

Short Report on operation of ARC controller

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1 – Hardware Byte Swapping

The hardware byte swapping does not seem to work. The command TBS (for testing the availability of the feature) returns ERROR as indicated in the extract below:

```
arcdrvTestTDL: Test Byte Swapping ...
arcdrvIoctl: channel=0 command=TBS arg=0EFAFDC0
arcdrvCommand(TBS)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000202 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00544253 (cmdData[1])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000001A (ERROR) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return ERROR
ioctl OK cmd=0129 'TBS' arg=-1 -1 -1 -1 -1 reply=00000000
Byte Swapping NOT supported
```

The command is sent after of course having downloaded both the PCI code (`pmc_noirq.1od`) and the clock pattern (`tim.1od`) as of delivery AUG2004.

2 – Controller Status Query

As of a mail of Scott dated 21Dec2004 the query of the Controller Status returns **TIMEOUT** whenever the controller is idle. When the controller is reading data, the status is returned as **READ** which is correct. See extract below:

```
arcdrvTestEXP: Read Controller Status (t=162484)
arcdrvIoctl: channel=0 command=RCS arg=0EFAF3D0
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000003 (TIMEOUT) try #50
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000003 (TIMEOUT) try #2
arcdrvCheckReplyFlags: return TIMEOUT
arcdrvGetHSTR: RD(0xFD040014) hstr=0x00000003
ioctl OK cmd=012C 'RCS' arg=-1 -1 -1 -1 -1 reply=00000003
```

While reading out one gets **READ** as expected:

```
arcdrvTestEXP: Read Controller Status (t=162608)
arcdrvIoctl: channel=0 command=RCS arg=0EFAF3D0
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000002B (READING)
CheckReplyFlags: return READING
arcdrvGetHSTR: RD(0xFD040014) hstr=0x0000002B
ioctl OK cmd=012C 'RCS' arg=-1 -1 -1 -1 -1 reply=0000002B
```

At the end of the readout, the status is also correct **DONE**:

```
arcdrvTestEXP: Read Controller Status (t=162623)
arcdrvIoctl: channel=0 command=RCS arg=0EFAF3D0
```

```

arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000000B (DONE)
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return DONE
arcdrvGetHSTR: RD(0xFD040014) hstr=0x00000003
ioctl OK cmd=012C 'RCS' arg=-1 -1 -1 -1 -1 reply=00000003

```

Reading it once more a couple of milliseconds later indicates again **TIMEOUT**.

3 – Performances

3.1 - Full Frame

This mode works correctly using either only output **__L** or **__R** or both outputs **__LR**.
The readout time for the whole chip [564 cols × 528 rows] is:

Output	Readout time [ms]	Readout time / pixel [μs]
__LR	210	0.7
__L	340	1.2
__R	340	1.2

3.2 – 1 Window 1 Output

This mode works correctly using either output **__L** or **__R**.
The readout time for a window [200 × 200] is:

Output	Location	Readout time [ms]	Readout time / pixel [μs]
__L	X=50; Y=50	120	2.7
	X=50; Y=300	140	3.1
	X=300; Y=50	140	3.1
	X=300; Y=300	180	4.0
__R	X=50; Y=50	120	2.7
	X=50; Y=300	140	3.1
	X=300; Y=50	140	3.1
	X=300; Y=300	180	4.0

One can note an increase of the readout time when the window is further from the serial register.

3.3 - 1 Window 2 Outputs

This mode does not work properly as the controller hangs for ever at approximately mid-readout:
Window [126x200] at (24;50) leading to 50400 pixels:

```

arcdrvTestEXP: Read pixel count =
arcdrvIoctl: channel=0 command=PRG arg=0EFAF3D0
arcdrvGetProgress: WR(0xFD040018) = 0x00008075 (hcvr
=arcdrvREAD_PCI_IMAGE_ADDR)
arcdrvGetProgress: RD(0xFD04001C) = 0x00004600 0x00000000 (lower, upper)
    → PixCnt = 00004600 = 17920
ioctl OK cmd=0208 'PRG' arg=-1 -1 -1 -1 -1 reply=00004600
17920 of 50400

```

Wait 10ms

```

arcdrvTestEXP: Read pixel count =
arcdrvIoctl: channel=0 command=PRG arg=0EFAF3D0
arcdrvGetProgress: WR(0xFD040018) = 0x00008075 (hcvr
=arcdrvREAD_PCI_IMAGE_ADDR)

```

```
arcdrvGetProgress: RD(0xFD04001C) = 0x00006200 0x00000000 (lower,upper)
    → PixCnt = 00006200 = 25088
ioctl OK cmd=0208 'PRG' arg=-1 -1 -1 -1 -1 reply=00006200
25088 of 50400
```

Wait 10ms

```
arcdrvTestEXP: Read pixel count =
arcdrvIoctl: channel=0 command=PRG arg=0EFAF3D0
arcdrvGetProgress: WR(0xFD040018) = 0x00008075 (hcvr
=arcdrvREAD_PCI_IMAGE_ADDR)
arcdrvGetProgress: RD(0xFD04001C) = 0x00006200 0x00000000 (lower,upper)
    → PixCnt = 00006200 = 25088
ioctl OK cmd=0208 'PRG' arg=-1 -1 -1 -1 -1 reply=00006200
25088 of 50400
```

Since no change, assume readout is finished:

```
arcdrvTestEXP: Read Controller Status (t=1242746)
arcdrvIoctl: channel=0 command=RCS arg=0EFAF3D0
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000002B (READING)
CheckReplyFlags: return READING
arcdrvGetHSTR: RD(0xFD040014) hstr=0x0000002B
ioctl OK cmd=012C 'RCS' arg=-1 -1 -1 -1 -1 reply=0000002B
```

```
arcdrvTestEXP: Read elapsed time =
arcdrvIoctl: channel=0 command=RET arg=0EFAF3D0
arcdrvCommand(RET)
ioctl NOK cmd=010B 'RET' arg=-1 -1 -1 -1 -1 reply=FFFFFFB8 error=-72
Read elapsed time: FAILED
```

Any further attempt to access the controller fails as the CPU hangs.

3.4 - 2 Windows 1 Output

This mode has not been tested yet.

Due to the current limitation of the controller firmware both windows must:

- not overlap

- have the same size (acceptable for ESO)

- must be vertically disconnected (not acceptable for chopping as both windows may rotate around each other due to the field rotation and hence share some rows).

The question related to the implementation of the 3rd point was submitted to B. Leach for investigation late September 2004. No answer was received yet.

