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Procedure

Troubleshooting a stuck pixel on a TH2 head

Background

A stuck pixel on a Thermal 2 head (TH2) shows the following symptoms:

- The error message `[03567] System: The beam-balance has failed` appears
- A sequence of unusual behavior appears. For an example, see the sample readout:

```
TH2 > stroke cal
The beam-pointing has settled!
The laser power has been calibrated!
LDD: Power Setpoint=779 Power Minimum=38
BBS: Stroke Offset=16, Stroke Width=208
BBS: Beam Slope=3%, Beam Curve=-2%, Maximum Error=2.000%
BBS: Iteration #0: SensorGain=372, SensorOffset=2048, OnHeight=942,OffHeight=814
BBS: Iteration #1: SensorGain=2976, SensorOffset=878, OnHeight=2538,
OffHeight=1511
BBS: Pulse heights @ maximum light level
016: 0949 0948 0961 0980 0991 1003 1005 0998 0996 1009 1022 1029
040: 1037 1046 1038 1022 1015 1017 1018 1023 1025 1030 1026 1013
064: 1004 1015 1016 1019 1021 1035 1041 1046 1050 1049 1033 1023
088: 1030 1057 1059 1063 1053 1060 1039 1031 1030 1018 1022 1006
112: 1006 1030 0531 1074 1031 1039 1032 1026 1019 1024 1018 1013
136: 1016 1014 1003 0995 0995 1009 1014 1012 1002 1005 0995 0998
160: 1011 1029 1041 1031 1033 1043 1036 1024 1022 1024 1023 1023
184: 1018 1014 0994 1000 0996 0985 0962 0955 0949 0971 0986 0994
208: 0984 0962 0941 0931 0942 0962 0975 0972
BBS: Pulse heights ( adjusted ) @ maximum light level
016: 0930 0930 0943 0963 0975 0988 0990 0985 0984 0997 1011 1019
040: 1028 1038 1031 1016 1009 1012 1014 1020 1023 1028 1025 1013
064: 1005 1016 1018 1022 1024 1039 1046 1051 1056 1056 1040 1031
088: 1038 1066 1069 1073 1064 1071 1050 1043 1042 1030 1035 1019
112: 1019 1044 0538 1089 1046 1054 1048 1042 1035 1040 1034 1029
136: 1033 1031 1020 1012 1012 1026 1031 1029 1019 1022 1012 1015
160: 1028 1047 1059 1049 1051 1061 1054 1041 1039 1041 1040 1040
184: 1034 1030 1010 1016 1011 1000 0976 0969 0962 0984 0999 1007
```

These are the values for Swath offset and width, Slope, Curve, and Beam balance maximum error.

