
copper on the other side

Yellow dot
via: hole that connects both sides

Pink outline
area of each component

Point 81 = GND: the large pad in the center, under the MN864739. It carries the Tech MeoW watermark.

In KiCad the regulator shows as U2; on the board silkscreen, U1.

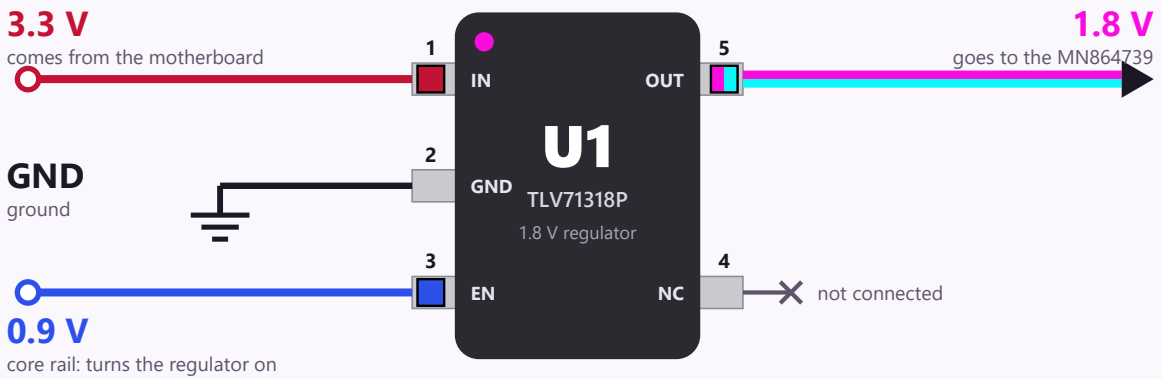
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06 · 1.8 V REGULATOR

How the interposer makes the 1.8 V

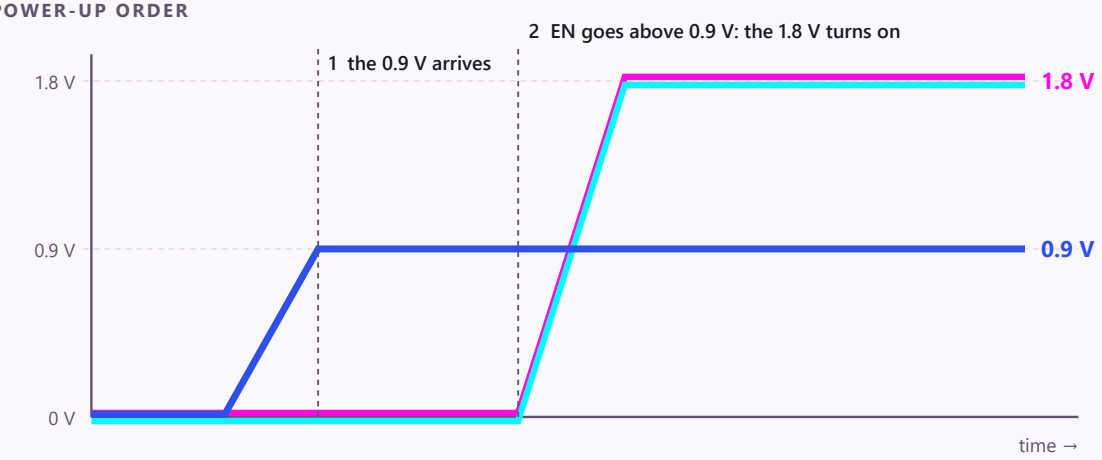
The MN864739 needs 1.8 V, which the Realtek did not use. The interposer makes this 1.8 V on its own.

SCHEMATIC



5-pin part (SOT-23-5): pins 1, 2 and 3 on one side, 5 and 4 on the other, in the same position as the photo. The pink dot marks pin 1. The small squares are the colors marked on the photo.

POWER-UP ORDER



HOW IT WORKS

1. The motherboard delivers 3.3 V to pin 1 (IN), at the same point that used to power the Realtek.
2. When the 0.9 V from the core reaches pin 3 (EN), the regulator turns on.
3. It steps the 3.3 V down to 1.8 V and delivers it on pin 5 (OUT), straight to the MN864739.

WHY A DEDICATED REGULATOR?

Instead of pulling 1.8 V from another point on the board (such as the CXD PMIC, the southbridge), the interposer makes its own. If the video section fails, the fault stays contained on the interposer and does not spread to the PMIC or the CXD.

SPECIFICATIONS

Part	**TI TLV71318P**
Package	**SOT-23-5**
Output	**1.8 V fixed**
Max. current	**150 mA**
Input range	**1.4 V to 5.5 V**
EN on	**above 0.9 V**
EN off	**below 0.4 V**
Filters	**C1 to C7, already fitted**

Official datasheet (TLV71318P): ti.com · tlv713p.pdf

QUICK CHECK · CONSOLE ON

Pin 1 (IN)	**≈ 3.3 V**
Pin 2 (GND)	**0 V**
Pin 3 (EN)	**≈ 0.9 V**
Pin 5 (OUT)	**≈ 1.8 V**

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COMING SOON: FULL DIAGRAM WITH ALL POINTS

Like our work?

The Interposer Tech MeoW comes with the 1.8 V regulator and capacitors already fitted. Just solder it in place of the Realtek and install the MN864739.

Buy on Mercado Livre **Buy on Shopee**

Project website

techmeow.app/ps5-hdmi-tool



PS5 HDMI Tool

Tech MeoW program that reads, converts (Realtek ↔ Nuvoton) and writes the NOR.

Made by Jefferson Honório

Tech MeoW · PS5 HDMI Tool

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