GIADA FS MODEL

REPORT ON
IN FLIGHT PASSIVE PAYLOAD CHECKOUT N. 9 (PC9)
performed on
28-01-2009 and 2-02-2009

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REVISIONS LOG

REV	DOCUMENT CHANGE ORDER	DATE	CHANGES DESCRIPTION	PREPARED
0	-	26-10-2011	First issue	GIADA Team

1. SCOPE AND APPLICABILITY

Payload Checkout 9 (PC9) was the 7th Passive Payload checkout conducted during the Rosetta spacecraft's Cruise Phase. The main objective of passive payload checkouts is to verify the health of the Rosetta payload through the execution of nominal payload "healthcheck" type operation.
The Passive Payload Checkout 9 executed 28th January and 2nd February 2009.
The GIADA passive test (GD01 in ESA document) includes standard procedures and full functional verification and was executed by switching on Main and Redundant I/Fs in sequence and executing similar procedures for the two cases.

This document reports the results obtained on GIADA experiment during PC9.

This report is applicable to GIADA FS model on board the Rosetta S/C. The data were retrieved from DDS by means of the PI Workstation located at Università Parthenope in Naples

GIADA IWS software configuration is GES v. 4.2.2 plus RSOC Converter v. 1.1.2. GIADA in flight software configuration is 2.3 plus three additional patches (one more patch is used to update the context file).

2. REFERENCES

2.1 APPLICABLE DOCUMENT

AD1	RO-EST-RS-3001/EID A	ROSETTA Experiment Interface Document – Part A
AD2	RO-EST-RS-3009/EIDB	ROSETTA GIADA Experiment Interface Document – Part B
AD3	RO-ESC-PL-5000 – last issue	Flight Control Procedure
AD4	GIA-GAL-MA-007 Issue 4	GIADA Flight Spare Experiment User Manual last version

2.2 REFERENCE DOCUMENT

	None.	

3. DEFINITIONS AND ABBREVIATIONS

3.1 ABBREVIATIONS

CAL	Calibration
CF	Context File
CREP	Cover REPort
CT	Configuration Table
DDS	Data Disposition System
EGSE	Electrical Ground Support Equipment
EQM	Electrical Qualification Model
ESA	European Space Agency
FCP	Flight Control Procedure
FS	Flight Spare
GDS	Grain Detection System
GES	GIADA EGSE SW
GIADA	Grain Impact Analyser and Dust Accumulator
HK	House Keeping
I/F	InterFace
INAF-OAC	INAF - Osservatorio Astronomico di Capodimonte – Napoli (I)
IRQ	Interrupt ReQuest
IS	Impact Sensor
IWS	Instrument Work-Station
MBS	Micro Balance System
ME	Main Electronics
MTL	Mission TimeLine
MON	Monitor
OBCP	On-Board Control Procedure
PC	Payload Checkout
PI	Principal Investigator
PS	GIADA Power Supply
PZT	(IS) Piezoelectric Sensor
RED	Redundant
REV	Revision
RMOC	Rosetta Mission Operation Centre
RSOC	Rosetta Science Operation Centre
S/C	(Rosetta) Spacecraft
S/S	(GIADA) Sub-system (e.g. IS or GDS or MBS)
SCI	Scientific
SSC	Source Sequence Count
SSMM	Solid State Mass Memory on-board of Rosetta Spacecraft
SW	Software
TC	TeleCommand
TM	Telemetry
UM	User Manual
UTC	Coordinated Universal Time
VC0	Virtual Channel 0 (Real Time TM packets)
VC1	Virtual Channel 1 (TM packets coming from Mass Memory)

4. DESCRIPTION OF ACTIVITIES

The Passive Payload Checkout n. 9 (PC9) scenario begins on 28th January and ended on 2nd February, according to the timelines reported 9 (PC9) in Section 8.
As wrote before about GIADA, PC9 consists in a passive test routinely executed in every payload checkout (GD01) , 6-Months status check;
PC9 is a maintenance and calibration scenario plan and therefore there are no scientific objectives.
Details of the plan of activities referred to as passive part of PC9 are in Section 8.1.
No problem appeared during PC 9 open/close cover procedures.

In the next table there are some information about PC10

Scenario period	28/01/09 to 02/02/09
Scenario duration	3 days
Sun distance	2.24AU
Earth distance	3.14AU
Propagation delay	~10 min.

The data were off-line elaborated on the PI IWS at INAF-OAC in Naples.

5. SUMMARY OF DATA ANALYSIS

The full sets of plots about Housekeeping data are reported in Sections 6 and 7 for GD01 test on the Main and Redundant I/F's respectively.

Here following the main findings are summarised.

5.1 GENERAL CONSIDERATIONS

Test started on "Fri Jan 30 2009 13:52:08.814628", when the first TM packet was received from GIADA switched on the Main interface; the last TM packet on the Main interface was received on "Sat Jan 31 2009 01:28:57.990164". Test on the Redundant interface started on "Sat Jan 31 2009 01:52:08.822447" (1st packet received) and ended on "Sat Jun 31 2009 13:28:58.497983" (last packet received).

The first expected packet **(Connection Test Report, service 17,2) was not received** in the time window of any test, because the DDS has marked it with a wrong UTC time, being an unsynchronised time tag (bad time quality) TM report..

At the 3rd IS power-on both on Main I/F (Sat Jan 31 2009 00:06:00) and Red I/F (Sat Jan 31 2009 12:06:00), the event **"*Hardware error in IS event detection circuitry. No IRQ received*."** was received (see TCTM report file residing in the log directory of GES). This is a false message produced by the ME of GIADA when the IS electronics is powered-on. This is a known problem (see relevant Remark in GIADA FS UM [**AD 4**]).

As reported in the "Cover Reports" (**CREP**) no OPEN/CLOSE problem occurred during PC9

5.2 GIADA STATUS

The **current consumption** and **power supply temperatures** are shown in **Errore. L'origine riferimento non è stata trovata.** for Main on GD01, **Errore. L'origine riferimento non è stata trovata.** for Red on GD01; Power values must be compared with soft and hard limits reported in GIADA FS UM (**AD4**) and summarised in Table 5.2-1.

As reported in GIADA FS UM (**AD4**), the Soft and Hard Alarm Limits for Power consumption in Table 5.2-1 for parameters NGDD0086, NGDD0087 and/or NGDD0088 refer to the different GIADA operating modes. The Soft Alarm Limits in Normal and Flux Modes refer to nominal conditions, i.e. with all sub-systems switched ON. This means that when GIADA is in Normal Mode, but not with all sub-systems ON (or in Flux with MBS OFF), the lower Soft Alarm Limits indicated in the Table can be overcome. In order to avoid flood of Out Of Limits (OOL) alarms, it has been decided (July 2006) to refer the Hard Alarm Limits to the extreme instrument status for each mode (e.g., in normal mode, with all subsystems off – lower – or at maximum power consumption - upper). Other configurations not related to real GIADA failure may still give OOL, related to operation in non nominal temperature conditions, although such conditions have never been experienced so far.

