

EC150 irga+sonic at BAO flux station comms problem

The data looks pretty bad. One would expect bad winds and co2, h2o because of the snow, but it seems to be effecting the data format too.

The UART for that serial port /dev/ttyS4, is reporting data errors. Here's some cktty's done a few second apart. You can see the "fe" (framing errors) count is growing:

```
cktty 4
4: uart:XR16850 mmio:0x10800000 irq:123 tx:690 rx:56562450 fe:4336624 RTS|CTS|DTR
root@bao config# cktty 4
4: uart:XR16850 mmio:0x10800000 irq:123 tx:690 rx:56564384 fe:4337087 RTS|CTS|DTR
root@bao config# cktty 4
4: uart:XR16850 mmio:0x10800000 irq:123 tx:690 rx:56565358 fe:4337256 RTS|CTS|DTR
```

To me this looks like a "water in the connector" problem.

data_dump shows the bad data. The records should all be 60 bytes, but this dump shows record length of 56, 57, 55 and 53 bytes.

The EC150 on the bao flux station is configured for binary mode. This is a new option provided by Campbell, and the first time we have used it (to reduce the data sent over the cellular connection).

```
data_dump -i 7,30 -H
```

```
2015 02 26 00:59:38.8464 0.1007 56 de 82 67 ff b3 f9 bf f3 d8 12 3e 00 21 f6 03 06 04 0c f8 fc f8 74 c5 ce 14 c3 40 fc 86 80 00 f9 fb 2b b3 9a fc fa 3e 37
4f e1 c3 3c 19 18 80 e0 47 e3 30 60 6f ff 55 aa
2015 02 26 00:59:38.9457 0.0993 57 9f 4e cc 45 da 01 c0 de 1c a8 bf 00 61 03 c0 80 00 80 80 ec f0 74 c5 cc df 34 3f 08 86 00 00 ff bf a5 f6 a7 42 95 f3 fc
3c f1 69 f8 3c 90 17 80 e0 9f 84 03 00 df f8 55 aa
2015 02 26 00:59:39.0456 0.09993 55 e3 9b 28 3e 19 bf 00 c0 45 7f 44 02 22 d5 bf 00 00 00 80 c0 84 7a 35 7a 9a 3e 1f 0c 86 00 00 ff 2b b3 9a fc 12 b8
3c 37 ab f8 3c 19 16 80 e0 44 36 08 78 ff fb 55 aa
2015 02 26 00:59:39.1458 0.1002 53 f1 fc 61 7a 0b db bf 70 09 00 01 4a 05 03 80 00 80 80 48 8f 54 5b 24 c3 40 fc 86 80 00 ff 2b b3 9a bc f4 dc 3c bf 95
f7 3c a6 17 80 e0 90 84 30 60 7e f4 55 aa
```

This data looks basically non-recoverable to me.