4 – Vertical Smearing increase with exposure time

A vertical smearing of the image has been observed when increasing the exposure time as shown below:

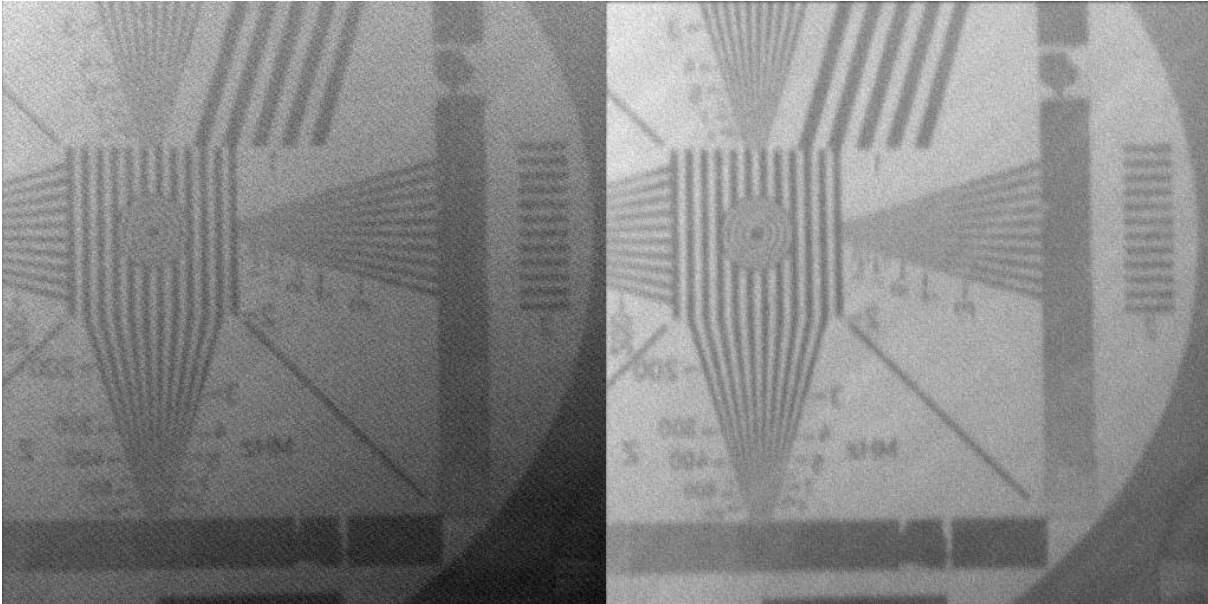


Figure 1&2 - ExposureTime = 1ms (Left) & 50ms (Right)



Figure 2&4 - Exposure Time = 200ms (Left) & 500ms (Right)

No explanation was found yet.