In general, all **functional parameters** measured during the PC9 test behave as expected, with the exception of some OOLs reported in the previous section 5.1

QUANTITY	NAME	LNAME	SOFT ALARM LIMITS		HARD ALARM LIMITS	
			Lower	Higher	Lower	Higher
+5V Power Consumption ([1])	NGDD0086	Current +5V	110 mA	150 mA	80 mA	180 mA
+15V Power Consumption ([1])	NGDD0087	Current +15V	30 mA	60 mA	20 mA	70 mA
-15V Power Consumption ([1])	NGDD0088	Current -15V	50 mA	90 mA	40 mA	100 mA
+5V Power Consumption ([2])	NGDD0086	Current +5V	110 mA	150 mA	80 mA	180 mA
+15V Power Consumption ([2])	NGDD0087	Current +15V	30 mA	600 mA	20 mA	700 mA
-15V Power Consumption ([2])	NGDD0088	Current -15V	50 mA	600 mA	40 mA	700 mA
+5V Power Consumption ([3])	NGDD0086	Current +5V	110 mA	1600 mA	80 mA	1800 mA
+15V Power Consumption ([3])	NGDD0087	Current +15V	30 mA	550 mA	20 mA	600 mA
-15V Power Consumption ([3])	NGDD0088	Current -15V	50 mA	350 mA	40 mA	400 mA
+5V Power Consumption ([4])	NGDD0086	Current +5V	110 mA	170 mA	80 mA	1500 mA
+15V Power Consumption ([4])	NGDD0087	Current +15V	30 mA	200 mA	20 mA	220 mA
-15V Power Consumption ([4])	NGDD0088	Current -15V	50 mA	135 mA	40 mA	155 mA

Table 5.2-1. Hard and Soft limits for GIADA FS power consumption

([1]) Safe mode ([2]) Cover mode ([3]) Normal mode ([4]) Flux mode

All **Temperatures** behave as expected (Main on GD01: **Errore. L'origine riferimento non è stata trovata.**3,

Figure 6.1-4; Red on GD01: **Errore. L'origine riferimento non è stata trovata.**3, **Errore. L'origine riferimento non è stata trovata.**4. The peaks visible at the beginning and at the end of Frangibolt and IS temperature profiles are features due to the temporary increasing of power consumption at Power-on of the motor heaters (see Figure 6.1-5 and Figure 6.1-6 for Main on GD01; **Errore. L'origine riferimento non è stata trovata.** and **Errore. L'origine riferimento non è stata trovata.** for Red on GD01).

The trend of the IS Temperature is more noisy with the Main than with the Red I/F (Main on GD01:

Figure 6.3-4; Red on GD01).

The detection **Thresholds** applied on GDS are shown in

Figure 6.2-2 (Main on GD01) and **Errore. L'origine riferimento non è stata trovata.** (Red on GD01), **Errore. L'origine riferimento non è stata trovata.** while those applied to PZT3 and PZT5 of IS are shown in Figure 6.3-23 and

Figure 6.3-34 (Main on GD01), **Errore. L'origine riferimento non è stata trovata.**3 and **Errore. L'origine riferimento non è stata trovata.**4 (Red on GD01). Moreover, Range and Gain for IS are set as shown in Table 5.2-2.

RANGE	GAIN				
	PZTA	PZTB	PZTC	PZTD	PZTE
Low	High	High	High	High	High

Table 5.2-2. IS Range and Gain configuration

During PC9 no scientific data were occurred..

During PC9 test a **saturation of GDS** output did occur due to the Sun position (< 90 deg. with respect to the S/C +Z axis). Therefore the **GDS CAL data** show for the **GDS Left side** an output saturation level of about **0.21 V** and for the **GDS Right side** a saturation level of about **0.11-0.14 V** (depending on temperature). These are the nominal values occurring when the GDS is saturated.

The frequency level of all MBS has no relevant changes with respect to PC8 test.

