. Ultibo_Projects/picoultibo.sh

cd rp2040-freertos-project/build/

devel@pi4-27:~/rp2040-freertos-project/build $ openocd -f interface/raspberrypi-swd.cfg -f target/rp2040.cfg -c "program test-read/test-read.elf verify reset exit"
Open On-Chip Debugger 0.11.0-g610f137-dirty (2022-05-03-08:59)
Licensed under GNU GPL v2
For bug reports, read
**   http://openocd.org/doc/doxygen/bugs.html**
adapter speed: 1000 kHz

Info : Hardware thread awareness created
Info : Hardware thread awareness created
Info : RP2040 Flash Bank Command
Info : BCM2835 GPIO JTAG/SWD bitbang driver
Info : clock speed 1001 kHz
Info : SWD DPIDR 0x0bc12477
Info : SWD DLPIDR 0x00000001
Info : SWD DPIDR 0x0bc12477
Info : SWD DLPIDR 0x10000001
Info : rp2040.core0: hardware has 4 breakpoints, 2 watchpoints
Info : rp2040.core1: hardware has 4 breakpoints, 2 watchpoints
Info : starting gdb server for rp2040.core0 on 3333
Info : Listening on port 3333 for gdb connections
target halted due to debug-request, current mode: Thread
xPSR: 0xf1000000 pc: 0x000000ee msp: 0x20041f00
target halted due to debug-request, current mode: Thread
xPSR: 0xf1000000 pc: 0x000000ee msp: 0x20041f00
** Programming Started **
Info : RP2040 B0 Flash Probe: 2097152 bytes @10000000, in 512 sectors

target halted due to debug-request, current mode: Thread
xPSR: 0x01000000 pc: 0x0000012a msp: 0x20041f00
target halted due to debug-request, current mode: Thread
xPSR: 0x01000000 pc: 0x0000012a msp: 0x20041f00
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xPSR: 0x01000000 pc: 0x0000012a msp: 0x20041f00

target halted due to debug-request, current mode: Thread
xPSR: 0x01000000 pc: 0x0000012a msp: 0x20041f00
target halted due to debug-request, current mode: Thread
xPSR: 0x01000000 pc: 0x0000012a msp: 0x20041f00
Info : Writing 94208 bytes starting at 0x0
target halted due to debug-request, current mode: Thread
xPSR: 0x01000000 pc: 0x0000012a msp: 0x20041f00
target halted due to debug-request, current mode: Thread
xPSR: 0x01000000 pc: 0x0000012a msp: 0x20041f00
target halted due to debug-request, current mode: Thread
xPSR: 0x01000000 pc: 0x0000012a msp: 0x20041f00
target halted due to debug-request, current mode: Thread
xPSR: 0x01000000 pc: 0x0000012a msp: 0x20041f00
target halted due to debug-request, current mode: Thread
xPSR: 0x01000000 pc: 0x0000012a msp: 0x20041f00
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xPSR: 0x01000000 pc: 0x0000012a msp: 0x20041f00
target halted due to debug-request, current mode: Thread
xPSR: 0x01000000 pc: 0x0000012a msp: 0x20041f00
target halted due to debug-request, current mode: Thread
xPSR: 0x01000000 pc: 0x0000012a msp: 0x20041f00
target halted due to debug-request, current mode: Thread
xPSR: 0x01000000 pc: 0x0000012a msp: 0x20041f00
target halted due to debug-request, current mode: Thread
xPSR: 0x01000000 pc: 0x0000012a msp: 0x20041f00
** Programming Finished **
** Verify Started **
target halted due to debug-request, current mode: Thread
xPSR: 0x01000000 pc: 0x0000012a msp: 0x20041f00
target halted due to debug-request, current mode: Thread
xPSR: 0x01000000 pc: 0x0000012a msp: 0x20041f00
** Verified OK **
** Resetting Target **
shutdown command invoked