Annex 1 – Test TDL

```
ltd-> arcdrvTestTDL
arcdrvTestTDL: Reset ioctl arguments

arcdrvTestTDL: Open ARC device '/arc0' ... fd=30

arcdrvTestTDL: Set Controller Master PCI
arcdrvIoctl: channel=0 command=CMA arg=0EFADF00
ioctl OK cmd=0204 'CMA' arg=00000001 -1 -1 -1 -1 reply=FFFFFFFF

arcdrvTestTDL: Reset Controller
arcdrvIoctl: channel=0 command=RST arg=0EFADF00
arcdrvSetHCVR: WR(0xFD040018) = 0x00000085 (hcvr=arcdrvCLEAR_REPLY_FLAGS)
arcdrvSetHCVR: WR(0xFD040018) hcvr = 0x00000087
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000023 (SYSRESET) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return SYSRESET
ioctl OK cmd=0201 'RST' arg=-1 -1 -1 -1 -1 reply=FFFFFFFF

arcdrvTestTDL: Test Data Link to PCI ...
arcdrvIoctl: channel=0 command=TDL arg=0EFADF00
arcdrvCommand(TDL)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000103 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x0054444C (cmdData[1])
arcdrvCommand: WR(0xFD040020) = 0x00001234 (cmdData[2])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000012 (REPLY) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return REPLY
arcdrvCommand: WR(0xFD040018) = 0x00000083 (hcvr=READ_REPLY_VALUE)
arcdrvCommand: RD(0xFD04001C) = 0x00001234 (replyBuffer)
ioctl OK cmd=0115 'TDL' arg=00001234 -1 -1 -1 -1 reply=00001234
arcdrvIoctl: channel=0 command=TDL arg=0EFADF00
    Test Data Link (0) 0x001234: OK
    Test Data Link (1) 0x001235: OK
    Test Data Link (2) 0x001236: OK
    Test Data Link (3) 0x001237: OK
    Test Data Link (4) 0x001238: OK
    Test Data Link (5) 0x001239: OK
    Test Data Link (6) 0x00123A: OK
    Test Data Link (7) 0x00123B: OK
    Test Data Link (8) 0x00123C: OK
    Test Data Link (9) 0x00123D: OK

arcdrvTestTDL: Test Byte Swapping ...
arcdrvIoctl: channel=0 command=TBS arg=0EFADF00
arcdrvCommand(TBS)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000202 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00544253 (cmdData[1])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000001A (ERROR) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return ERROR
ioctl OK cmd=0129 'TBS' arg=-1 -1 -1 -1 -1 reply=00000000
    Byte Swapping NOT supported

arcdrvTestTDL: Write memory P00=0x5A5A
arcdrvIoctl: channel=0 command=WRM arg=0EFADF00
arcdrvCommand(WRM)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000104 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x0057524D (cmdData[1])
arcdrvCommand: WR(0xFD040020) = 0x00100000 (cmdData[2])
arcdrvCommand: WR(0xFD040020) = 0x00005A5A (cmdData[3])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000000A (DONE) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return DONE
ioctl OK cmd=0116 'WRM' arg=00100000 00005A5A -1 -1 -1 -1 reply=FFFFFFFF

arcdrvTestTDL: Write memory P01=0xA5A5
arcdrvIoctl: channel=0 command=WRM arg=0EFADF00
```

```
arcdrvCommand(WRM)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000104 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x0057524D (cmdData[1])
arcdrvCommand: WR(0xFD040020) = 0x00100001 (cmdData[2])
arcdrvCommand: WR(0xFD040020) = 0x0000A5A5 (cmdData[3])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000000A (DONE) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return DONE
ioctl OK cmd=0116 'WRM' arg=00100001 0000A5A5 -1 -1 -1 reply=FFFFFFFF
```

```
arcdrvTestTDL: Read memory P00 ...
arcdrvIoctl: channel=0 command=RDM arg=0EFAFDC0
arcdrvCommand(RDM)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000103 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x0052444D (cmdData[1])
arcdrvCommand: WR(0xFD040020) = 0x00100000 (cmdData[2])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000012 (REPLY) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return REPLY
arcdrvCommand: WR(0xFD040018) = 0x00000083 (hcvr=READ_REPLY_VALUE)
arcdrvCommand: RD(0xFD04001C) = 0x00005A5A (replyBuffer)
ioctl OK cmd=010A 'RDM' arg=00100000 -1 -1 -1 -1 reply=00005A5A
0x005A5A
```

```
arcdrvTestTDL: Read memory P01 ...
arcdrvIoctl: channel=0 command=RDM arg=0EFAFDC0
arcdrvCommand(RDM)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000103 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x0052444D (cmdData[1])
arcdrvCommand: WR(0xFD040020) = 0x00100001 (cmdData[2])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000012 (REPLY) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return REPLY
arcdrvCommand: WR(0xFD040018) = 0x00000083 (hcvr=READ_REPLY_VALUE)
arcdrvCommand: RD(0xFD04001C) = 0x0000A5A5 (replyBuffer)
ioctl OK cmd=010A 'RDM' arg=00100001 -1 -1 -1 -1 reply=0000A5A5
0x00A5A5
```

```
arcdrvTestTDL: Download PCI code './acetecARC-NOIRQ.bin' ... DONE
```

```
arcdrvTestTDL: Set Controller Master PCI
arcdrvIoctl: channel=0 command=CMA arg=0EFAFDC0
ioctl OK cmd=0204 'CMA' arg=00000001 -1 -1 -1 -1 reply=FFFFFFFF
```

```
arcdrvTestTDL: Reset Controller
arcdrvIoctl: channel=0 command=RST arg=0EFAFDC0
arcdrvSetHCVR: WR(0xFD040018) = 0x00000085 (hcvr=arcdrvCLEAR_REPLY_FLAGS)
arcdrvSetHCVR: WR(0xFD040018) hcvr = 0x00000087
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000023 (SYSRESET) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return SYSRESET
ioctl OK cmd=0201 'RST' arg=-1 -1 -1 -1 -1 reply=FFFFFFFF
```

```
arcdrvTestTDL: Test Byte Swapping ...
arcdrvIoctl: channel=0 command=TBS arg=0EFAFDC0
arcdrvCommand(TBS)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000202 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00544253 (cmdData[1])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000001A (ERROR) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return ERROR
ioctl OK cmd=0129 'TBS' arg=-1 -1 -1 -1 -1 reply=00000000
Byte Swapping NOT supported
```

```
arcdrvTestTDL: Set Controller Master TIM
arcdrvIoctl: channel=0 command=CMA arg=0EFAFDC0
ioctl OK cmd=0204 'CMA' arg=00000002 -1 -1 -1 -1 reply=FFFFFFFF
arcdrvTestTDL: Test Data Link to TIM ...
arcdrvIoctl: channel=0 command=TDL arg=0EFAFDC0
```

```
arcdrvCommand(TDL)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000203 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x0054444C (cmdData[1])
arcdrvCommand: WR(0xFD040020) = 0x00001234 (cmdData[2])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000012 (REPLY) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return REPLY
arcdrvCommand: WR(0xFD040018) = 0x00000083 (hcvr=READ_REPLY_VALUE)
arcdrvCommand: RD(0xFD04001C) = 0x00001234 (replyBuffer)
ioctl OK cmd=0115 'TDL' arg=00001234 -1 -1 -1 -1 reply=00001234
    Test Data Link (0) 0x001234: OK
    Test Data Link (1) 0x001235: OK
    Test Data Link (2) 0x001236: OK
    Test Data Link (3) 0x001237: OK
    Test Data Link (4) 0x001238: OK
    Test Data Link (5) 0x001239: OK
    Test Data Link (6) 0x00123A: OK
    Test Data Link (7) 0x00123B: OK
    Test Data Link (8) 0x00123C: OK
    Test Data Link (9) 0x00123D: OK
```

```
arcdrvTestTDL: Write Memory Y00=0x5A5A
arcdrvIoctl: channel=0 command=WRM arg=0EFAFDC0
arcdrvCommand(WRM)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000204 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x0057524D (cmdData[1])
arcdrvCommand: WR(0xFD040020) = 0x00400000 (cmdData[2])
arcdrvCommand: WR(0xFD040020) = 0x00005A5A (cmdData[3])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000000A (DONE) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return DONE
ioctl OK cmd=0116 'WRM' arg=00400000 00005A5A -1 -1 -1 -1 reply=FFFFFFFF
```

```
arcdrvTestTDL: Write Memory Y01=0xA5A5
arcdrvIoctl: channel=0 command=WRM arg=0EFAFDC0
arcdrvCommand(WRM)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000204 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x0057524D (cmdData[1])
arcdrvCommand: WR(0xFD040020) = 0x00400001 (cmdData[2])
arcdrvCommand: WR(0xFD040020) = 0x0000A5A5 (cmdData[3])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000000A (DONE) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return DONE
ioctl OK cmd=0116 'WRM' arg=00400001 0000A5A5 -1 -1 -1 -1 reply=FFFFFFFF
```

```
arcdrvTestTDL: Read Memory Y00 ...
arcdrvIoctl: channel=0 command=RDM arg=0EFAFDC0
arcdrvCommand(RDM)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000203 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x0052444D (cmdData[1])
arcdrvCommand: WR(0xFD040020) = 0x00400000 (cmdData[2])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000012 (REPLY) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return REPLY
arcdrvCommand: WR(0xFD040018) = 0x00000083 (hcvr=READ_REPLY_VALUE)
arcdrvCommand: RD(0xFD04001C) = 0x00005A5A (replyBuffer)
ioctl OK cmd=010A 'RDM' arg=00400000 -1 -1 -1 -1 reply=00005A5A
0x005A5A
```

```
arcdrvTestTDL: Read Memory Y01 ...
arcdrvIoctl: channel=0 command=RDM arg=0EFAFDC0
arcdrvCommand(RDM)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000203 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x0052444D (cmdData[1])
arcdrvCommand: WR(0xFD040020) = 0x00400001 (cmdData[2])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000012 (REPLY) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
```

```

CheckReplyFlags: return REPLY
arcdrvCommand: WR(0xFD040018) = 0x00000083 (hcvr=READ_REPLY_VALUE)
arcdrvCommand: RD(0xFD04001C) = 0x0000A5A5 (replyBuffer)
ioctl OK cmd=010A 'RDM' arg=00400001 -1 -1 -1 -1 reply=0000A5A5
0x00A5A5

arcdrvTestTDL: Download TIM code './acetecE2V57.clk' ... DONE

arcdrvTestTDL: Get Revision Number = arcdrvIoctl: channel=0 command=RRN arg=0EFAFDC0
arcdrvCommand(RRN)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000202 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x0052524E (cmdData[1])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000012 (REPLY) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return REPLY
arcdrvCommand: WR(0xFD040018) = 0x00000083 (hcvr=READ_REPLY_VALUE)
arcdrvCommand: RD(0xFD04001C) = 0x00312E30 (replyBuffer)
ioctl OK cmd=0120 'RRN' arg=-1 -1 -1 -1 -1 reply=00312E30
0x00312E30 = 1.0

arcdrvTestTDL: Get Controller Configuration =
arcdrvIoctl: channel=0 command=RCC arg=0EFAFDC0
arcdrvCommand(RCC)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000202 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00524343 (cmdData[1])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000012 (REPLY) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return REPLY
arcdrvCommand: WR(0xFD040018) = 0x00000083 (hcvr=READ_REPLY_VALUE)
arcdrvCommand: RD(0xFD04001C) = 0x00001490 (replyBuffer)
ioctl OK cmd=0108 'RCC' arg=-1 -1 -1 -1 -1 reply=00001490
0x00001490

arcdrvTestTDL: Set callback function 'arcdrvCBImageDataTransferred'
arcdrvIoctl: channel=0 command=CBA arg=0EFAFDC0
ioctl OK cmd=0205 'CBA' arg=0EA9A568 -1 -1 -1 -1 reply=FFFFFFFF

arcdrvTestTDL: Test Byte Swapping ...
arcdrvIoctl: channel=0 command=TBS arg=0EFAFDC0
arcdrvCommand(TBS)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000202 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00544253 (cmdData[1])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000001A (ERROR) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return ERROR
ioctl OK cmd=0129 'TBS' arg=-1 -1 -1 -1 -1 reply=00000000
Byte Swapping NOT supported

arcdrvTestTDL: Power On
arcdrvIoctl: channel=0 command=PON arg=0EFAFDC0
arcdrvCommand(PON)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000202 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00504F4E (cmdData[1])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000000A (DONE) try #20
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return DONE
ioctl OK cmd=0107 'PON' arg=-1 -1 -1 -1 -1 reply=FFFFFFFF

arcdrvTestTDL: Wait 1 s

arcdrvTestTDL: Power Off
arcdrvIoctl: channel=0 command=POF arg=0EFAFDC0
arcdrvCommand(POF)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000202 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00504F46 (cmdData[1])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000000A (DONE) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)

