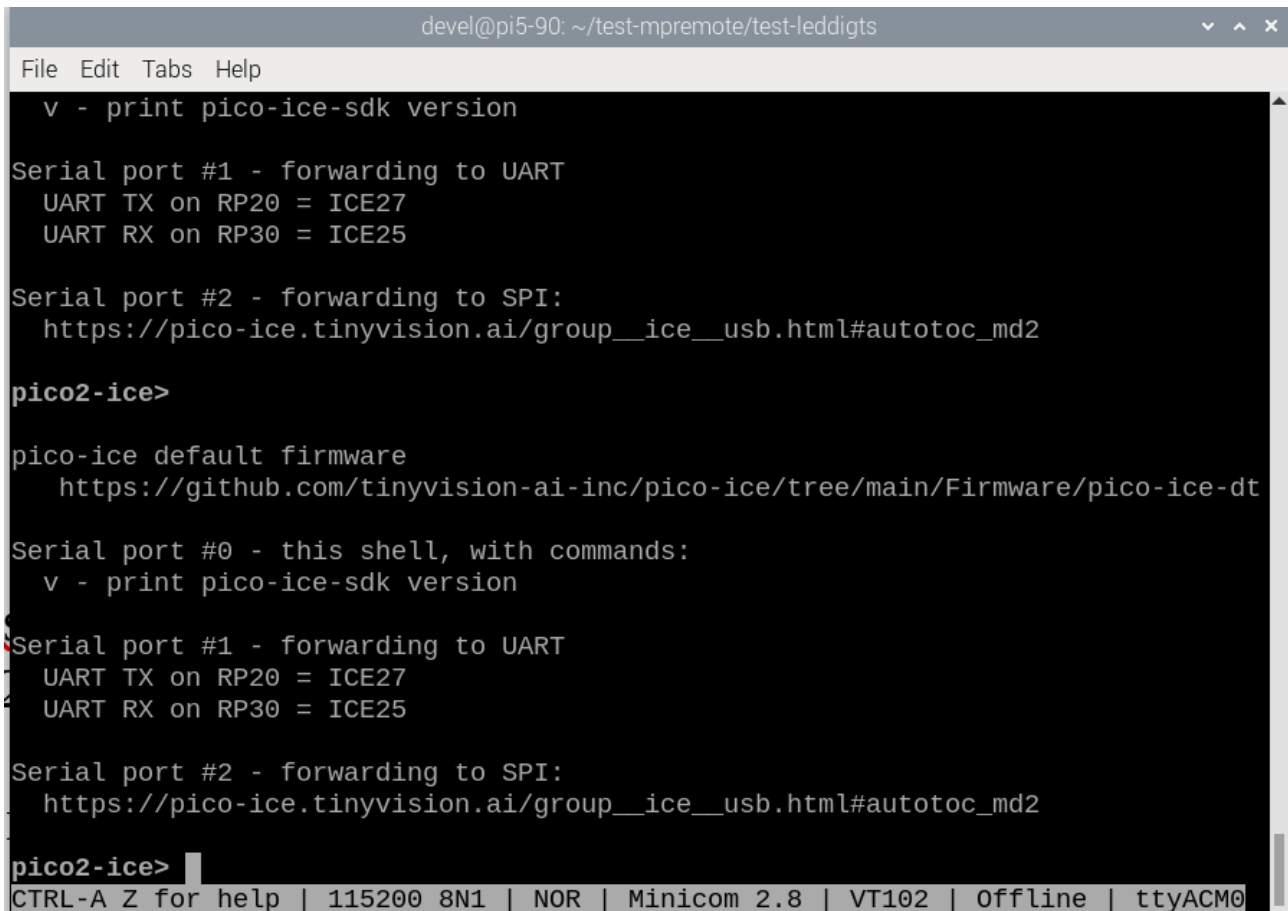


\*\*\*\*\*Default\*\*\*\*\*  
**Default Firmware with pmod leddigits  
&  
MicroPython pico2-ice with pmod leddigits  
04/25/25  
\*\*\*\*\*Default\*\*\*\*\***

```
cp ~/master-repos/pico2-ice/Firmware/pico2-ice-default/pico2_ice_default.uf2  
/media/devel/RP2350/
```