6. PC9 DATA ANALYSIS – MAIN INTERFACE (GD01)

6.1 GIADA STATUS

Figure 6.1-1. HK Status of GIADA vs. time – Main

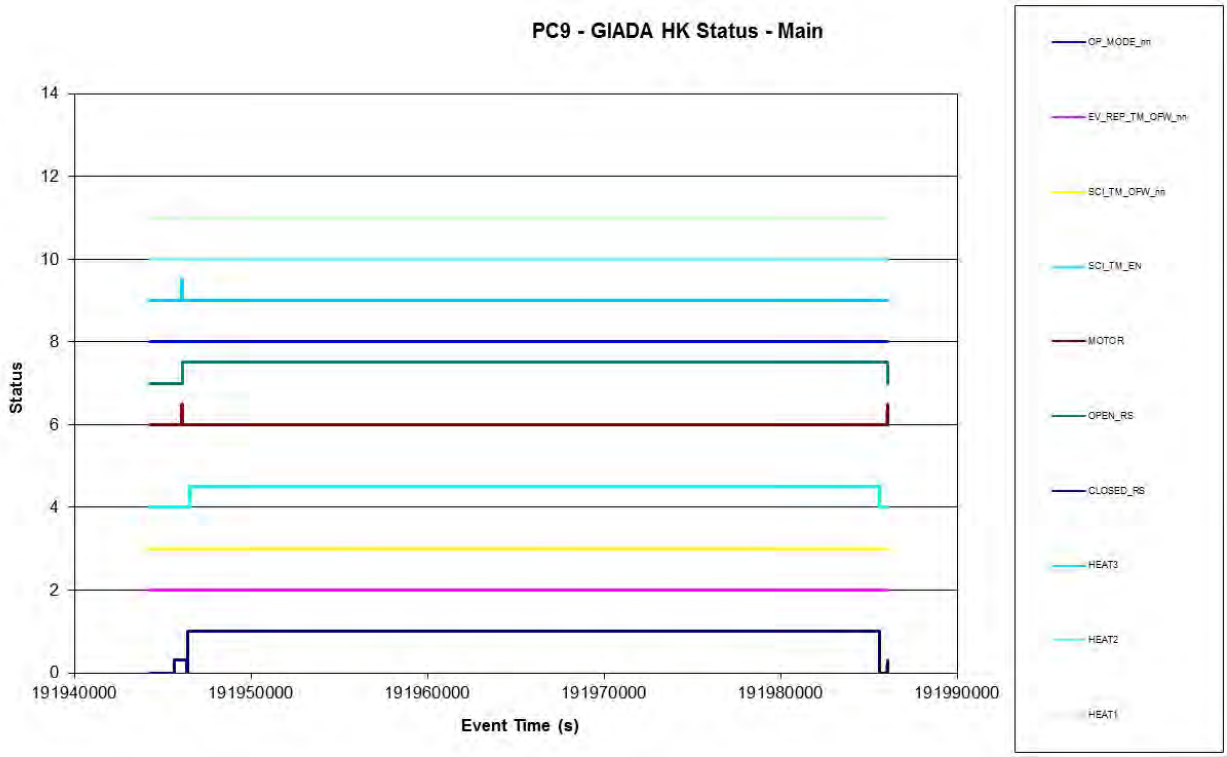


Figure 6.1-2. Power profile and Power Supply temperature vs. time - HK, Main

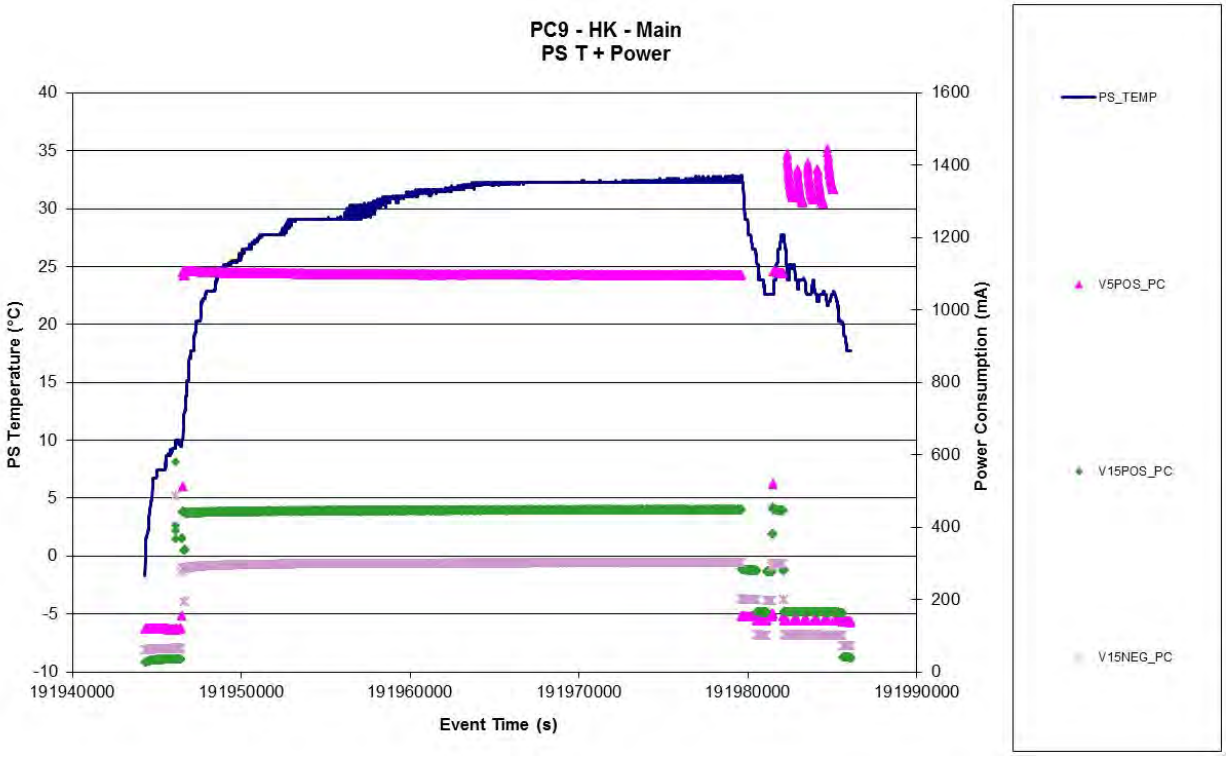


Figure 6.1-3. Evolution of temperatures of system elements vs. time - HK, Main

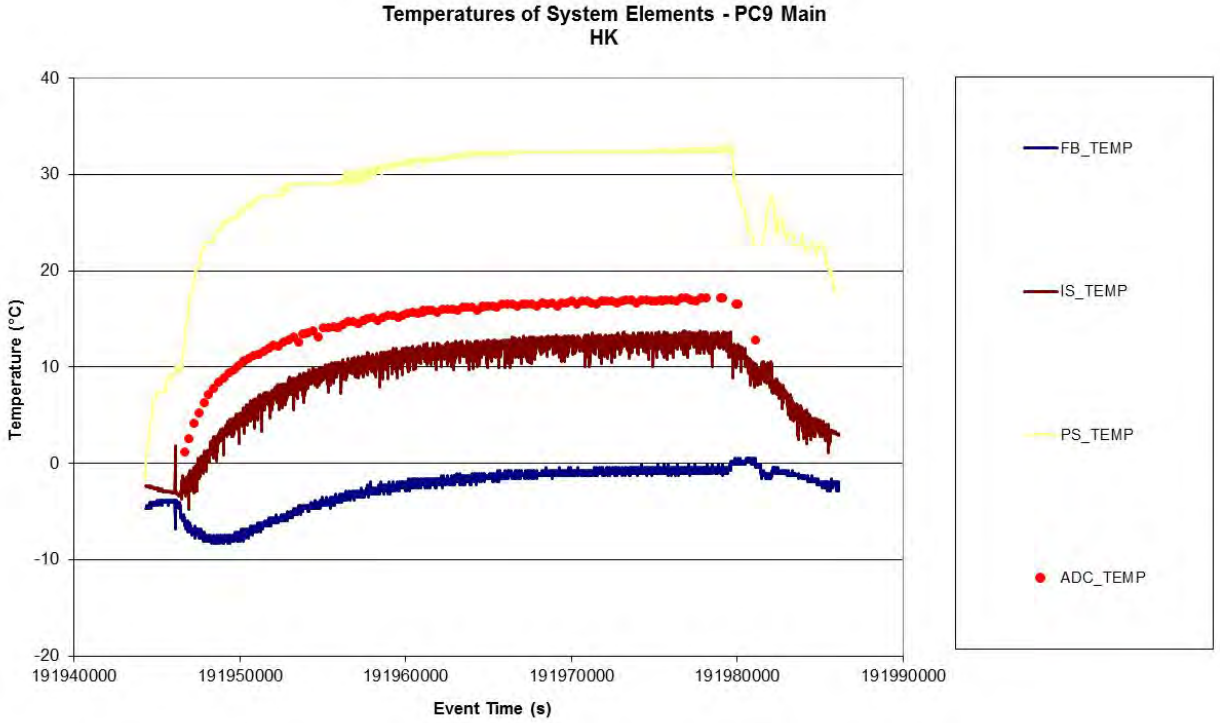