```



```
CheckReplyFlags: return DONE
ioctl OK cmd=0106 'POF' arg=-1 -1 -1 -1 -1 reply=FFFFFFFF

arcdrvTestTDL: Wait 1 s

arcdrvTestTDL: Power On
arcdrvIoctl: channel=0 command=PON arg=0EFAFDC0
arcdrvCommand(PON)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000202 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00504F4E (cmdData[1])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000000A (DONE) try #20
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return DONE
ioctl OK cmd=0107 'PON' arg=-1 -1 -1 -1 -1 reply=FFFFFFFF

arcdrvTestTDL: Set Controller Master PCI
arcdrvIoctl: channel=0 command=CMA arg=0EFAFDC0
ioctl OK cmd=0204 'CMA' arg=00000001 -1 -1 -1 -1 reply=FFFFFFFF

arcdrvTestTDL: Test Data Link to PCI
arcdrvIoctl: channel=0 command=TDL arg=0EFAFDC0
arcdrvCommand(TDL)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000103 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x0054444C (cmdData[1])
arcdrvCommand: WR(0xFD040020) = 0x0000123D (cmdData[2])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000012 (REPLY) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return REPLY
arcdrvCommand: WR(0xFD040018) = 0x00000083 (hcvr=READ_REPLY_VALUE)
arcdrvCommand: RD(0xFD04001C) = 0x0000123D (replyBuffer)
ioctl OK cmd=0115 'TDL' arg=0000123D -1 -1 -1 -1 reply=0000123D

arcdrvTestTDL: Set Controller Master TIM
arcdrvIoctl: channel=0 command=CMA arg=0EFAFDC0
ioctl OK cmd=0204 'CMA' arg=00000002 -1 -1 -1 -1 reply=FFFFFFFF

arcdrvTestTDL: Test Data Link to TIM
arcdrvIoctl: channel=0 command=TDL arg=0EFAFDC0
arcdrvCommand(TDL)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000203 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x0054444C (cmdData[1])
arcdrvCommand: WR(0xFD040020) = 0x0000123D (cmdData[2])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000012 (REPLY) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return REPLY
arcdrvCommand: WR(0xFD040018) = 0x00000083 (hcvr=READ_REPLY_VALUE)
arcdrvCommand: RD(0xFD04001C) = 0x0000123D (replyBuffer)
ioctl OK cmd=0115 'TDL' arg=0000123D -1 -1 -1 -1 reply=0000123D

arcdrvTestTDL: Set Controller Master UTL
arcdrvIoctl: channel=0 command=CMA arg=0EFAFDC0
ioctl OK cmd=0204 'CMA' arg=00000003 -1 -1 -1 -1 reply=FFFFFFFF

arcdrvTestTDL: Test Data Link to UTL
arcdrvIoctl: channel=0 command=TDL arg=0EFAFDC0
arcdrvCommand(TDL)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000303 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x0054444C (cmdData[1])
arcdrvCommand: WR(0xFD040020) = 0x0000123D (cmdData[2])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000002 (TIMEOUT) try #50
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000002 (TIMEOUT) try #2
arcdrvCheckReplyFlags: return TIMEOUT
ioctl OK cmd=0115 'TDL' arg=0000123D -1 -1 -1 -1 reply=00000303
    Error on TDL to Util board (0000123D 00000303)

arcdrvTestTDL: Set Controller Master TIM
arcdrvIoctl: channel=0 command=CMA arg=0EFAFDC0
ioctl OK cmd=0204 'CMA' arg=00000002 -1 -1 -1 -1 reply=FFFFFFFF
```

```
arcdrvTestTDL: Switch Peltier On
arcdrvIoctl: channel=0 command=TEC arg=0EFAFDC0
arcdrvCommand(TEC)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000203 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00544543 (cmdData[1])
arcdrvCommand: WR(0xFD040020) = 0x00000001 (cmdData[2])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000000A (DONE) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return DONE
ioctl OK cmd=0125 'TEC' arg=00000001 -1 -1 -1 -1 reply=FFFFFFFF
```

```
arcdrvTestTDL: Wait 1 s
```

```
arcdrvTestTDL: Read CCD Temperature flag ...
arcdrvIoctl: channel=0 command=RCT arg=0EFAFDC0
arcdrvCommand(RCT)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000202 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00524354 (cmdData[1])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000012 (REPLY) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return REPLY
arcdrvCommand: WR(0xFD040018) = 0x00000083 (hcvr=READ_REPLY_VALUE)
arcdrvCommand: RD(0xFD04001C) = 0x00000000 (replyBuffer)
ioctl OK cmd=0126 'RCT' arg=-1 -1 -1 -1 -1 reply=00000000
    CCD too hot !
```

```
arcdrvTestTDL: Wait while CCD Temperature not OK
    Wait 5 s
```

```
...
```

```
arcdrvTestTDL: Read CCD Temperature flag ...
arcdrvIoctl: channel=0 command=RCT arg=0EFAFDC0
arcdrvCommand(RCT)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000202 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00524354 (cmdData[1])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000012 (REPLY) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return REPLY
arcdrvCommand: WR(0xFD040018) = 0x00000083 (hcvr=READ_REPLY_VALUE)
arcdrvCommand: RD(0xFD04001C) = 0x00000000 (replyBuffer)
ioctl OK cmd=0126 'RCT' arg=-1 -1 -1 -1 -1 reply=00000000
    CCD too hot !
    Wait 5 s
```

```
...
```

```
arcdrvTestTDL: Read CCD Temperature flag ...
arcdrvIoctl: channel=0 command=RCT arg=0EFAFDC0
arcdrvCommand(RCT)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000202 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00524354 (cmdData[1])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000012 (REPLY) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return REPLY
arcdrvCommand: WR(0xFD040018) = 0x00000083 (hcvr=READ_REPLY_VALUE)
arcdrvCommand: RD(0xFD04001C) = 0x00000002 (replyBuffer)
ioctl OK cmd=0126 'RCT' arg=-1 -1 -1 -1 -1 reply=00000002
    CCD Temperature = -30C
```

```
arcdrvTestTDL: Wait 1 s
```

```
arcdrvTestTDL: Switch Peltier Off
arcdrvIoctl: channel=0 command=TEC arg=0EFAFDC0
arcdrvCommand(TEC)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000203 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00544543 (cmdData[1])
arcdrvCommand: WR(0xFD040020) = 0x00000000 (cmdData[2])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000000A (DONE) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return DONE
ioctl OK cmd=0125 'TEC' arg=00000000 -1 -1 -1 -1 reply=FFFFFFFF
```

```
arcdrvTestTDL: Wait 1 s

arcdrvTestTDL: Power Off
arcdrvIoctl: channel=0 command=POF arg=0EFAFDC0
arcdrvCommand(POF)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000202 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00504F46 (cmdData[1])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000000A (DONE) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return DONE
ioctl OK cmd=0106 'POF' arg=-1 -1 -1 -1 -1 reply=FFFFFFF

arcdrvTestTDL: Close device '/arc0' with fd=30

arcdrvTestTDL: done
value = 20 = 0x14
ltd->
```