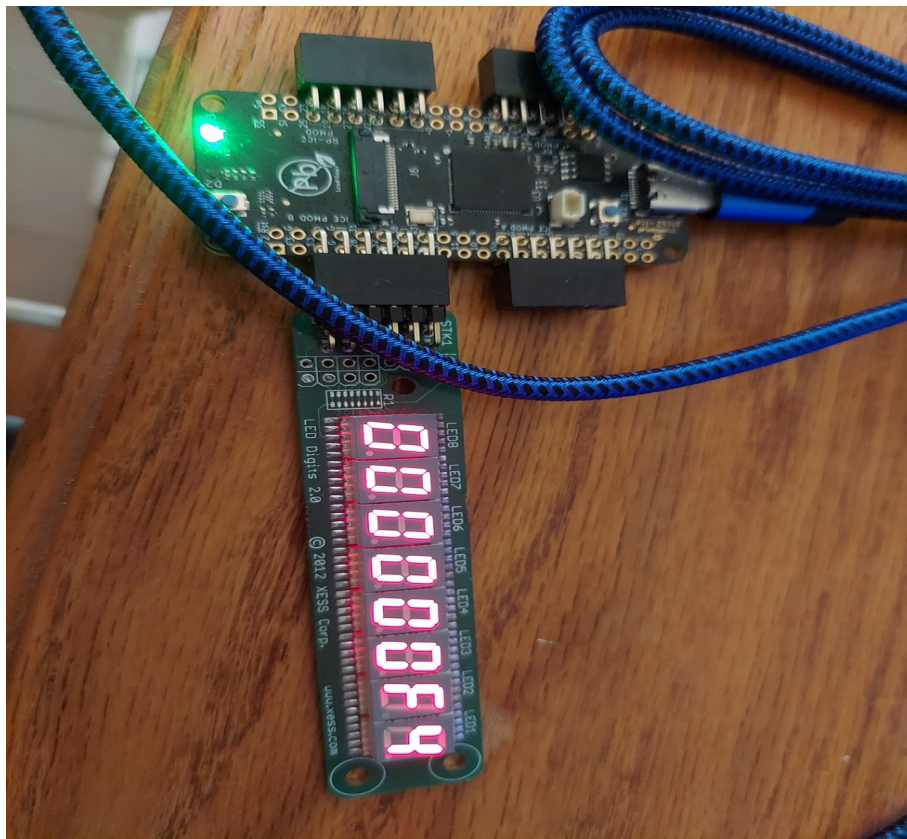


The screenshot shows a terminal window titled "devel@pi5-90: ~/test-mpremote/test-leddigits". The window contains the following text:

```
File Edit Tabs Help  
v - print pico-ice-sdk version  
  
Serial port #1 - forwarding to UART  
UART TX on RP20 = ICE27  
UART RX on RP30 = ICE25  
  
Serial port #2 - forwarding to SPI:  
https://pico-ice.tinyvision.ai/group__ice__usb.html#autotoc_md2  
  
pico2-ice>  
  
pico-ice default firmware  
https://github.com/tinyvision-ai-inc/pico-ice/tree/main/Firmware/pico-ice-dt  
  
Serial port #0 - this shell, with commands:  
v - print pico-ice-sdk version  
  
Serial port #1 - forwarding to UART  
UART TX on RP20 = ICE27  
UART RX on RP30 = ICE25  
  
Serial port #2 - forwarding to SPI:  
https://pico-ice.tinyvision.ai/group__ice__usb.html#autotoc_md2  
  
pico2-ice>  
CTRL-A Z for help | 115200 8N1 | NOR | Minicom 2.8 | VT102 | Offline | ttyACM0
```

