

# Target C&M Status

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# New Target Software

- Target C&M software completely re-written
- UI in Javascript with a PyROOT back-end.
- Fully configurable on-the-fly.
- Special administrator password required for all but routine adjustments.

# New Target Software

- Data from analog “beam loss” system combined with data from target controller asynchronously in on-board “Concentrator”.
- All data stored in simple root files (readable without a dictionary).
- Some data duplicated to local database for quick review. Histograms of last hour generated on demand.

# Target and ConfigDB

- New target software fully compatible with configDB using native c++ wsdl library “wsdlpull”; which does not have a pre-compile phase and is therefore adjustable at run-time.
- Examples of use of wsdlpull sent out to interested parties.

# Target and EPICS

- Temperatures monitored from EPICS using “edi” daemon as interface.
- Temperatures also logged to local database for quick access.
- Designed to always run. Does not quit in the event of a problem.

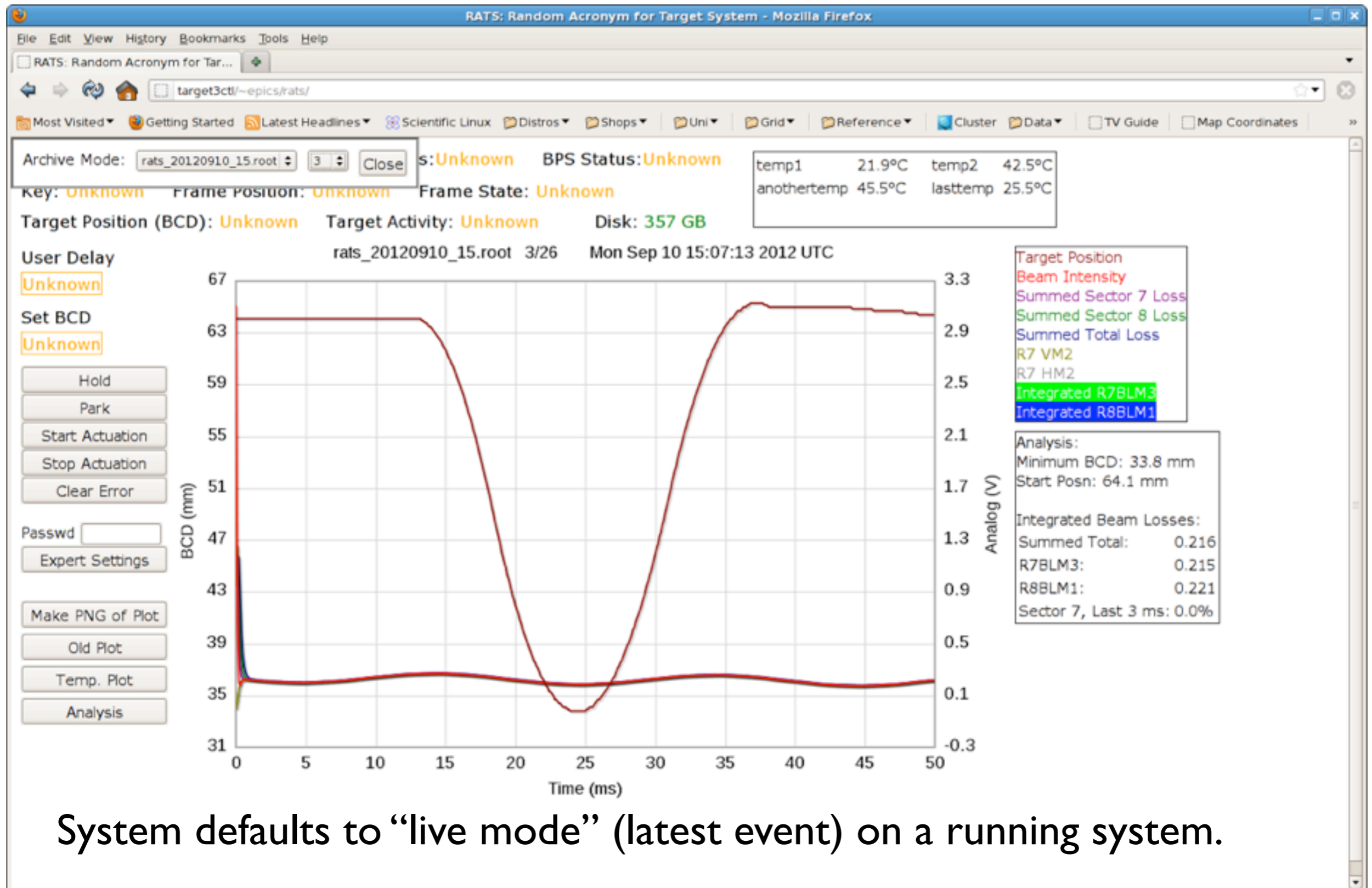
# Target Software Plans

- System has been ready to go for some time, having been tested on Sheffield target3 system.
- Waiting for hardware problems in R78 to be resolved before testing there.