Figure 6.1-4. Evolution of temperatures of sub-systems vs. time

with instrument in Normal Mode– Main

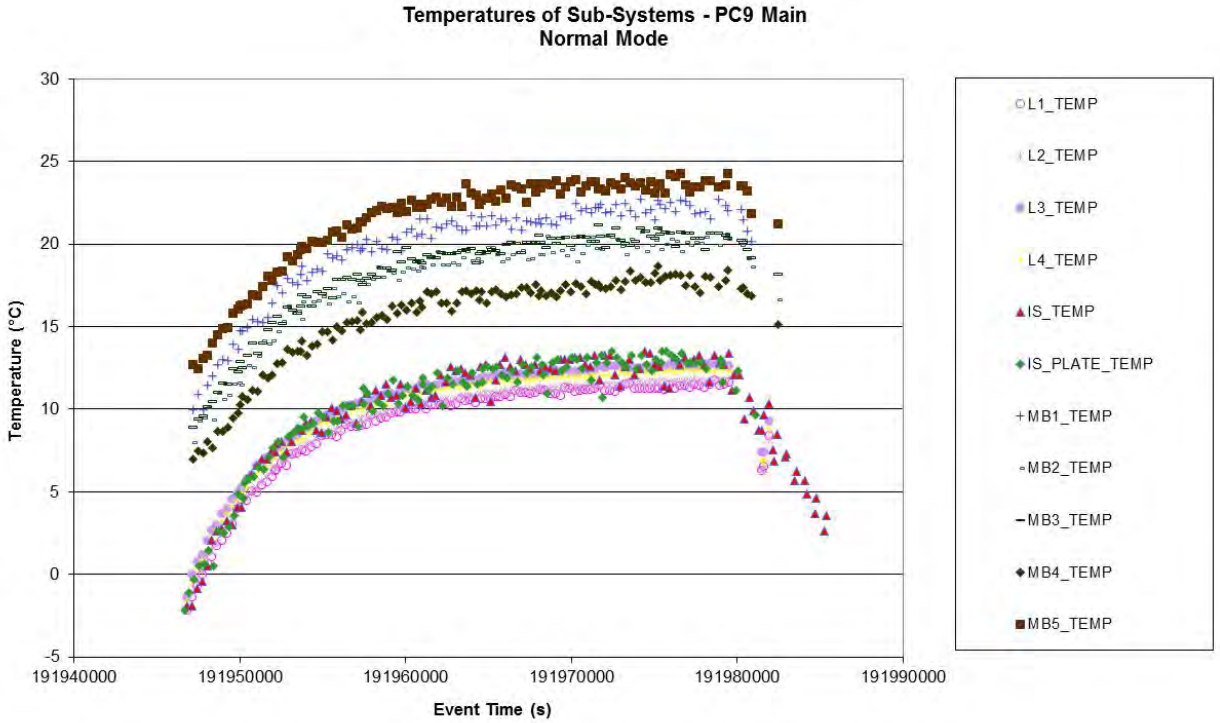


Figure 6.1-5. HK Status versus Temperatures of system elements – Main

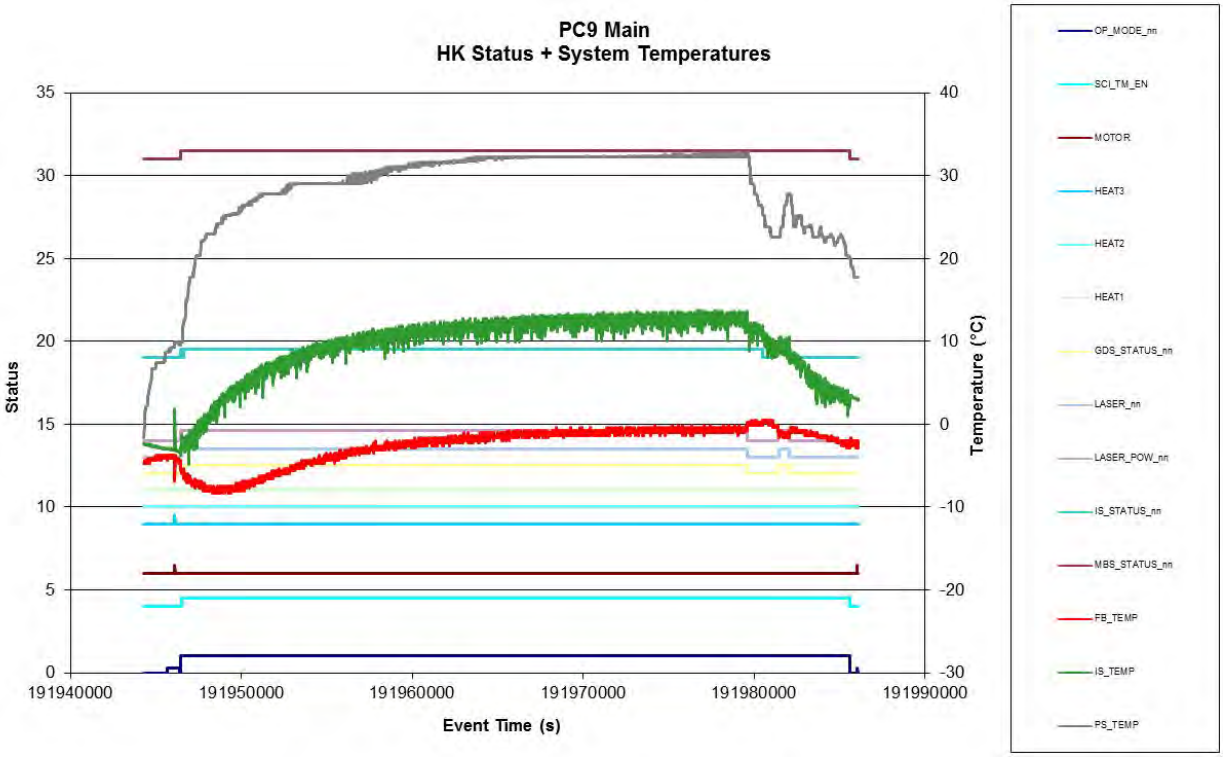
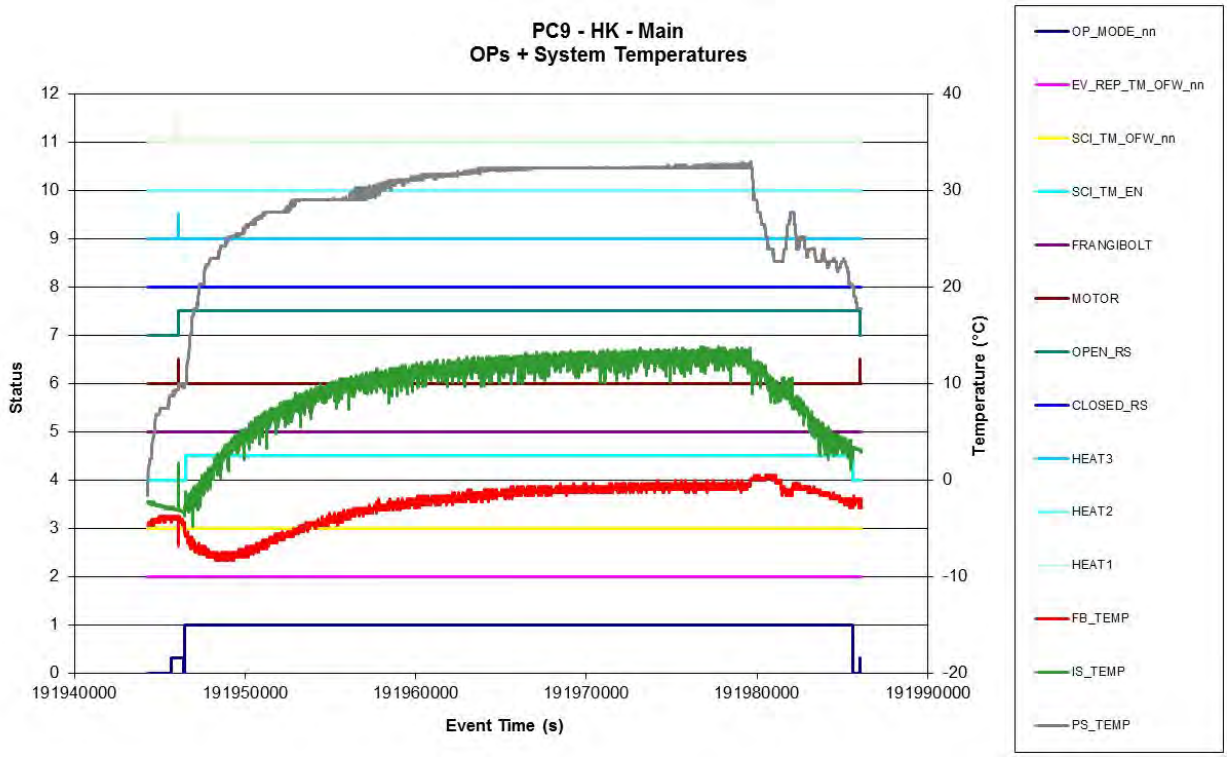


Figure 6.1-6. Operation Status versus Temperatures of system elements – Main
In the diagram are reported operative parameters with relevant variations.