diff --git a/picotransfer/RPi3/QEMU/picoultibo.lpr
b/picotransfer/RPi3/QEMU/picoultibo.lpr
index 4abb865..c3253d9 100644
--- a/picotransfer/RPi3/QEMU/picoultibo.lpr
+++ b/picotransfer/RPi3/QEMU/picoultibo.lpr
@@ -11,6 +11,7 @@ program picoultibo ;

```
 uses
   RaspberryPi3,
+  USBCDCEthernet,
   GlobalConfig,   //Add the global config unit
   GlobalConst,
   GlobalTypes,
@@ -240,9 +241,9 @@ begin
       end;
     stOpen :
      begin
-        sleep(1000);
+        sleep(10000);
         res := SerialDeviceOpen (SerialDevice, 115200, SERIAL_DATA_8BIT,
SERIAL_STOP_1BIT, SERIAL_PARITY_NONE,
SERIAL_FLOW_DSR_DTR, 0, 0);
-         if res = ERROR_SUCCESS then state := stProcess0
+         if res = ERROR_SUCCESS then state := stProcess2
        else if res = ERROR_INVALID_PARAMETER then state := stFind;
       end;

@@ -392,8 +393,8 @@ begin
       end;
       //SerialDeviceFlush(SerialDevice,SERIAL_WRITE_NONE);

-
-         state:= stProcess3;
+        sleep(1000);
+         state:= stProcess4;


       end;
```