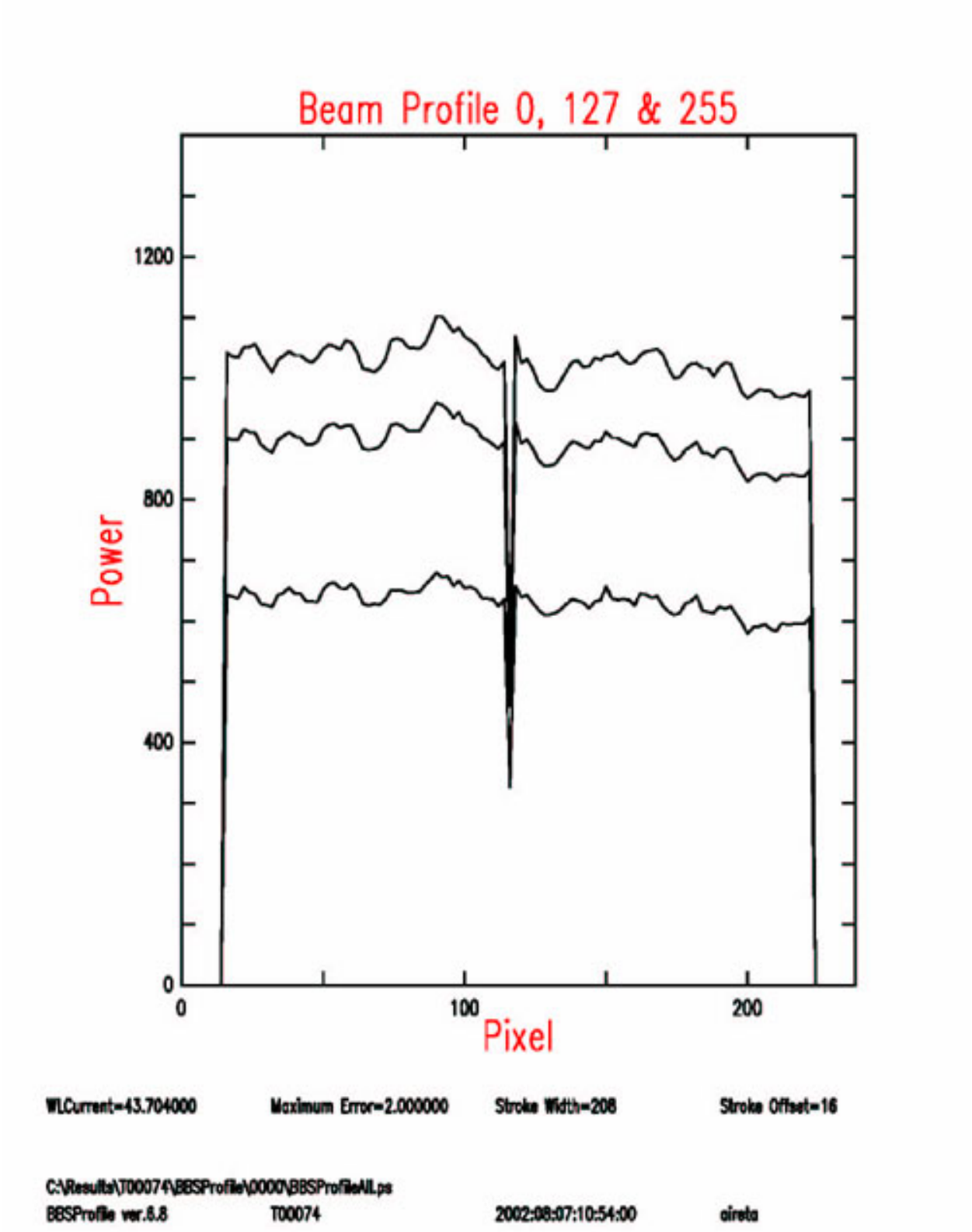
When a pixel is stuck on or off, the value of that pixel pair is half of the value of other pixels pairs.

```
208: 0997 0974 0952 0942 0953 0972 0985 0982
BBS: Pulse heights @ minimum light level
016: 0606 0605 0611 0634 0633 0640 0637 0640 0636 0651 0657 0663
040: 0662 0669 0658 0650 0635 0646 0652 0654 0654 0649 0658 0652
064: 0638 0640 0645 0646 0645 0653 0653 0661 0662 0660 0652 0648
088: 0647 0662 0653 0665 0657 0659 0647 0648 0645 0637 0634 0634
112: 0622 0645 0329 0668 0649 0651 0644 0640 0635 0638 0633 0626
136: 0629 0629 0621 0618 0610 0618 0622 0633 0616 0614 0617 0625
160: 0624 0642 0642 0635 0635 0632 0635 0632 0630 0637 0634 0640
184: 0623 0612 0603 0614 0609 0608 0596 0592 0580 0600 0604 0613
208: 0604 0584 0583 0575 0581 0597 0606 0607
BBS: Pulse heights ( adjusted ) @ minimum light level
016: 0593 0593 0600 0623 0622 0630 0628 0631 0628 0643 0650 0656
040: 0656 0663 0653 0646 0631 0643 0649 0652 0652 0648 0657 0652
064: 0638 0641 0646 0648 0647 0655 0656 0664 0666 0664 0656 0653
088: 0652 0667 0659 0671 0663 0666 0654 0655 0652 0645 0642 0642
112: 0630 0654 0333 0677 0658 0660 0653 0650 0645 0648 0643 0636
136: 0639 0639 0631 0628 0620 0628 0632 0644 0626 0624 0627 0636
160: 0635 0653 0653 0646 0646 0643 0646 0642 0640 0647 0644 0650
184: 0633 0622 0612 0623 0618 0617 0605 0600 0588 0608 0612 0621
208: 0612 0591 0590 0582 0587 0603 0612 0613
BBS: HighMinimum=538, LowMaximum=677, Setpoint=607, MaximumError=12
BBS: Pulse heights ( adjusted ) @ target profile
016: 0619 0618 0618 0617 0616 0616 0615 0614 0614 0613 0613 0612
040: 0612 0611 0611 0610 0610 0609 0609 0608 0608 0607 0607 0606
064: 0606 0605 0605 0605 0604 0604 0603 0603 0603 0602 0602 0602
088: 0601 0601 0601 0600 0600 0600 0600 0599 0599 0599 0599 0598
112: 0598 0598 0598 0598 0598 0597 0597 0597 0597 0597 0597 0597
136: 0596 0596 0596 0596 0596 0596 0596 0596 0596 0596 0596 0596
160: 0596 0596 0596 0596 0596 0596 0596 0596 0596 0596 0596 0596
[03567] System: The beam-balance has failed
*** Command Failure ***
184: 0597 0597 0597 0597 0597 0597 0597 0598 0598 0598 0598 0598
208: 0598 0599 0599 0599 0599 0600 0600 0600
LDD: Laser on time updated ( 940518 seconds )
```

Procedure

1. Open Splot and run **`bbsprofile.spt`**. See Figure 1 for a sample of the resulting graph.

Figure 1: Sample graph from `bbsprofile.spt`


Beam Profile 0, 127 & 255
1200
800
400
0
Power
0
100
200
Pixel
WLCurrent=43.704000
Maximum Error=2.000000
Stroke Width=208
Stroke Offset=16
C:\Results\T00074\BBSProfile\0000\BBSProfileAll.ps
BBSProfile ver.8.8
T00074
2002:08:07:10:54:00
oireta

2. If the problem is on a lower or higher value pixel, it may be possible to chop pixels. See the related document *Chopping pixels on a TH2 head*, available from the Troubleshooting page of the Thermal 2 TechPlanet site.

Chopping pixels is a temporary solution only. You must replace the head. For detailed instructions on how to replace a head refer to the flowchart *How to Return a Head*, available from the Troubleshooting page of the Thermal 2 TechPlanet site.

If you have any comments or questions, contact alvaro.ireta@creo.com.

About Creo

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