6.2 GRAIN DETECTION SYSTEM (GDS)

6.2.1 GDS – Status

Figure 6.2-1. GDS Operation Status vs. time – Main

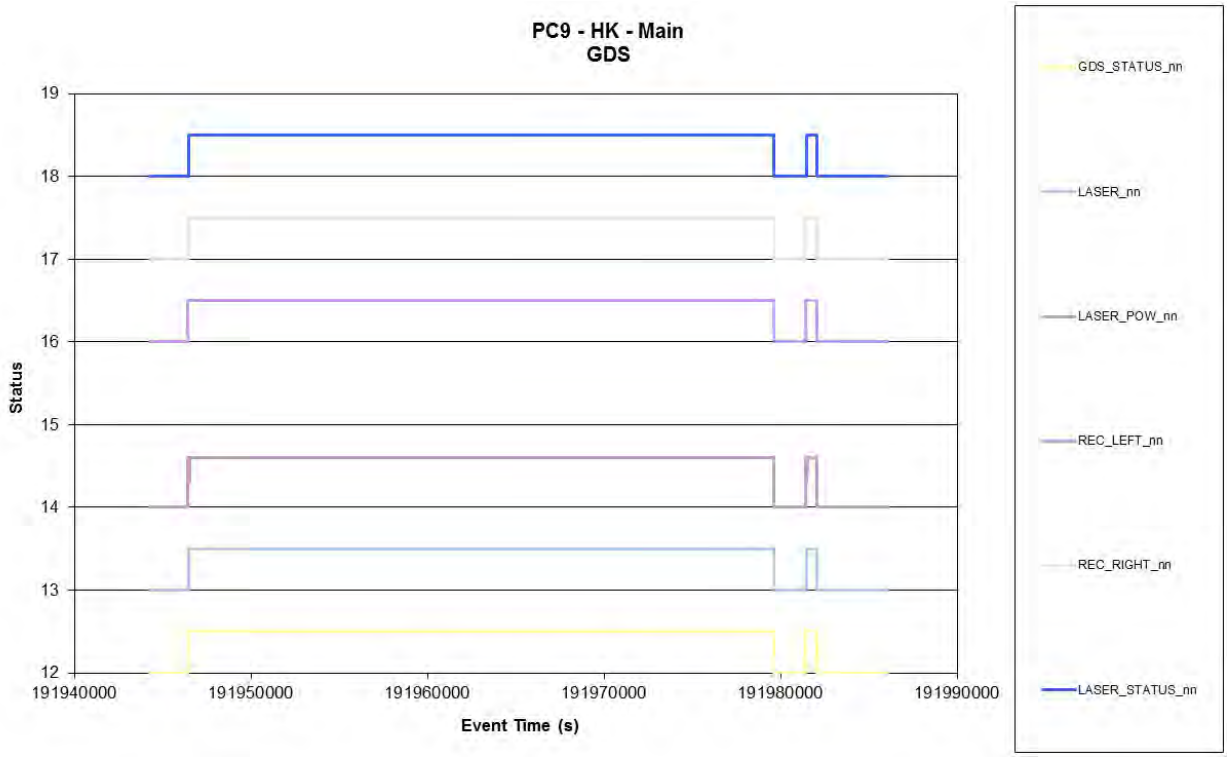


Figure 6.2-2. GDS Thresholds change vs. time – Main

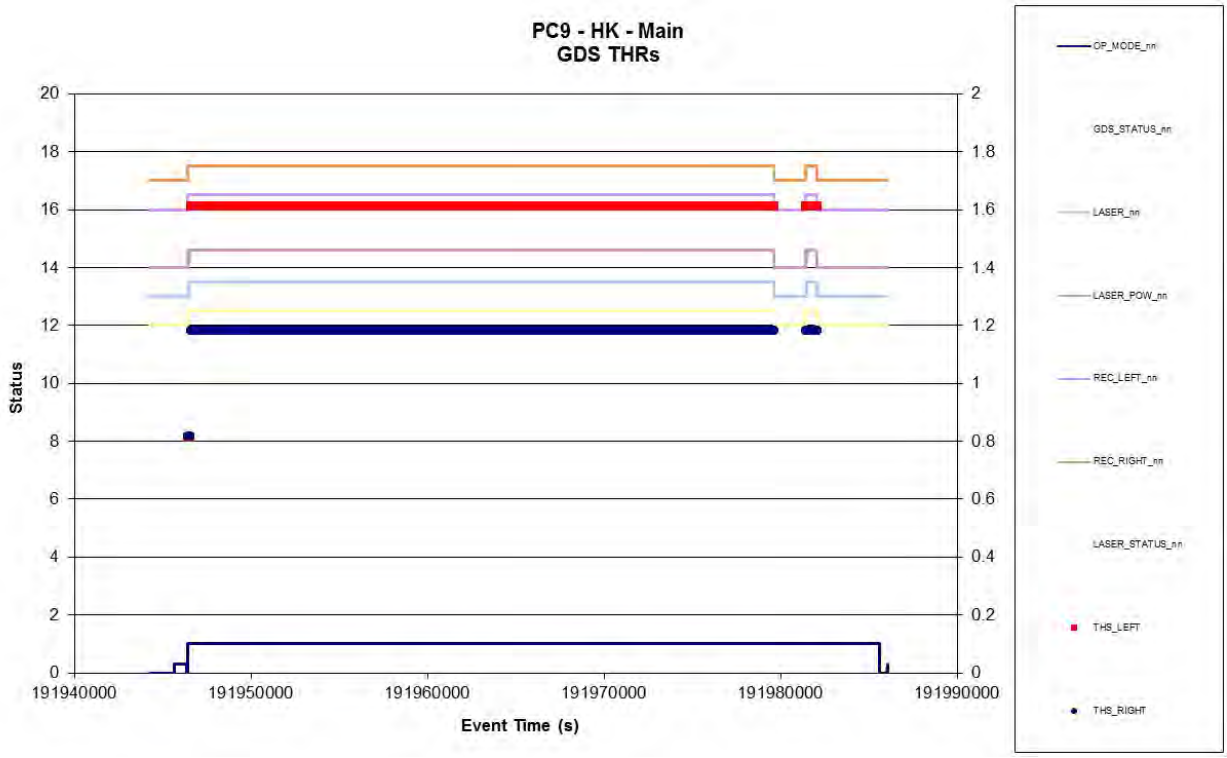


Figure 6.2-3. GDS Laser Temperatures vs. time– Main