Project Options
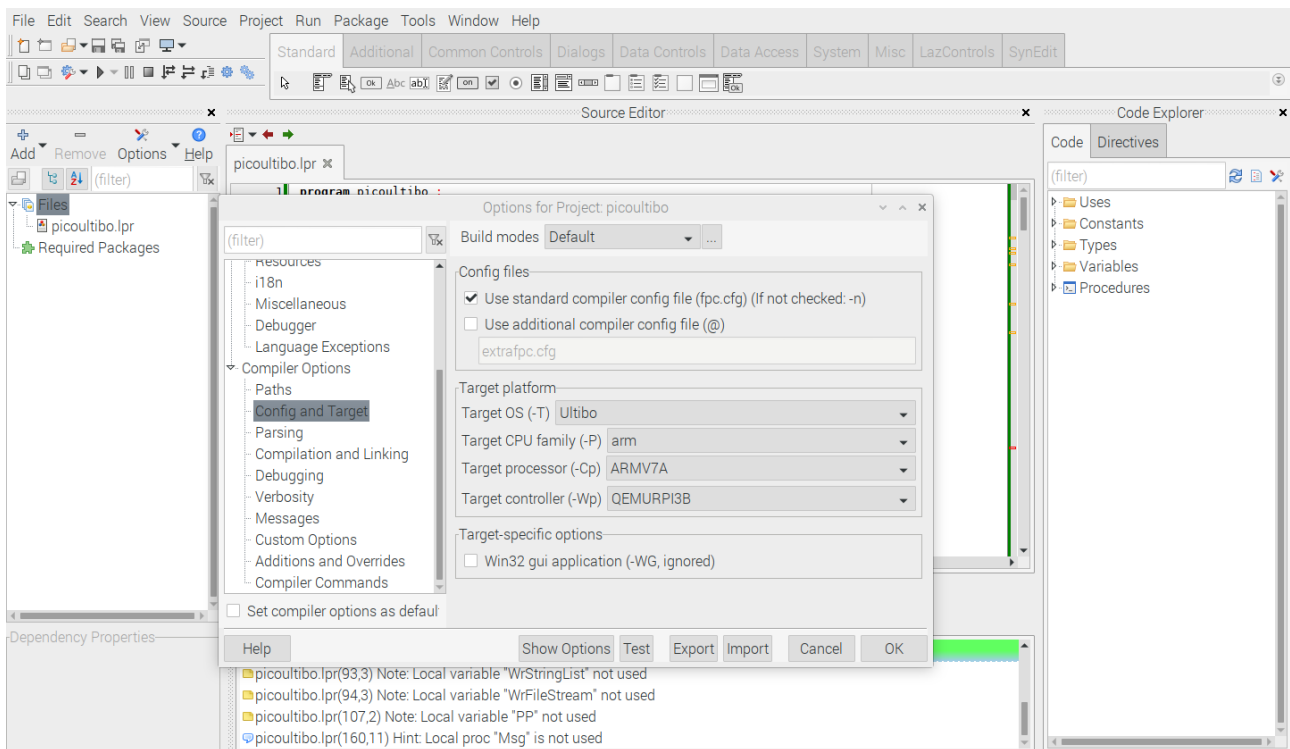
Compile
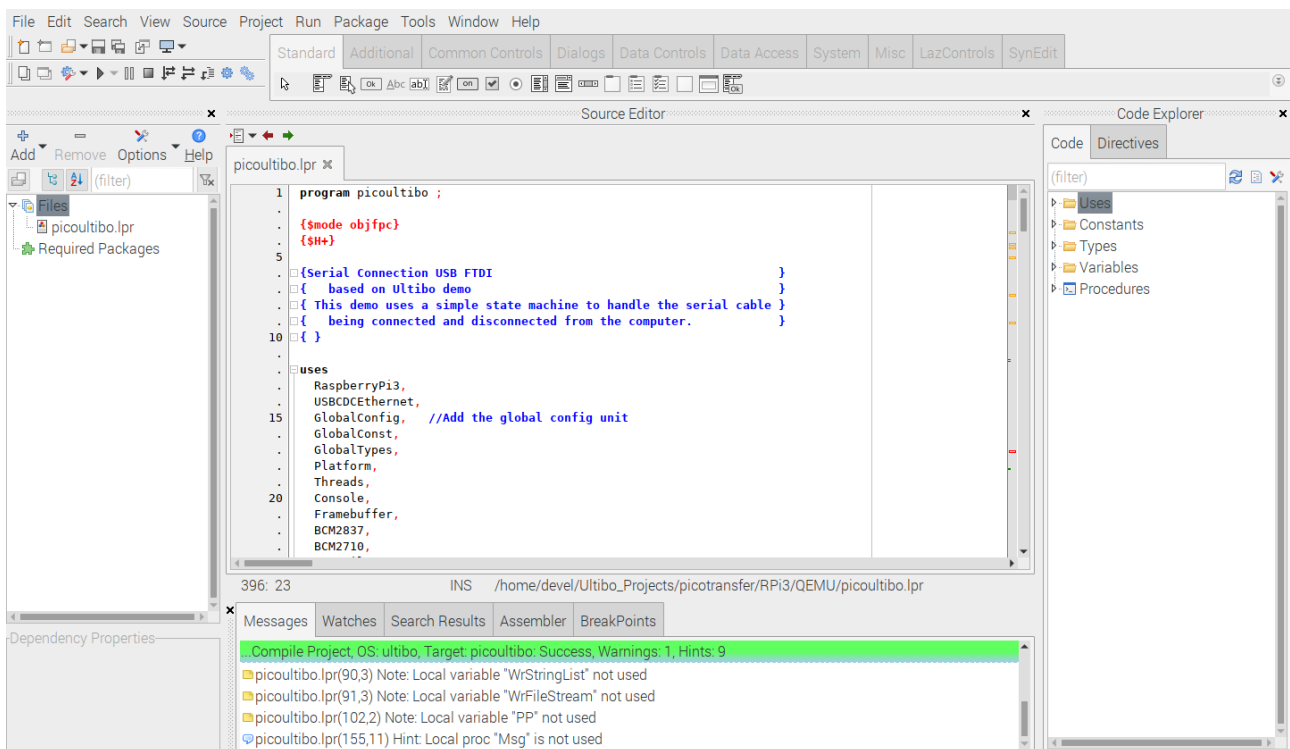
When the green bar the kernel7.qimg is created

Note: These commands need to be run as root.

sudo su

Contents of /home/devel/Ultibo_Projects/picoultibo.sh

export ULTIBO1=/home/devel/ultibo/core
export ULTIBO2=/home/devel/qemu-6.2.0-rpios/bin
export PICO=/home/devel/local/openocd/bin
export PATH=$ULTIBO1:$ULTIBO2:$PICO:$PATH
echo $PATH

