Adjusting Licor 7500 sampling and baud rates

The 2m licor connected to /dev/ttyS2 was removed today, and the licors at 16 and 43 meters were reconnected to ports /dev/ttyS17 and /dev/ttyS11 by a BEACHON helper.

By checking the serial numbers, with the `(Coef ?)` command, and comparing against the earlier LICOR log entry, we could determine remotely what unit is connected to what port. Note that the licors at 16 and 43 meters are switched from the previous configuration.

port	height	SN
ttyS2	removed	
ttyS7	7m	1166
ttyS11	43m	1164
ttyS14	30m	1163
ttyS17	16m	1167

The data system from the time the licors on port 11 and 17 were enabled on Dec 2, until the next morning, Dec 3 at 10:26 AM MST was configured in the old way, so the data from the licor on port 17, SN 1167 was given an id of 1,310, and the data from the licor on port 11, SN 1164 was given an id of 1,510. So the licor data at 43 meters and 16 meters is cross-identified during that time period.

Basic 7500 configuration:

```
(Outputs (RS232 (EOL "0A") (Labels FALSE) (DiagRec FALSE) (Ndx FALSE) (Aux FALSE) (Cooler FALSE) (CO2Raw TRUE)
(CO2D TRUE) (H2ORaw TRUE) (H2OD TRUE) (Temp  TRUE) (Pres TRUE) (DiagVal TRUE)))
```

First test: 4 licors running at 10Hz, 19200 baud

```
(Outputs (BW 10) (RS232 (Freq 10.0)  (Baud 19200)))
```

This resulted in around 1200 spurious interrupts being reported in /var/log/isfs/kernel

Second test: 4 licors running at 5 Hz, 19200 baud

```
(Outputs (BW 5) (RS232 (Freq 5.0)  (Baud 19200)))
```

This resulted in around 300 spurious interrupts/sec being reported in /var/log/isfs/kernel

Third test: 4 licors running at 5 Hz, 9600 baud

```
(Outputs (BW 5) (RS232 (Freq 5.0)  (Baud 9600)))
```

This resulted in usually less than 50 spurious interrupts/sec being reported in /var/log/isfs/kernel. The kernel does not report more than 50/s, so there are very few reports of spurious interrupts showing up in /var/log/isfs/kernel.

Left it running at this setting.

Current values from /proc/tty/driver/serial:

```
2: uart:XScale mmio:0x40700000 irq:13 tx:543 rx:1136277465 fe:1947 RTS|DTR

7: uart:ST16654 port:F1000110 irq:104 tx:1111 rx:1153977325 fe:41917 RTS|DTR

11: uart:ST16654 port:F1000130 irq:104 tx:1585 rx:3762900 fe:21542 RTS|DTR

14: uart:ST16654 port:F1000148 irq:104 tx:1549 rx:575482383 fe:3996 RTS|DTR

17: uart:ST16654 port:F1000160 irq:104 tx:1079 rx:2059346 fe:2312 RTS|DTR
```

Next morning, tried fourth test:

Fourth test: 4 licors running at 10 Hz, 9600 baud

```
(Outputs (BW 10) (RS232 (Freq 10.0)  (Baud 9600)))
```

This resulted in around 400-500 spurious interrupts/sec being reported in /var/log/isfs/kernel. The system is keeping up, top shows an idle value of ~ 70%. Here are the current values from /proc/tty/driver/serial. The number of framing errors is staying steady at this baud rate:

```
7: uart:ST16654 port:F1000110 irq:104 tx:1371 rx:1169013368 fe:41917 RTS|DTR

11: uart:ST16654 port:F1000130 irq:104 tx:2133 rx:18900757 fe:21542 RTS|DTR

14: uart:ST16654 port:F1000148 irq:104 tx:1809 rx:590564461 fe:3997 RTS|DTR

17: uart:ST16654 port:F1000160 irq:104 tx:1339 rx:17587617 fe:2321 RTS|DTR
```

Testing at FLAB

We've attempted to simulate the turbulence tower data acquisition configuration at FLAB, with an adam sampling 5 CSAT3 sonics at 20Hz and 1 Licor 7500 whose transmit and signal ground lines are forked to 5 separate serial ports. There is no GPS, CNR1, barometer or 5 TRHs on the test adam. We see no spurious interrupts, and the data system is keeping up with the 1x5 Licor set to 20Hz, 19200 baud. **top** shows a system idle value between 97 and 80%.
top on the adam at the turbulence tower shows 65-79 % idle. Other than the additional low rate serial sensors there is no difference between the 2 systems. They are both writing the full archive to a usbdisk.