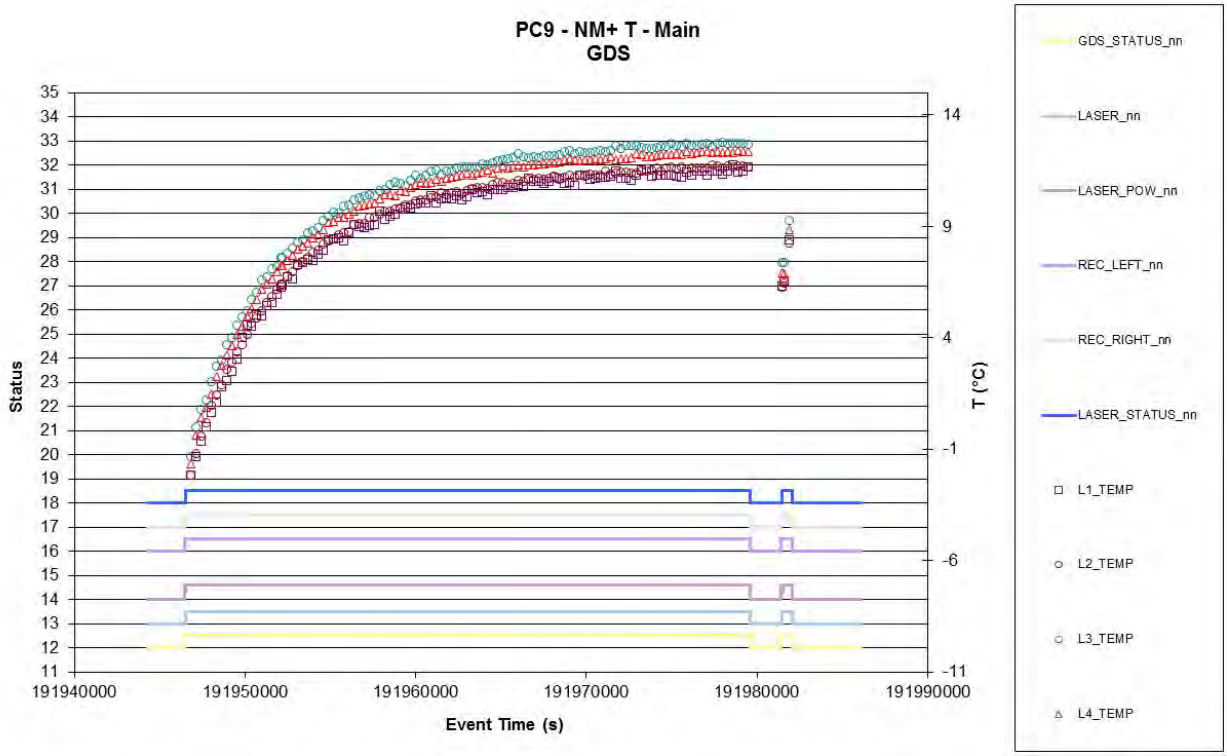


Figure 6.2-4. GDS Laser Monitor vs. time– Main

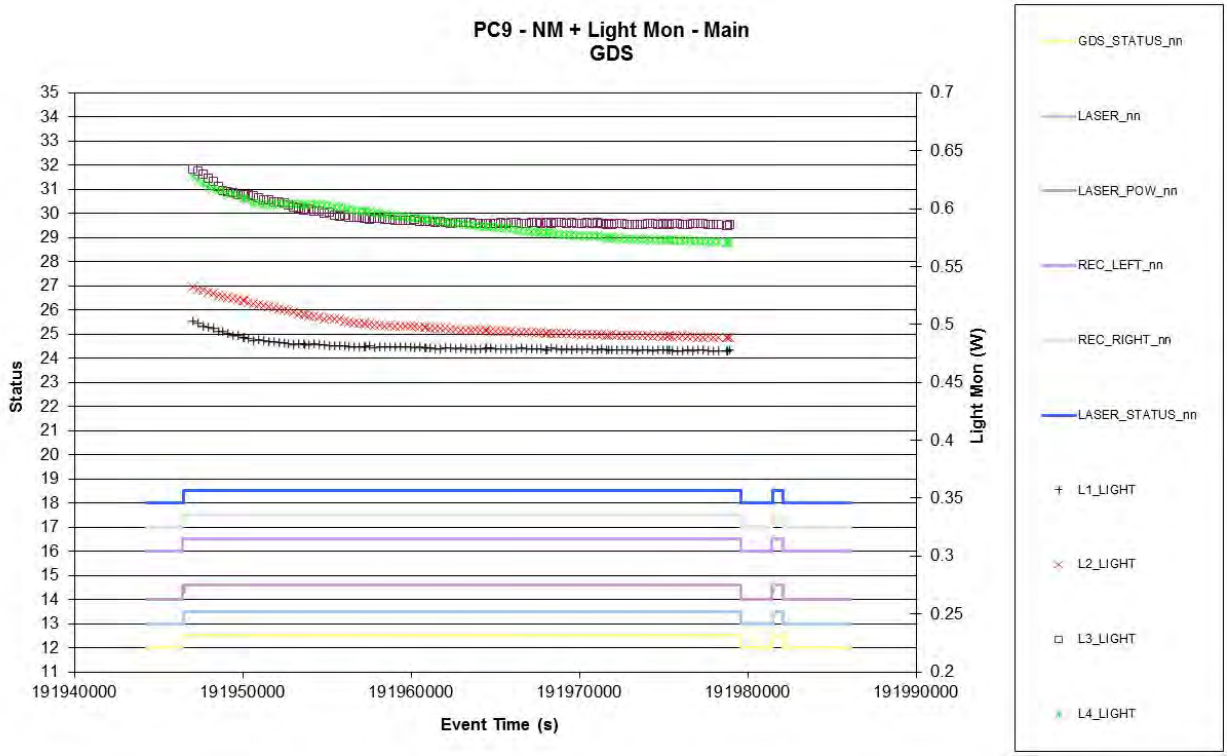


Figure 6.2-5. Lasers Light Monitor versus Temperature (HK, HK-SCI, SCI) – Main

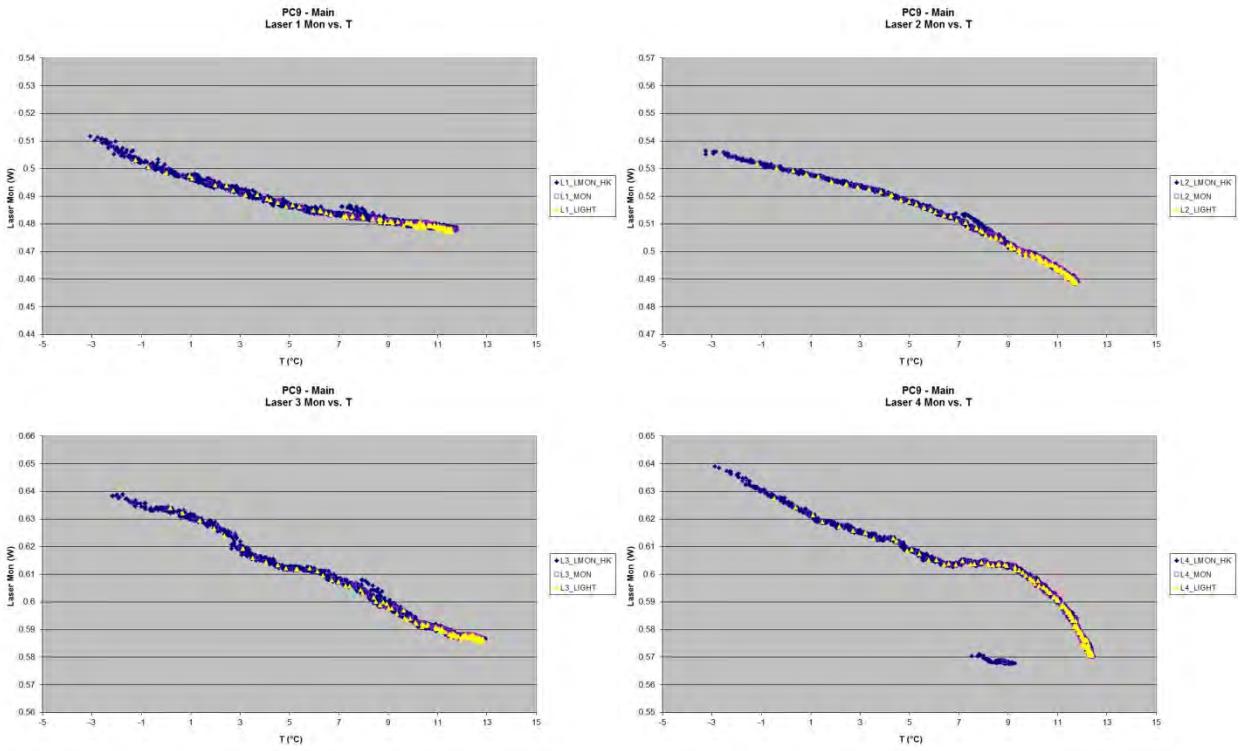
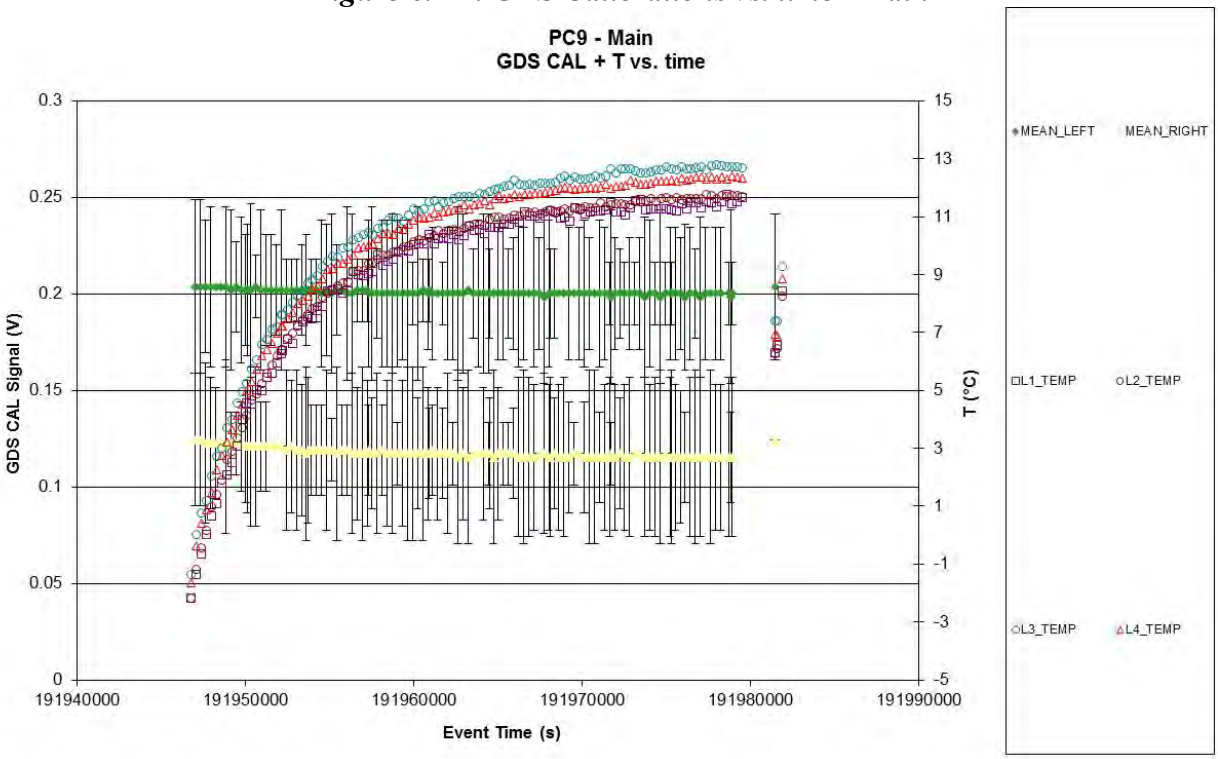