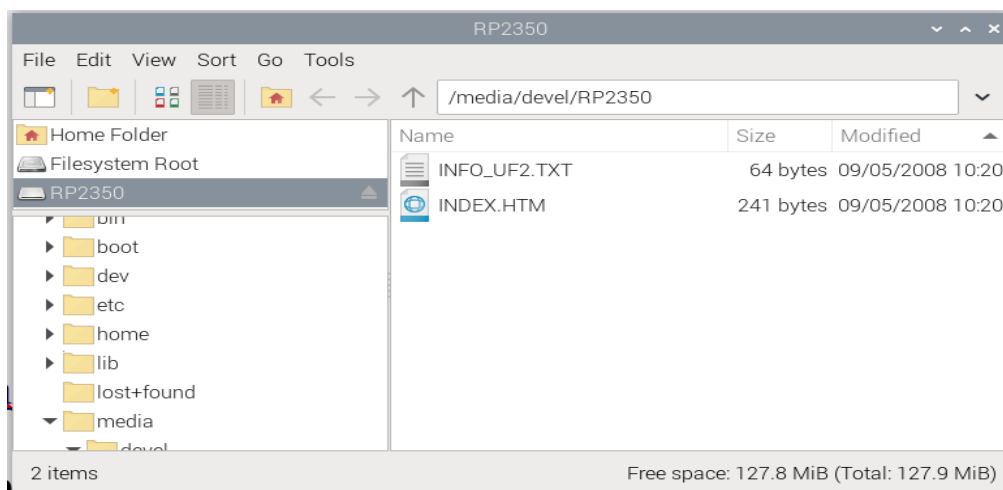
xx

```
devel@pi5-90:~/pico-ice/leddigits $ cd pico-ice/leddigits/  
devel@pi5-90:~/pico-ice/leddigits $ make clean  
devel@pi5-90:~/pico-ice/leddigits $ make  
devel@pi5-90:~/pico-ice/leddigits $ bin2uf2 -o top.uf2 top.bin  
devel@pi5-90:~/pico-ice/leddigits $ cp top.uf2 /media/devel/pico2-ice/
```



The pico2-ice starting counting.

Depress the sw on right side of USB connector on power-up.



```
devel@pi5-90:~/pico-ice/leddigits $ cp
~/master-repos/pico-ice-micropython/pico2-ice-uf2/firmware.uf2 /media/devel/RP2350/
```

```
devel@pi5-90: ~/test-mpremote/test-leddigits
File Edit Tabs Help
(env) devel@pi5-90:~/test-mpremote/test-leddigits $ mpremote
Connected to MicroPython at /dev/ttyACM0
Use Ctrl-] or Ctrl-x to exit this shell
MicroPython v1.25.0 on 2025-04-24; tinyVision.ai pico2-ice with RP2350
Type "help()" for more information.
>>> █
```

XX

pico2-ice starts blinking.

“git clone <https://github.com/develone/pico-ice.git> -b test-dev-100424”

```
devel@pi5-90:~/pico-ice/leddigits $ cd pico-ice/leddigits/
```

```
devel@pi5-90:~/pico-ice/leddigits $ make clean
```

```
devel@pi5-90:~/pico-ice/leddigits $ make
```