Annex 2 – Test EXP

```
ltded -> arcdrvTestEXP 1
arcdrvTestEXP: Allocate memory for image [600x528] = 0x0E9FF000

arcdrvTestEXP: Open ARC device '/arc0' ... fd=30

arcdrvTestEXP: Reset ioctl arguments

arcdrvTestEXP: Set Controller Master PCI
arcdrvIoctl: channel=0 command=CMA arg=0EFAF3D0
ioctl OK cmd=0204 'CMA' arg=00000001 -1 -1 -1 -1 reply=FFFFFFFF

arcdrvTestEXP: Reset Controller
arcdrvIoctl: channel=0 command=RST arg=0EFAF3D0
arcdrvSetHCVR: WR(0xFD040018) = 0x00000085 (hcvr=arcdrvCLEAR_REPLY_FLAGS)
arcdrvSetHCVR: WR(0xFD040018) hcvr = 0x00000087
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000023 (SYSRESET) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return SYSRESET
ioctl OK cmd=0201 'RST' arg=-1 -1 -1 -1 -1 reply=FFFFFFFF

arcdrvTestEXP: Test Data Link to PCI
    Test Data Link (0) 0x123456: OK
    Test Data Link (1) 0x234567: OK
    Test Data Link (2) 0x345678: OK
    Test Data Link (3) 0x456789: OK
    Test Data Link (4) 0x56789A: OK
    Test Data Link (5) 0x6789AB: OK
    Test Data Link (6) 0x789ABC: OK
    Test Data Link (7) 0x89ABCD: OK
    Test Data Link (8) 0x9ABCDE: OK
    Test Data Link (9) 0xABCDEF: OK

arcdrvTestEXP: Download PCI code './acetecARC.bin' ... DONE

arcdrvTestEXP: Reset Controller
arcdrvIoctl: channel=0 command=RST arg=0EFAF3D0
arcdrvSetHCVR: WR(0xFD040018) = 0x00000085 (hcvr=arcdrvCLEAR_REPLY_FLAGS)
arcdrvSetHCVR: WR(0xFD040018) hcvr = 0x00000087
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000023 (SYSRESET) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return SYSRESET
ioctl OK cmd=0201 'RST' arg=-1 -1 -1 -1 -1 reply=FFFFFFFF

arcdrvTestEXP: Set Controller Master PCI
arcdrvIoctl: channel=0 command=CMA arg=0EFAF3D0
ioctl OK cmd=0204 'CMA' arg=00000001 -1 -1 -1 -1 reply=FFFFFFFF

arcdrvTestEXP: Test Byte Swapping ...
arcdrvIoctl: channel=0 command=TBS arg=0EFAF3D0
arcdrvCommand(TBS)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000202 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00544253 (cmdData[1])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000001A (ERROR) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return ERROR
ioctl OK cmd=0129 'TBS' arg=-1 -1 -1 -1 -1 reply=00000000
    Byte Swapping NOT supported

arcdrvTestEXP: Set Controller Master TIM
arcdrvIoctl: channel=0 command=CMA arg=0EFAF3D0
ioctl OK cmd=0204 'CMA' arg=00000002 -1 -1 -1 -1 reply=FFFFFFFF

arcdrvTestEXP: Test Data Link to TIM
    Test Data Link (0) 0x123456: OK
    Test Data Link (1) 0x234567: OK
    Test Data Link (2) 0x345678: OK
    Test Data Link (3) 0x456789: OK
    Test Data Link (4) 0x56789A: OK
    Test Data Link (5) 0x6789AB: OK
    Test Data Link (6) 0x789ABC: OK
    Test Data Link (7) 0x89ABCD: OK
```

Test Data Link (8) 0x9ABCDE: OK
Test Data Link (9) 0xABCDEF: OK

arcdrvTestEXP: Download TIM code './acetecE2V57.clk' ... DONE

arcdrvTestEXP: Get Revision Number =
arcdrvIoctl: channel=0 command=RRN arg=0EFAF3D0
arcdrvCommand(RRN)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000202 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x0052524E (cmdData[1])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000012 (REPLY) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return REPLY
arcdrvCommand: WR(0xFD040018) = 0x00000083 (hcvr=READ_REPLY_VALUE)
arcdrvCommand: RD(0xFD04001C) = 0x00312E30 (replyBuffer)
ioctl OK cmd=0120 'RRN' arg=-1 -1 -1 -1 -1 reply=00312E30
0x00312E30 = 1.0

arcdrvTestEXP: Switch Power On
arcdrvIoctl: channel=0 command=PON arg=0EFAF3D0
arcdrvCommand(PON)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000202 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00504F4E (cmdData[1])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000000A (DONE) try #20
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return DONE
ioctl OK cmd=0107 'PON' arg=-1 -1 -1 -1 -1 reply=FFFFFFFF