Figure 6.2-1. GDS Calibrations vs. time– Main



6.3 IMPACT SENSOR (IS)

6.3.1 IS – Status

Figure 6.3-1. IS Operation Status vs. time – Main

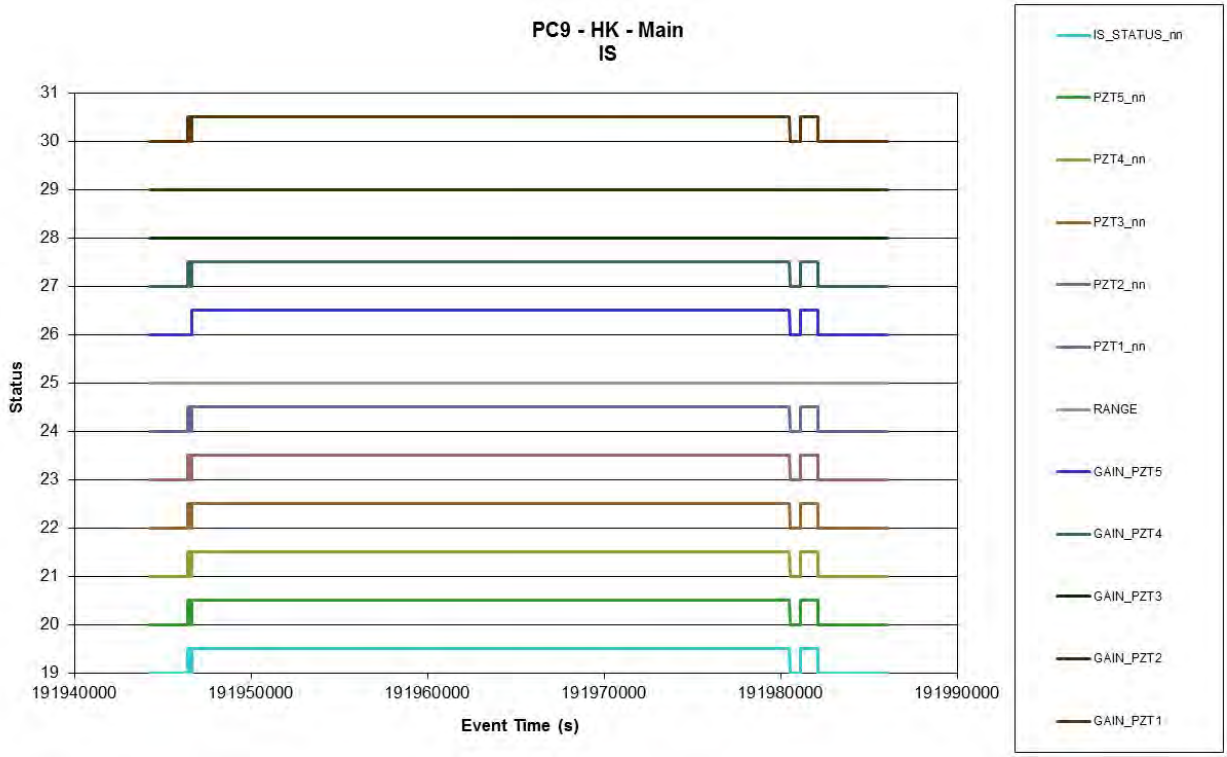


Figure 6.3-2. IS PZT 3 Thresholds change vs. time – Main

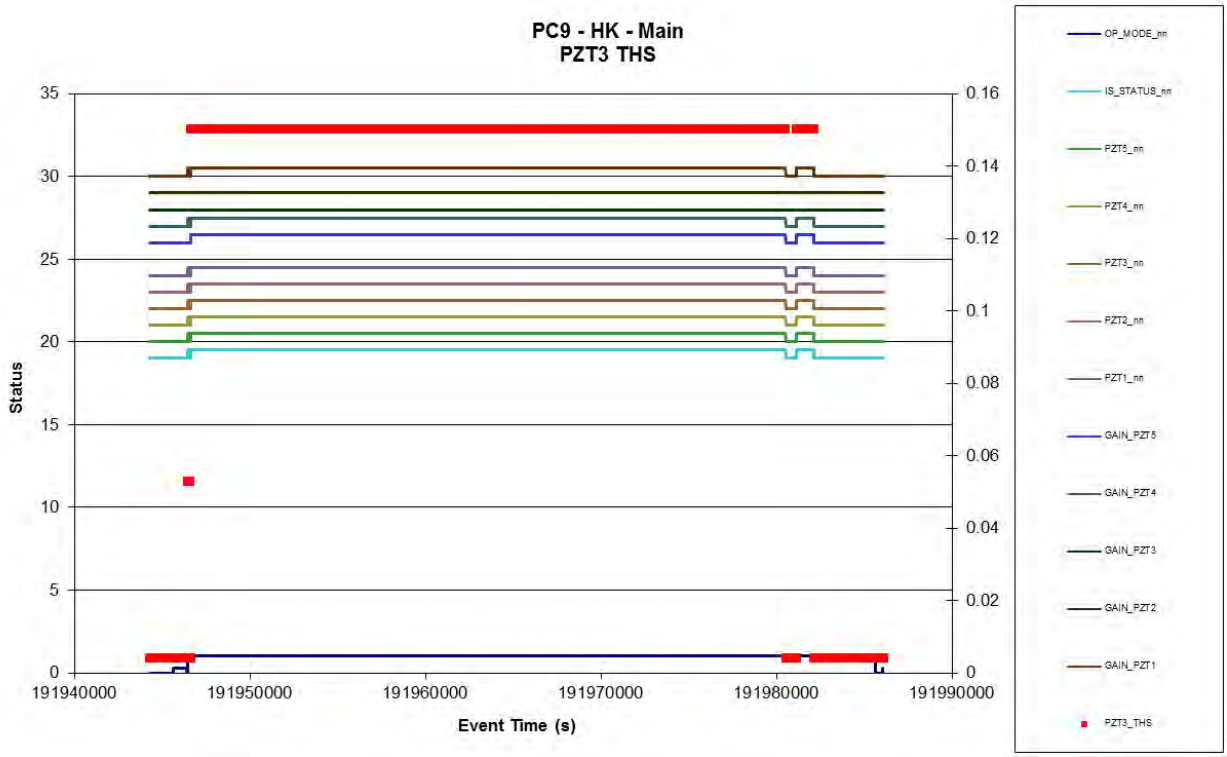