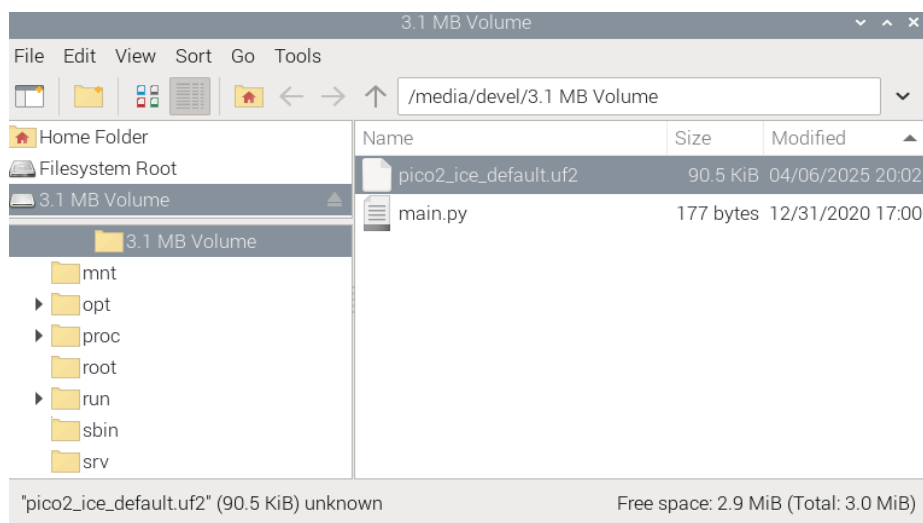
The top.bin was created

In MicroPython the iCE40UP5K does not show up as pico-ice

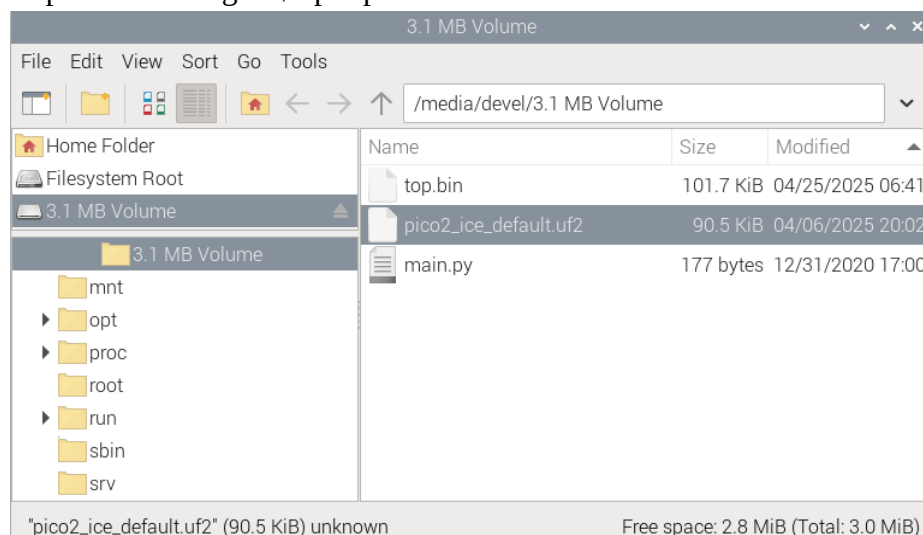
df

```
/dev/sda      3048    200    2848   7% /media/devel/5221-0000
```

pico2-iCE40UP5K



```
devel@pi5-90:~/pico-ice/leddigits $ cp top.bin /media/devel/5221-0000/
```



Testing mpremote in new folder.

**Note: Very important needs to disconnected an reconnected in between starting a new process.**

**Note: Question where does top.bin or gateway.bin need to be located? In the folder where mpremote is being run or on the pico2-ice drive. It appears to be needed in both locations.**

(env) devel@pi5-90:~/test-mpremote-042525 \$ mpremote

Connected to MicroPython at /dev/ttyACM0

Use Ctrl-] or Ctrl-x to exit this shell

MicroPython v1.25.0 on 2025-04-24; tinyVision.ai pico2-ice with RP2350

Type "help()" for more information.

```
>>> from machine import Pin
```

```
>>> import ice
```

```
>>>
```

```
>>> file = open("gateway.bin", "br")
```

```
>>> flash = ice.flash(miso=Pin(4), mosi=Pin(7), sck=Pin(6), cs=Pin(5))
```

```
>>> flash.write(file)
```

```
>>> fpga = ice.fpga(cdone=Pin(40), clock=Pin(21), creset=Pin(31),  
cram_cs=Pin(5), cram_mosi=Pin(4), cram_sck=Pin(6), frequency=48)
```

```
>>> fpga.start()
```

```
True
```

```
>>> device disconnected did not start to blinking green until is was  
connected.
```

```
devel@pi5-90:~/pico-ice/examples-tested-1_6_1/pico-ice/ice_makefile_blink  
y $ rm -rf /media/devel/5221-0000/gateway.bin
```

```
devel@pi5-90:~/pico-ice/examples-tested-1_6_1/pico-ice/ice_makefile_blink  
y $ cp ../../../../leddigits/top.bin /media/devel/5221-0000/
```

```
devel@pi5-90:~/pico-ice/leddigits $ mkdir ~/test-mpremote-042525
```

```
devel@pi5-90:~/pico-ice/leddigits $ cp ~/test-mpremote/virtp.sh ~/test-mpremote-042525
```

```
devel@pi5-90:~/pico-ice/leddigits $ cd ~/test-mpremote-042525/
```

```
devel@pi5-90:~/test-mpremote-042525 $ . ./virtp.sh
```

```
(env) devel@pi5-90:~/test-mpremote-042525 $
```

```
(env) devel@pi5-90:~/test-mpremote-042525 $ pip3 install mpremote
```

Looking in indexes: <https://pypi.org/simple>, <https://www.piwheels.org/simple>

Collecting mpremote

Downloading mpremote-1.25.0-py3-none-any.whl (33 kB)

Collecting pyserial>=3.3

Using cached <https://www.piwheels.org/simple/pyserial/pyserial-3.5-py2.py3-none-any.whl> (90 kB)