arcdrvTestEXP: Wait 1 s

arcdrvTestEXP: Switch Peltier On
arcdrvIoctl: channel=0 command=TEC arg=0EFAF3D0
arcdrvCommand(TEC)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000203 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00544543 (cmdData[1])
arcdrvCommand: WR(0xFD040020) = 0x00000001 (cmdData[2])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000000A (DONE) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return DONE
ioctl OK cmd=0125 'TEC' arg=00000001 -1 -1 -1 -1 reply=FFFFFFFF

arcdrvTestEXP: Wait 1 s

arcdrvTestEXP: Read CCD Temperature flag ...
arcdrvIoctl: channel=0 command=RCT arg=0EFAF3D0
arcdrvCommand(RCT)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000202 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00524354 (cmdData[1])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000012 (REPLY) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return REPLY
arcdrvCommand: WR(0xFD040018) = 0x00000083 (hcvr=READ_REPLY_VALUE)
arcdrvCommand: RD(0xFD04001C) = 0x00000000 (replyBuffer)
ioctl OK cmd=0126 'RCT' arg=-1 -1 -1 -1 -1 reply=00000000
CCD too hot !

arcdrvTestEXP: Wait while CCD Temperature not OK
Wait 5 s

...

arcdrvTestEXP: Read CCD Temperature flag ...
arcdrvIoctl: channel=0 command=RCT arg=0EFAF3D0
arcdrvCommand(RCT)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000202 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00524354 (cmdData[1])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000012 (REPLY) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return REPLY

```
arcdrvCommand: WR(0xFD040018) = 0x00000083 (hcvr=READ_REPLY_VALUE)
arcdrvCommand: RD(0xFD04001C) = 0x00000000 (replyBuffer)
ioctl OK cmd=0126 'RCT' arg=-1 -1 -1 -1 -1 reply=00000000
    CCD too hot !
    Wait 5 s
```

```
arcdrvTestEXP: Read CCD Temperature flag ...
arcdrvIoctl: channel=0 command=RCT arg=0EFAF3D0
arcdrvCommand(RCT)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000202 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00524354 (cmdData[1])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000012 (REPLY) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return REPLY
arcdrvCommand: WR(0xFD040018) = 0x00000083 (hcvr=READ_REPLY_VALUE)
arcdrvCommand: RD(0xFD04001C) = 0x00000002 (replyBuffer)
ioctl OK cmd=0126 'RCT' arg=-1 -1 -1 -1 -1 reply=00000002
    CCD Temperature = -30C
```

```
arcdrvTestEXP: Set callback function 'arcdrvCBImageDataTransferred'
arcdrvIoctl: channel=0 command=CBA arg=0EFAF3D0
ioctl OK cmd=0205 'CBA' arg=0EA9A568 -1 -1 -1 -1 reply=FFFFFFFF
```

```
arcdrvTestEXP: Set image memory buffer = 0x0E9FF000
arcdrvIoctl: channel=0 command=SDM arg=0EFAF3D0
arcdrvSetBufferAddresses: (0xFD040020) = 0x0000F000 (cmdData LW)
arcdrvSetBufferAddresses: (0xFD040020) = 0x00000E9F (cmdData HW)
arcdrvSetBufferAddresses: (0xFD040018) = 0x0000008D (hcvr=WRITE_PCI_ADDRESS)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000000B (DONE) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return DONE
ioctl OK cmd=0202 'SDM' arg=0E9FF000 -1 -1 -1 -1 reply=FFFFFFFF
```

```
arcdrvTestEXP: Get image memory buffer =
arcdrvIoctl: channel=0 command=GDM arg=0EFAF3D0
arcdrvGetDmaAddress: (0x0EF964E8) = 0x0E9FF000
ioctl OK cmd=0203 'GDM' arg=-1 -1 -1 -1 -1 reply=0E9FF000
0x0E9FF000
```

```
arcdrvTestEXP: Get Controller Configuration =
arcdrvIoctl: channel=0 command=RCC arg=0EFAF3D0
arcdrvCommand(RCC)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000202 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00524343 (cmdData[1])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000012 (REPLY) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return REPLY
arcdrvCommand: WR(0xFD040018) = 0x00000083 (hcvr=READ_REPLY_VALUE)
arcdrvCommand: RD(0xFD04001C) = 0x00001490 (replyBuffer)
ioctl OK cmd=0108 'RCC' arg=-1 -1 -1 -1 -1 reply=00001490
0x00001490
```

```
arcdrvTestEXP: Set Gain = 2 & Speed = Fast
arcdrvIoctl: channel=0 command=SGN arg=0EFAF3D0
arcdrvCommand(SGN)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000204 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x0053474E (cmdData[1])
arcdrvCommand: WR(0xFD040020) = 0x00000002 (cmdData[2])
arcdrvCommand: WR(0xFD040020) = 0x00000001 (cmdData[3])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000000A (DONE) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return DONE
ioctl OK cmd=0111 'SGN' arg=00000002 00000001 -1 -1 -1 reply=FFFFFFFF
```

```
Enter Image type (-1: End; 0=Full Frame; 1=Window): 0
Enter number of images: 1
Enter exposure time [ms]: 1200
```

```
Select Amplifier Outputs [_LR|__L|__R] : _LR
arcdrvTestEXP: Select Amplifier Output = _LR
arcdrvIoctl: channel=0 command=SOS arg=0EFAF3D0
```

```
arcdrvCommand(SOS)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000203 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00534F53 (cmdData[1])
arcdrvCommand: WR(0xFD040020) = 0x005F4C52 (cmdData[2])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000000A (DONE) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return DONE
ioctl OK cmd=011B 'SOS' arg=005F4C52 -1 -1 -1 -1 reply=FFFFFFFF

arcdrvTestEXP: Set Columns = 564
arcdrvIoctl: channel=0 command=COL arg=0EFAF3D0
arcdrvCommand(WRM)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000204 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x0057524D (cmdData[1])
arcdrvCommand: WR(0xFD040020) = 0x00400001 (cmdData[2])
arcdrvCommand: WR(0xFD040020) = 0x00000234 (cmdData[3])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000000A (DONE) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return DONE
ioctl OK cmd=0128 'COL' arg=00000234 -1 -1 -1 -1 reply=FFFFFFFF

arcdrvTestEXP: Set Rows = 528
arcdrvIoctl: channel=0 command=ROW arg=0EFAF3D0
arcdrvCommand(WRM)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000204 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x0057524D (cmdData[1])
arcdrvCommand: WR(0xFD040020) = 0x00400002 (cmdData[2])
arcdrvCommand: WR(0xFD040020) = 0x00000210 (cmdData[3])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000000A (DONE) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return DONE
ioctl OK cmd=0127 'ROW' arg=00000210 -1 -1 -1 -1 reply=FFFFFFFF

arcdrvTestEXP: Reset Windows
arcdrvIoctl: channel=0 command=SSS arg=0EFAF3D0
arcdrvCommand(SSS)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000205 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00535353 (cmdData[1])
arcdrvCommand: WR(0xFD040020) = 0x00000000 (cmdData[2])
arcdrvCommand: WR(0xFD040020) = 0x00000000 (cmdData[3])
arcdrvCommand: WR(0xFD040020) = 0x00000000 (cmdData[4])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000000A (DONE) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return DONE
ioctl OK cmd=0114 'SSS' arg=00000000 00000000 00000000 -1 -1 reply=FFFFFFFF