. /home/devel/Ultibo_Projects/picoultibo.sh This sets the PATH to find
qemu-system-arm

cd Ultibo_Projects/picotransfer/RPi3/QEMU/

Contents of startqemu.sh

```
#!/bin/bash
qemu-system-arm -machine raspi2b -cpu cortex-a8 -kernel kernel7.qimg \
-netdev
user,id=net0,hostfwd=tcp::5080-:80,hostfwd=tcp::5023-:23,hostfwd=tcp::8050-:5050,hostfwd=udp::5069-:69,hostfwd=tcp::6050-:5050 -device usb-net,netdev=net0 \
 -drive file=disk.img,if=sd,format=raw --device usb-host,vendorid=0x2e8a,productid=0x000a
```

root@pi4-27:/home/devel/Ultibo_Projects/picotransfer/RPi3/QEMU#
./startqemu.sh
usbnet: failed control transaction: request 0x143 value 0xc index 0x0 length 0x0

xxx

Ultibo Core (Release: Beetroot Version: 2.5.001 Date: 15 April 2022)
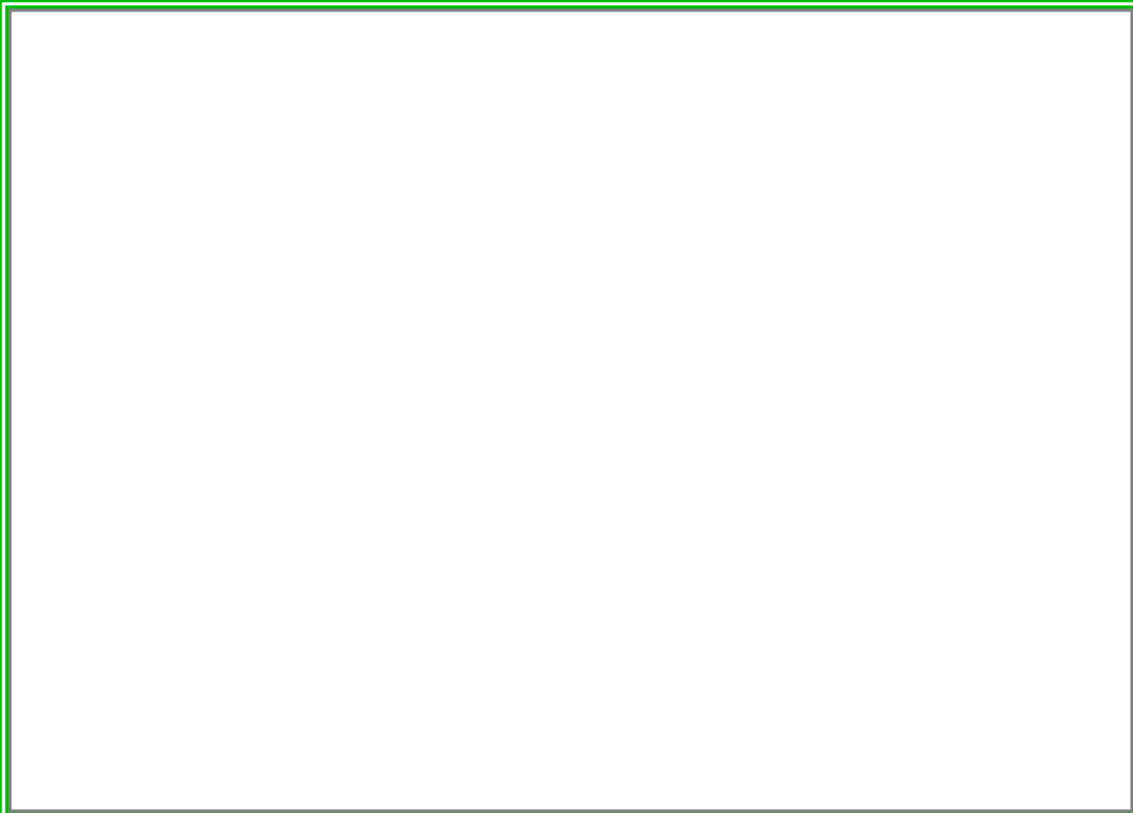
xxx

Machine   View

Ultibo Core (Release: Beetroot Version: 2.5.001 Date: 15 April 2022)

Welcome to PIco Test Program.
Serial Port State Finding

xxx

Ultibo Core (Release: Beetroot Version: 2.5.001 Date: 15 April 2022)

```
Welcome to PIco Test Program.
Serial Port State Finding
trying to find USB CDC ACM Serial
Serial Port State Opening
```

xxx

Ultibo Core (Release: Beetroot Version: 2.5.001 Date: 15 April 2022)