Installing collected packages: pyserial, mpremote

Successfully installed mpremote-1.25.0 pyserial-3.5

(env) devel@pi5-90:~/test-mpremote-042525 \$

(env) devel@pi5-90:~/test-mpremote-042525 \$ mpremote

Connected to MicroPython at /dev/ttyACM0

Use Ctrl-] or Ctrl-x to exit this shell

MicroPython v1.25.0 on 2025-04-24; tinyVision.ai pico2-ice with RP2350

Type "help()" for more information.

```
>>> from machine import Pin
```

```
>>> import ice
```

```
>>> file = open("top.bin", "br")
```

```
>>> flash = ice.flash(miso=Pin(4), mosi=Pin(7), sck=Pin(6), cs=Pin(5))
```

```
>>> flash.write(file)
```

```
>>> fpga = ice.fpga(cdone=Pin(40), clock=Pin(21), creset=Pin(31), cram_cs=Pin(5),
cram_mosi=Pin(4), cram_sck=Pin(6), frequency=48)
```

```
>>> fpga.start()
```

```
>>> flash.erase(4096)
```

devel@pi5-90:~ \$ cd ~/test-mpremote/

```
>>> flash.write(file)
```

```
>>> fpga = ice.fpga(cdone=Pin(40), clock=Pin(21), creset=Pin(31), cram_cs=Pin(5),
cram_mosi=Pin(4), cram_sck=Pin(6), frequency=48)
```

```
>>> fpga.start()
```

True

devel@pi5-90:~/test-mpremote \$ . ./virt.sh

(env) devel@pi5-90:~/test-mpremote \$

(env) devel@pi5-90:~/test-mpremote \$ cd test-leddigits/

(env) devel@pi5-90:~/test-mpremote/test-leddigits \$ ls ../env/bin/

activate Activate.ps1 pip3 pyserial-ports python3.11

activate.csh mpremote pip3.11 python

activate.fish pip pyserial-miniterm python3

(env) devel@pi5-90:~/test-mpremote/test-leddigits \$ mpremote

Connected to MicroPython at /dev/ttyACM0

Use Ctrl-] or Ctrl-x to exit this shell

MicroPython v1.25.0 on 2025-04-24; tinyVision.ai pico2-ice with RP2350

Type "help()" for more information.

```
>>> from machine import Pin
```

```
>>> import ice
```

```
>>> file = open("top.bin", "br")
```

Additional testing with gateway-blue.bin

(env) devel@pi5-90:~/test-mpremote-042525 \$ cp gateway-blue.bin /media/devel/5221-0000/

(env) devel@pi5-90:~/test-mpremote-042525 \$ mpremote

Connected to MicroPython at /dev/ttyACM0

Use Ctrl-] or Ctrl-x to exit this shell

MicroPython v1.25.0 on 2025-04-24; tinyVision.ai pico2-ice with RP2350

Type "help()" for more information.

```
>>> from machine import Pin
>>> import ice
>>> file = open("gateway-blue.bin", "br")
>>> flash = ice.flash(miso=Pin(4), mosi=Pin(7), sck=Pin(6), cs=Pin(5))
>>> flash.write(file)
>>> fpga = ice.fpga(cdone=Pin(40), clock=Pin(21), creset=Pin(31), cram_cs=Pin(5),
cram_mosi=Pin(4), cram_sck=Pin(6), frequency=48)
>>> fpga.start()
True
>>> device disconnected
(env) devel@pi5-90:~/test-mpremote-042525 $ ls
env gateway.bin gateway-blue.bin top.bin top.bin.tmp virtp.sh
```

now the pico2-ice blinks blue.

```
(env) devel@pi5-90:~/test-mpremote-042525 $ cp gateway-red.bin /media/devel/5221-0000/
```

```
(env) devel@pi5-90:~/test-mpremote-042525 $ mpremote
```

Connected to MicroPython at /dev/ttyACM0

Use Ctrl-J or Ctrl-x to exit this shell

MicroPython v1.25.0 on 2025-04-24; tinyVision.ai pico2-ice with RP2350

Type "help()" for more information.

```
>>> from machine import Pin
>>> import ice
>>> file = open("gateway-red.bin", "br")
>>> flash = ice.flash(miso=Pin(4), mosi=Pin(7), sck=Pin(6), cs=Pin(5))
>>> flash.write(file)
>>> fpga = ice.fpga(cdone=Pin(40), clock=Pin(21), creset=Pin(31), cram_cs=Pin(5),
cram_mosi=Pin(4), cram_sck=Pin(6), frequency=48)
>>> fpga.start()
True
>>> device disconnected
(env) devel@pi5-90:~/test-mpremote-042525 $
```

now the pico2-ice blinks red