arcdrvTestEXP: Set Exposure Time = 1200 ms
arcdrvIoctl: channel=0 command=SET arg=0EFAF3D0
arcdrvCommand(SET)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000203 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00534554 (cmdData[1])
arcdrvCommand: WR(0xFD040020) = 0x000004B0 (cmdData[2])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000000A (DONE) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return DONE
ioctl OK cmd=010F 'SET' arg=000004B0 -1 -1 -1 -1 reply=FFFFFFFF

arcdrvTestEXP: Preset Image Data with ramp ... DONE

arcdrvTestEXP: Wipe Chip
arcdrvIoctl: channel=0 command=CLR arg=0EFAF3D0
arcdrvCommand(CLR)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000202 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00434C52 (cmdData[1])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000000A (DONE) try #0
```

```
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return DONE
ioctl OK cmd=0101 'CLR' arg=-1 -1 -1 -1 -1 reply=FFFFFFFF

arcdrvTestEXP: Start Exposure (t=162482)
arcdrvIoctl: channel=0 command=SEX arg=0EFAF3D0
arcdrvCommand(SEX)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000202 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00534558 (cmdData[1])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000000A (DONE) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return DONE
ioctl OK cmd=0110 'SEX' arg=-1 -1 -1 -1 -1 reply=FFFFFFFF

arcdrvTestEXP: Read Controller Status (t=162484)
arcdrvIoctl: channel=0 command=RCS arg=0EFAF3D0
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000003 (TIMEOUT) try #50
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000003 (TIMEOUT) try #2
arcdrvCheckReplyFlags: return TIMEOUT
arcdrvGetHSTR: RD(0xFD040014) hstr=0x00000003
ioctl OK cmd=012C 'RCS' arg=-1 -1 -1 -1 -1 reply=00000003

arcdrvTestEXP: Wait 1200ms

arcdrvTestEXP: Read Controller Status (t=162556)
arcdrvIoctl: channel=0 command=RCS arg=0EFAF3D0
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000002B (READING) try #46
CheckReplyFlags: return READING
arcdrvGetHSTR: RD(0xFD040014) hstr=0x0000002B
ioctl OK cmd=012C 'RCS' arg=-1 -1 -1 -1 -1 reply=0000002B

arcdrvTestEXP: Read pixel count =
arcdrvIoctl: channel=0 command=PRG arg=0EFAF3D0
arcdrvGetProgress: WR(0xFD040018) = 0x00008075 (hcvr =arcdrvREAD_PCI_IMAGE_ADDR)
arcdrvGetProgress: RD(0xFD04001C) = 0x00000000 0x00000000 (lower,upper)
-> PixCnt = 00000000 = 0
ioctl OK cmd=0208 'PRG' arg=-1 -1 -1 -1 -1 reply=00000000
0 of 297792

arcdrvTestEXP: Read Controller Status (t=162605)
arcdrvIoctl: channel=0 command=RCS arg=0EFAF3D0
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000002B (READING) try #0
CheckReplyFlags: return READING
arcdrvGetHSTR: RD(0xFD040014) hstr=0x0000002B
ioctl OK cmd=012C 'RCS' arg=-1 -1 -1 -1 -1 reply=0000002B

arcdrvTestEXP: Read pixel count =
arcdrvIoctl: channel=0 command=PRG arg=0EFAF3D0
arcdrvGetProgress: WR(0xFD040018) = 0x00008075 (hcvr =arcdrvREAD_PCI_IMAGE_ADDR)
arcdrvGetProgress: RD(0xFD04001C) = 0x00003E00 0x00000000 (lower,upper)
-> PixCnt = 00003E00 = 15872
ioctl OK cmd=0208 'PRG' arg=-1 -1 -1 -1 -1 reply=00003E00
15872 of 297792

arcdrvTestEXP: Read Controller Status (t=162608)
arcdrvIoctl: channel=0 command=RCS arg=0EFAF3D0
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000002B (READING) try #0
CheckReplyFlags: return READING
arcdrvGetHSTR: RD(0xFD040014) hstr=0x0000002B
ioctl OK cmd=012C 'RCS' arg=-1 -1 -1 -1 -1 reply=0000002B

arcdrvTestEXP: Read pixel count =
arcdrvIoctl: channel=0 command=PRG arg=0EFAF3D0
arcdrvGetProgress: WR(0xFD040018) = 0x00008075 (hcvr =arcdrvREAD_PCI_IMAGE_ADDR)
arcdrvGetProgress: RD(0xFD04001C) = 0x00012400 0x00000001 (lower,upper)
-> PixCnt = 00012400 = 74752
ioctl OK cmd=0208 'PRG' arg=-1 -1 -1 -1 -1 reply=00012400
74752 of 297792

arcdrvTestEXP: Read Controller Status (t=162611)
arcdrvIoctl: channel=0 command=RCS arg=0EFAF3D0
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000002B (READING) try #0
CheckReplyFlags: return READING
arcdrvGetHSTR: RD(0xFD040014) hstr=0x0000002B
ioctl OK cmd=012C 'RCS' arg=-1 -1 -1 -1 -1 reply=0000002B
```



```
arcdrvTestEXP: Read pixel count =
arcdrvIoctl: channel=0 command=PRG arg=0EFAF3D0
arcdrvGetProgress: WR(0xFD040018) = 0x00008075 (hcvr =arcdrvREAD_PCI_IMAGE_ADDR)
arcdrvGetProgress: RD(0xFD04001C) = 0x00020800 0x00000002 (lower,upper)
-> PixCnt = 00020800 = 133120
ioctl OK cmd=0208 'PRG' arg=-1 -1 -1 -1 -1 reply=00020800
133120 of 297792
```

```
arcdrvTestEXP: Read Controller Status (t=162614)
arcdrvIoctl: channel=0 command=RCS arg=0EFAF3D0
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000002B (READING) try #0
CheckReplyFlags: return READING
arcdrvGetHSTR: RD(0xFD040014) hstr=0x0000002B
ioctl OK cmd=012C 'RCS' arg=-1 -1 -1 -1 -1 reply=0000002B
```

```
arcdrvTestEXP: Read pixel count =
arcdrvIoctl: channel=0 command=PRG arg=0EFAF3D0
arcdrvGetProgress: WR(0xFD040018) = 0x00008075 (hcvr =arcdrvREAD_PCI_IMAGE_ADDR)
arcdrvGetProgress: RD(0xFD04001C) = 0x0002EC00 0x00000002 (lower,upper)
-> PixCnt = 0002EC00 = 191488
ioctl OK cmd=0208 'PRG' arg=-1 -1 -1 -1 -1 reply=0002EC00
191488 of 297792
```

```
arcdrvTestEXP: Read Controller Status (t=162617)
arcdrvIoctl: channel=0 command=RCS arg=0EFAF3D0
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000002B (READING) try #0
CheckReplyFlags: return READING
arcdrvGetHSTR: RD(0xFD040014) hstr=0x0000002B
ioctl OK cmd=012C 'RCS' arg=-1 -1 -1 -1 -1 reply=0000002B
```

```
arcdrvTestEXP: Read pixel count =
arcdrvIoctl: channel=0 command=PRG arg=0EFAF3D0
arcdrvGetProgress: WR(0xFD040018) = 0x00008075 (hcvr =arcdrvREAD_PCI_IMAGE_ADDR)
arcdrvGetProgress: RD(0xFD04001C) = 0x0003D200 0x00000003 (lower,upper)
-> PixCnt = 0003D200 = 250368
ioctl OK cmd=0208 'PRG' arg=-1 -1 -1 -1 -1 reply=0003D200
250368 of 297792
```

```
arcdrvTestEXP: Read Controller Status (t=162620)
arcdrvIoctl: channel=0 command=RCS arg=0EFAF3D0
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000002B (READING) try #0
CheckReplyFlags: return READING
arcdrvGetHSTR: RD(0xFD040014) hstr=0x0000002B
ioctl OK cmd=012C 'RCS' arg=-1 -1 -1 -1 -1 reply=0000002B
```

```
arcdrvTestEXP: Read pixel count =
arcdrvIoctl: channel=0 command=PRG arg=0EFAF3D0
arcdrvGetProgress: WR(0xFD040018) = 0x00008075 (hcvr =arcdrvREAD_PCI_IMAGE_ADDR)
arcdrvGetProgress: RD(0xFD04001C) = 0x00048B40 0x00000004 (lower,upper)
-> PixCnt = 00048B40 = 297792
ioctl OK cmd=0208 'PRG' arg=-1 -1 -1 -1 -1 reply=00048B40
297792 of 297792
```

```
arcdrvTestEXP: Read Controller Status (t=162623)
arcdrvIoctl: channel=0 command=RCS arg=0EFAF3D0
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000000B (DONE) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return DONE
arcdrvGetHSTR: RD(0xFD040014) hstr=0x00000003
ioctl OK cmd=012C 'RCS' arg=-1 -1 -1 -1 -1 reply=00000003
```