# Dump of root file structure

```
*****
*
*Tree :rats :Record Active Target Signals *
*Entries : 26 :Total = 9461382 bytes File Size = 861870 *
* : :Tree compression factor = 11.03 *
*****
*
*Br 0 :ConEvent :ConEvent/O *
*Entries : 26 :Total Size= 2796 bytes File Size = 1976 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 1.00 *
*
*Br 1 :AnaEvent :AnaEvent/O *
*Entries : 26 :Total Size= 2796 bytes File Size = 1976 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 1.00 *
*
*Br 2 :AnaTime :AnaTime/D *
*Entries : 26 :Total Size= 2962 bytes File Size = 2132 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 1.00 *
*
*Br 3 :Position :Position[10000]/i *
*Entries : 26 :Total Size= 1042790 bytes File Size = 28741 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 36.25 *
*
*Br 4 :Beam_Intensity :Analog1[5000]/D *
*Entries : 26 :Total Size= 1042955 bytes File Size = 96824 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 10.76 *
*
*Br 5 :Sector_7_Beam_Loss :Analog2[5000]/D *
*Entries : 26 :Total Size= 1043063 bytes File Size = 94799 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 10.99 *
*
*Br 6 :Sector_8_Beam_Loss :Analog3[5000]/D *
*Entries : 26 :Total Size= 1043063 bytes File Size = 95147 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 10.95 *
*
*Br 7 :Total_Beam_Loss :Analog4[5000]/D *
*Entries : 26 :Total Size= 1042982 bytes File Size = 101039 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 10.31 *
*
*Br 8 :R7_VM2 :Analog5[5000]/D *
*Entries : 26 :Total Size= 1042739 bytes File Size = 86785 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 12.01 *
*
*Br 9 :R7_HM2 :Analog6[5000]/D *
*Entries : 26 :Total Size= 1042739 bytes File Size = 90399 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 11.53 *
*
*Br 10 :Sector_7_Beam_Loss_ISIS_Integrated :Analog7[5000]/D *
*Entries : 26 :Total Size= 1043495 bytes File Size = 99057 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 10.53 *
*
*Br 11 :Sector_8_Beam_Loss_ISIS_Integrated :Analog8[5000]/D *
*Entries : 26 :Total Size= 1043495 bytes File Size = 109926 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 9.48 *
*
*Br 12 :ConTime :ConTime/D *
*Entries : 26 :Total Size= 2962 bytes File Size = 2132 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 1.00 *
*
*Br 13 :ActCount :ActCount/i *
*Entries : 26 :Total Size= 2880 bytes File Size = 2054 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 1.00 *
*
*Br 14 :SetPoint1 :SetPoint1/i *
*Entries : 26 :Total Size= 2910 bytes File Size = 2080 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 1.00 *
*
*Br 15 :SetPoint2 :SetPoint2/i *
*Entries : 26 :Total Size= 2910 bytes File Size = 2080 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 1.00 *
*
*Br 16 :StartPos :SetPoint1/i *
*Entries : 26 :Total Size= 2883 bytes File Size = 2054 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 1.00 *
*
*Br 17 :MinPos :SetPoint2/i *