2275 NZIADw{I~@@\NA @±¢«»v¾f°@u 9ekúèéæç£@IDBB99S=' !4??73.'" 7@?DEF
2340 L[OA_@@@@@_@NB :µ@°¶@¾@¥l@ Ee[\úëëï@UJB>=;3KV?) 'KPMB4)#   ⁄68CBA
2405 J\OCU@@@}}~@D@ 0@p@q´@`d.ZZ_WRSúéôcOOGA<9572T9' 2=FDE<2-#4??>KK
2470 E]PCDi@xpe@@K9 ,@rzpokCC_bUVP5Vúå¦LOMFD?6.H^N4# &@70.⁄:8+-@85;jË
2535 C^SDI@nf.@@@@C* 4Ç@f@@}@aXUVF.4Tûé@POJGB>62TYG⁄ 2?:6-#⁄##9E>47vç
2600 A_UEE jpftfiVNR"-@@@@ywgY[Q6⁄39UúáiRPIDA:38YQ@' !19A0#   :73.0'yé
2665 ='WEHFDCDHITbbO.^XVccc'S=5427]¢å¿OUPGA;30GOL6" 8A0,2&   'B<4⁄3$tè
2730 :c[UTB<DQX_iec]<mp jg\K==ES1@@²Áã@QSKC>73IKF3#);?⁄,(&"(A@1--3,@é
2795 7c_is[Palssmlc_M¤«¢@@_¤«°²±⁻-±¾ôaTOHA:8LKA7 !>634*'$ 5>12+-3=Âë
2860 5e\ctscR>K'@zb_TÀúÒÎÉÀÀ¾´ ̄«¨@ ̄@QNLD;9MOC9*)455-11.$.093')⁄@@éë
2925 ;f]Fchdal@@obi^V¾ûÒÏÊÇÀ¾_³-@@@À@QPHB=LQD;1⁄*:>,)$ ",72.+#+⁄-@êë
2990 G ja=FV^]ck l@M'[W´×ÏÌÇÂº ̄¡@@¨ÉÝö_KHBANME<4+ &F:<⁄**"⁄⁄1*-2$)-,@êë
3055 ZsfH2?Reot@{oDXY@µ± ̄°³»flÓáèëëë¾KQMHQIC?9⁄"*67+22'$,1.-,*&!(+.@àà
3120 cykE,⁄9Mhd@kh=XX¾ëëëëëëëëëëëë£@RRQRJC@>⁄⁄!B=-,$)01-$"!!!&)-d@£
3185 lxrI6<16CW@wM>[W·ëëëëëëëëëëëëÛfNYRF?Tp44Pq@@8@3$.76>Q^cgd^K4,[@@
3250 xqvY@>>=IY{@@caT±ëëëëëëëëëëà@@RMAE@®¥t@t^Sc@Õ«gcfnl@@@@@@@@@y~
3315 @c{jJ>GKVbca@@bN ̄ëëëëëëëëëëÊ{MM@96x«@.⁄(+)&⁄J¼Ñ@l@@@@@@@@@@@@¦³@
3380 @G}q'JCGFYZSlofC¨ëëëëëëëëç³eRI@=Zzonh   ©Ú_L¥¾À¹®±-¡@@@@@@®
3445 @.qtn]KGHT'mle`,¢ëëëëëëëç²fOEKx@@@~d[@a@Ò¼9tdi}t@@@@¬ª±¶_·
3510 ¦+Jxpkb[[cksqdK @ëëëëëëß²~YLv@pkw@@@X   +   >L@ÑÀ>cCGcF[gGo@wk@Uc
3575 °-(Zwm j jkmpup[" @êëëëëê©@@@@@@@@x jaQ+   - 96}ÓËAmHTf@`^Qp}@fWD@
3640 _⁄(&Spnlnopua⁄ @éêÉµÔÝÊ\Zfokdb_[L:(⁄ <7sÌÜYgP'iXnnYxx]Vl+D
3705 Â4(⁄⁄3R'gd\NCRL péê£@@@~N744;A<4.,)!   ;9'»Þ@KRRULeRAy@w~@w}
3770 É9(@yaWUbEapeMJ.hèå@@zrhW@S4'(*,⁄"   79Q°f¿dFgYBlNM{p@aa⁄X
3835 Ï@(I_WH;W8SUZPR⁄∧äÑ~cSRTZTQ?*!"   #33=@¾ô@EnhXqg_lm@_MIP
3900 ÕG)EpL jdseZVWa`+Qfy]@@^HA@J5*#   "!   &008mµ×¥6ZKIkED@z js jIi
3965 ÚQ)5ihr^1]mce='!Jx}°»¨@ jWK@1⁄& '**)#   *.⁄7K_È¾QdMEi;A@h^@yo@
4030 à*(=CCL7??<U3(CEQ@¡ÁÏÐÊ»@zcM")"'&#   ⁄+.5;@_ÂlbYYlY_zEO]BA`
4095 ä@W0-+@PTOK;4-HA.B@¿ëëëëëÝ»@~K=R]_cE $!)704;=d®Â@bNPg;P@?9bBN[