arcdrvTestEXP: Readout Time = 210 ms = 0.705 us/pix

```
arcdrvTestEXP: Read Controller Status (t=162624)
arcdrvIoctl: channel=0 command=RCS arg=0EFAF3D0
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000003 (TIMEOUT) try #50
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000003 (TIMEOUT) try #2
arcdrvCheckReplyFlags: return TIMEOUT
arcdrvGetHSTR: RD(0xFD040014) hstr=0x00000003
ioctl OK cmd=012C 'RCS' arg=-1 -1 -1 -1 -1 reply=00000003
```

```
arcdrvTestEXP: Read elapsed time =
arcdrvIoctl: channel=0 command=RET arg=0EFAF3D0
arcdrvCommand (RET)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000202 (cmdData[0])
```

```
arcdrvCommand: WR(0xFD040020) = 0x00524554 (cmdData[1])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000012 (REPLY) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return REPLY
arcdrvCommand: WR(0xFD040018) = 0x00000083 (hcvr=READ_REPLY_VALUE)
arcdrvCommand: RD(0xFD04001C) = 0x000004AF (replyBuffer)
ioctl OK cmd=010B 'RET' arg=-1 -1 -1 -1 -1 reply=000004AF
1199 ms
```

arcdrvTestEXP: Taken 1 images in 210 ms

```
arcdrvTestEXP: Reorder image
SOS=_LR ==> De-interlace LR & Flip right half
```

```
arcdrvTestEXP: Write FITS image [564x528] to file 'arcdrvTest162679.fits'
arcdrvWriteFits: Write FITS header ... DONE
arcdrvWriteFits: Swap 297792 pixels
arcdrvWriteFits: Written 297792 pixels
arcdrvWriteFits: Fill up with 576 bytes ... DONE
```

Enter Image type (-1: End; 0=Full Frame; 1=Window): -1

TERMINATE

```
arcdrvTestEXP: Read CCD Temperature flag ...
arcdrvIoctl: channel=0 command=RCT arg=0EFAF3D0
arcdrvCommand(RCT)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000202 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00524354 (cmdData[1])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x00000012 (REPLY) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return REPLY
arcdrvCommand: WR(0xFD040018) = 0x00000083 (hcvr=READ_REPLY_VALUE)
arcdrvCommand: RD(0xFD04001C) = 0x00000002 (replyBuffer)
ioctl OK cmd=0126 'RCT' arg=-1 -1 -1 -1 -1 reply=00000002
CCD Temperature = -30C
```

arcdrvTestEXP: Wait 1 s

```
arcdrvTestEXP: Switch Peltier Off
arcdrvIoctl: channel=0 command=TEC arg=0EFAF3D0
arcdrvCommand(TEC)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000203 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00544543 (cmdData[1])
arcdrvCommand: WR(0xFD040020) = 0x00000000 (cmdData[2])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000000A (DONE) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return DONE
ioctl OK cmd=0125 'TEC' arg=00000000 -1 -1 -1 -1 reply=FFFFFFFF
```

```
arcdrvTestEXP: Switch Power Off
arcdrvIoctl: channel=0 command=POF arg=0EFAF3D0
arcdrvCommand(POF)
arcdrvCommand: WR(0xFD040018) = 0x00000085 (hcvr=CLEAR_REPLY_FLAGS)
arcdrvCommand: WR(0xFD040020) = 0x00000202 (cmdData[0])
arcdrvCommand: WR(0xFD040020) = 0x00504F46 (cmdData[1])
arcdrvCommand: WR(0xFD040018) = 0x000000B1 (hcvr=WRITE_COMMAND)
arcdrvCheckReplyFlags: RD(0xFD040014) hstr=0x0000000A (DONE) try #0
arcdrvCheckReplyFlags: WR(0xFD040018) hcvr=0x00000085 (CLEAR_REPLY_FLAGS)
CheckReplyFlags: return DONE
ioctl OK cmd=0106 'POF' arg=-1 -1 -1 -1 -1 reply=FFFFFFFF
```

arcdrvTestEXP: Free allocated memory

arcdrvTestEXP: Close device '/arc0' with fd=30

```
arcdrvTestEXP: done
value = 20 = 0x14
ltd->
```

__oOo__