*Entries : 26 :Total Size= 2829 bytes File Size = 2002 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 1.00 *
*
*Br 18 :SetPoint1MaxTime :SetPoint1MaxTime/i *
*Entries : 26 :Total Size= 3120 bytes File Size = 2262 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 1.00 *
*
*Br 19 :SetPoint1MinTime :SetPoint1MinTime/i *
*Entries : 26 :Total Size= 3120 bytes File Size = 2262 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 1.00 *
*
*Br 20 :MinPosMaxTime :MinPosMaxTime/i *
*Entries : 26 :Total Size= 3030 bytes File Size = 2184 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 1.00 *
*
*Br 21 :MinPosMinTime :MinPosMinTime/i *
*Entries : 26 :Total Size= 3030 bytes File Size = 2184 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 1.00 *
*
*Br 22 :MinPosMaxValue :MinPosMaxValue/i *
*Entries : 26 :Total Size= 3060 bytes File Size = 2210 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 1.00 *
*
*Br 23 :MinPosMinValue :MinPosMinValue/i *
*Entries : 26 :Total Size= 3060 bytes File Size = 2210 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 1.00 *
*
*Br 24 :ActMaxTime :ActMaxTime/i *
*Entries : 26 :Total Size= 2940 bytes File Size = 2106 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 1.00 *
*
*Br 25 :ActMaxTimeMinTime :ActMinTime/i *
*Entries : 26 :Total Size= 2940 bytes File Size = 2106 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 1.00 *
*
*Br 26 :ChannelAOut :ChannelAOut/i *
*Entries : 26 :Total Size= 2970 bytes File Size = 2132 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 1.00 *
*
*Br 27 :ChannelBOut :ChannelBOut/i *
*Entries : 26 :Total Size= 2970 bytes File Size = 2132 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 1.00 *
*
*Br 28 :IndexOut :IndexOut/i *
*Entries : 26 :Total Size= 2880 bytes File Size = 2054 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 1.00 *
*
*Br 29 :BPSErrors :BPSErrors/i *
*Entries : 26 :Total Size= 2910 bytes File Size = 2080 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 1.00 *
*
*Br 30 :SetPoint1Time :SetPoint1Time/i *
*Entries : 26 :Total Size= 3030 bytes File Size = 2184 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 1.00 *
*
*Br 31 :MinTime :MinTime/i *
*Entries : 26 :Total Size= 2850 bytes File Size = 2028 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 1.00 *
*
*Br 32 :ActTime :ActTime/i *
*Entries : 26 :Total Size= 2850 bytes File Size = 2028 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 1.00 *
*
*Br 33 :ActVel :ActVel/i *
*Entries : 26 :Total Size= 2820 bytes File Size = 2002 *
*Baskets : 26 :Basket Size= 32000 bytes Compression= 1.00 *
*
*****
```

# Archive Mode



System defaults to “live mode” (latest event) on a running system.



# Administration

RATS: Random Acronym for Target System - Mozilla Firefox

File Edit View History Bookmarks Tools Help

target3ctf/~epics/rats/

Most Visited Getting Started Latest Headlines Scientific Linux Distros Shops Uni Grid Reference Cluster Data TV Guide Map Coordinates