XXX

```
Ultibo Core (Release: Beetroot Version: 2.5.001 Date: 15 April 2022)

Received a line: ""
Received a line: "-31,-17,-17,2,-26,28,1,1,-1,0,0,0,6,-13,14,41,32,-60,-52,28,-7,30,-1
,-3,2,31,-36,51,-10,3,12,-9,3,2,-26,4,14,5,21,-17,32,2,-106,8,32,0,-24,-13,1,30,13,5,-
8,-27,-10,-8,88,64,-58,-10,13,7,-8,50,"
Received a line: ""
Received a line: "-9,-2,2,1,3,-2,0,-9,65,1,0,0,0,2,-2,16,-5,9,13,8,-3,-10,-1,-3,2,20,-
19,15,12,-34,29,76,4,-1,-23,11,-21,64,-70,29,42,-47,8,17,-14,8,1,16,-2,13,-9,4,-38,-29
,29,7,-46,-16,-5,5,3,23,-4,-20,"
Received a line: ""
Received a line: "-8,-6,0,1,0,1,0,-5,68,-3,1,2,1,2,8,-14,50,7,5,-1,-2,-1,-4,-6,7,5,-10
,-12,0,-32,44,113,4,-8,0,20,-51,26,-7,-23,7,8,-20,5,24,15,33,26,-4,-39,-54,20,-87,-48,
-91,18,-1,-8,14,-7,3,-6,7,-44,"
Received a line: ""
Received a line: "-8,-6,0,0,0,1,1,-1,57,-1,-1,1,2,-1,-2,2,-29,1,-8,9,-1,-8,49,-15,-12,
-5,3,-1,4,5,38,72,2,10,-25,-13,6,6,-3,-55,-2,-13,-4,39,-1,10,-5,-12,-8,21,3,4,49,28,-5
2,-24,-11,18,-2,6,-10,10,-1,36,"
Received a line: ""
Received a line: "-7,-6,1,0,0,1,1,0,27,0,0,-2,1,-1,0,-4,5,-29,23,17,-3,-2,39,-2,-7,4,-
12,8,14,-18,2,-11,2,5,-37,-57,10,4,0,76,55,-7,-21,98,25,1,15,-1,3,-34,9,-22,36,29,25,1
8,-19,20,113,-43,-38,-2,-14,-76,"
Received a line: ""
Received a line: "-7,-8,0,0,0,1,0,1,29,-3,2,1,2,1,3,-8,10,10,-4,-29,16,-2,6,28,-5,-6,5
,-4,8,8,-1,0,-31,11,-14,-41,-14,2,104,-39,32,-20,-15,22,-26,-3,4,-6,17,-14,-22,12,-4,2
4,-85,13,26,-29,-2,-2,-6,3,18,62,"
Received a line: ""
Received a line: "-63,2,0,6,-1,6,4,7,-4,3,-5,-12,-7,21,4,-1,10,-12,-1,-33,20,-5,43,-48
,11,9,-10,-2,8,2,-3,3,6,-65,10,-33,-17,-36,8,2,-1,1,-5,-1,-9,-15,-17,-5,-20,-16,-4,-6,
2,-13,-62,-20,-26,0,-3,13,-5,-5,-2,45,"
Received a line: ""
```

Machine   View

Ultibo Core (Release: Beetroot Version: 2.5.001 Date: 15 April 2022)

Welcome to PIco Test Program.
Serial Port State Finding