CDB Settings: URL  Target ID

<b>Core Parameters</b>		<b>BPS Parameters</b>		<b>User Parameters</b>	
ISIS Delay	<input type="text" value="20000000"/>	Enable	<input checked="" type="checkbox"/>	Default User Delay	<input type="text" value="500000"/>
ISIS Mod Count	<input type="text" value="1"/>	Volt Acc Cal Temp	<input type="text" value="50"/>	Default Set Depth	<input type="text" value="250"/>
Move To Hold Timer	<input type="text" value="10000000"/>	Volt Acc Cal Offset	<input type="text" value="0.13"/>	Active Config: test_a	
Hold Pos Max	<input type="text" value="34"/>	Volt Acc Cal Gradient	<input type="text" value="0.0005"/>	<input type="button" value="Load Active Config"/> <input type="button" value="Load Other Config"/>	
Pulse Width Modulation Cycle Count Max	<input type="text" value="200"/>	Time Const Calc	<input type="text" value="0.015"/>	<input type="button" value="Save As New Config"/> <input type="text" value="name for new config"/>	
Pulse Width Modulation Timer	<input type="text" value="40"/>	Time Const Offset	<input type="text" value="0.05"/>	<input type="button" value="Save Config"/> <input type="button" value="Activate Config"/>	
Pulse Width Modulation Duty Cycle	<input type="text" value="10"/>	Time Const Gradient	<input type="text" value="3.4"/>		
Watchdog Timer Value	<input type="text" value="1600000"/>	Temp Max	<input type="text" value="95"/>	<b>Temperature Monitoring</b>	
Error Correction Count Max	<input type="text" value="5"/>	Temp Min	<input type="text" value="10"/>	Number of Temperatures	4 <input type="button" value="+"/> <input type="button" value="-"/>
Error Correction Threshold	<input type="text" value="1"/>	Coil Voltage	<input type="text" value="115"/>	Temperature 1 Name	<input type="text" value="temp1"/>
Set Point 2 Default Offset	<input type="text" value="0"/>	Time SP Error Limit	<input type="text" value="60000"/>	Temp 1 Process Variable	<input type="text" value="MICE:TGT3-TEMP1"/>
Capture Settle Time	<input type="text" value="20000000"/>	Time Min Error Limit	<input type="text" value="60000"/>	Temperature 2 Name	<input type="text" value="temp2"/>
Capture Wait Time	<input type="text" value="15000000"/>	Time Act Error Limit	<input type="text" value="200000"/>	Temp 2 Process Variable	<input type="text" value="MICE:TGT3-TEMP2"/>
Quadrature Counter Initial Pos	<input type="text" value="9"/>	Posn Error Limit	<input type="text" value="5"/>	Temperature 3 Name	<input type="text" value="anothertemp"/>
Quadrature Counter Index Offset	<input type="text" value="290"/>	Start Posn	<input type="text" value="345"/>	Temp 3 Process Variable	<input type="text" value="MICE:TGT3-TEMP3"/>
Dead Time	<input type="text" value="2000"/>	<b>Physical Layout</b>		Temperature 4 Name	<input type="text" value="lasttemp"/>
Kick Back Time	<input type="text" value="30000"/>	Hold Offset	<input type="text" value="64100"/>	Temp 4 Process Variable	<input type="text" value="MICE:TGT3-TEMP4"/>
Drop Limit	<input type="text" value="100"/>	Hold Count Offset	<input type="text" value="5"/>	<input type="button" value="Fetch Settings"/> <input type="button" value="Save Settings"/>	
Legal Spill	<input type="text" value="100"/>	Count Scaling Factor	<input type="text" value="150"/>		
ROM Version	<input type="text" value="0"/>	Hold Pos Max Scaling Factor	<input type="text" value="20"/>		
Channel A Gain	<input type="text" value="30"/>	Set Point 1 Scaling Factor	<input type="text" value="2.0509"/>		
Channel B Gain	<input type="text" value="30"/>	Set Point 1 Offset	<input type="text" value="5"/>		
Index Gain	<input type="text" value="30"/>				
Capture Boost	<input type="text" value="10"/>				

# Temperature Log



# Finally

- Daily reports ready to go, mostly thanks to Ed Overton.
- Would like to switch over R78 as soon as stator problems resolved. This does not require physical intervention as no hardware changes are required.
- Thanks to Ed and the Pauls for much needed assistance in development.