Figure 6.3-3. IS PZT 5 Thresholds change vs. time – Main

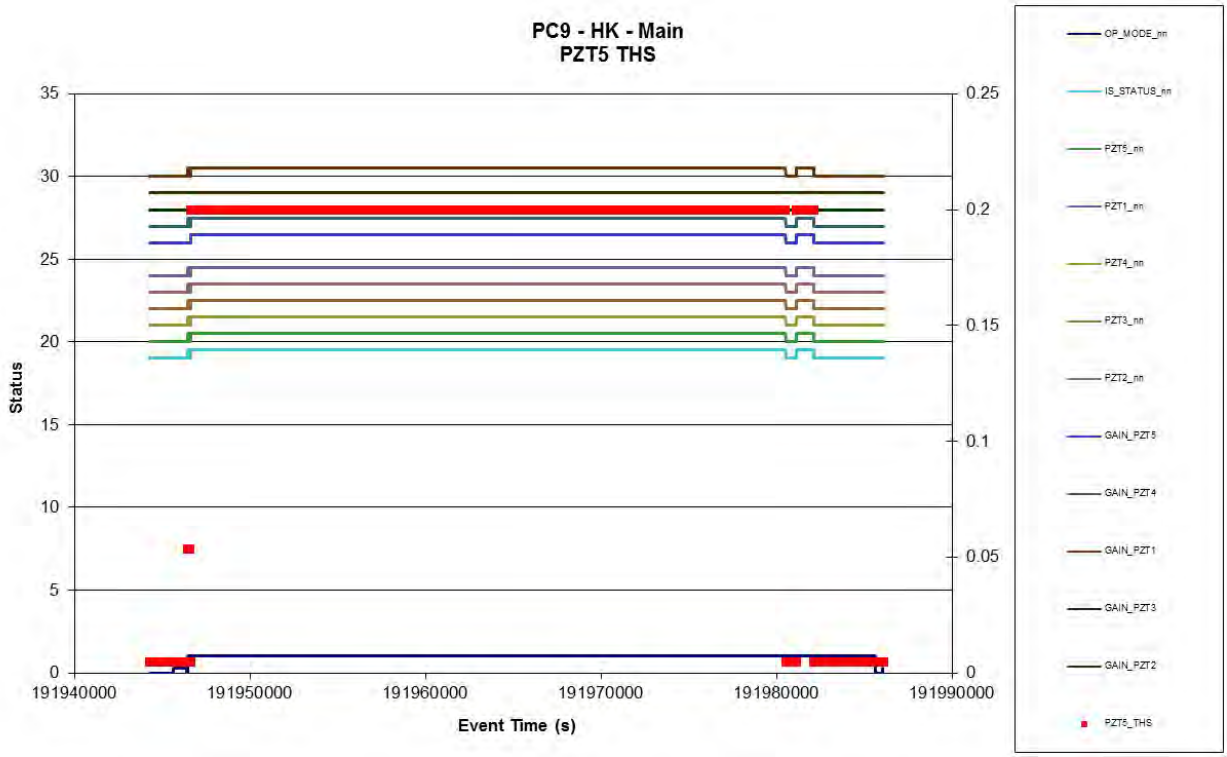
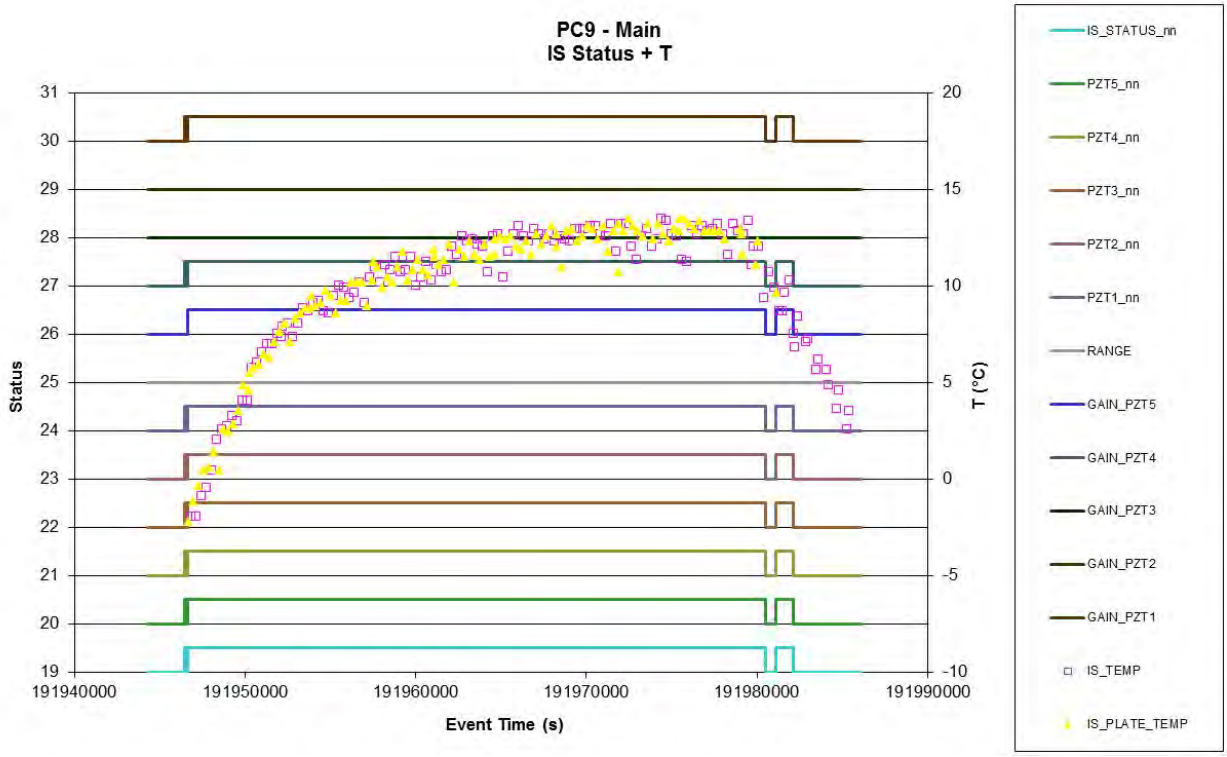
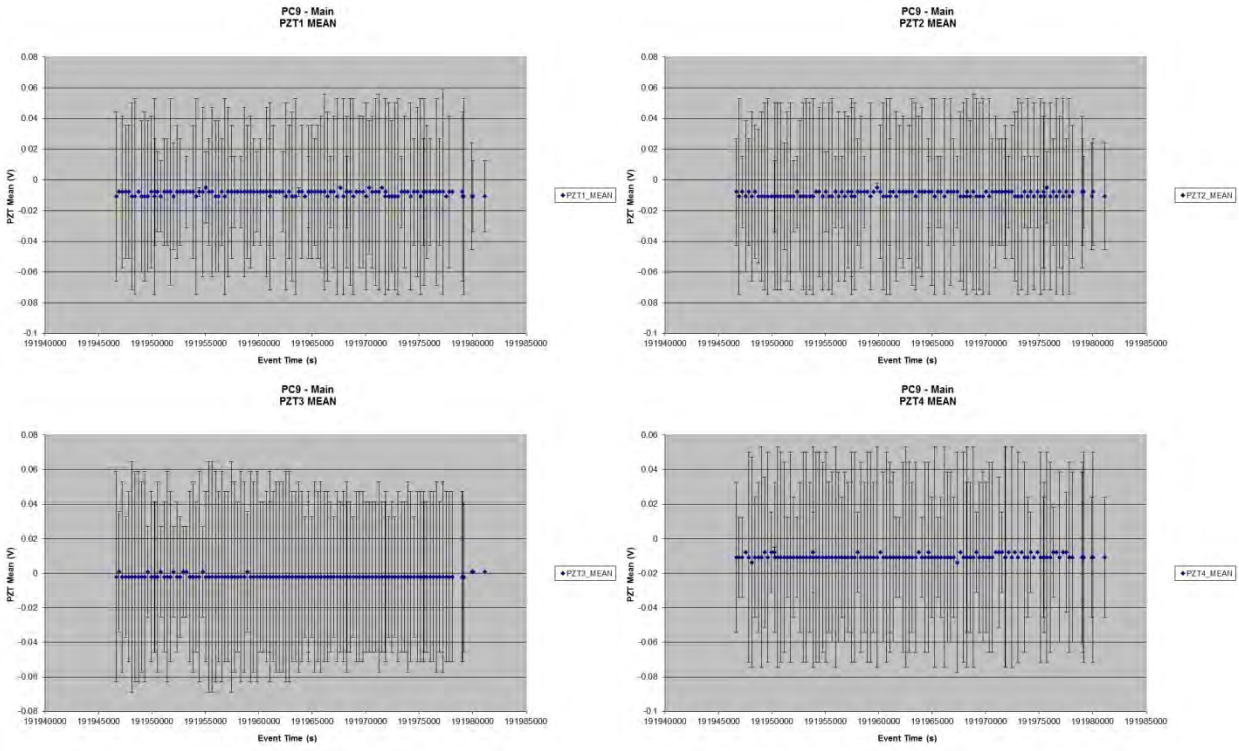


Figure 6.3-4. IS Temperature vs. time (HK, HK-SCI, SCI) – Main



6.3.1.1 CAL

Figure 6.3-5. PZTs Mean and St Dev. CAL vs. time – Main



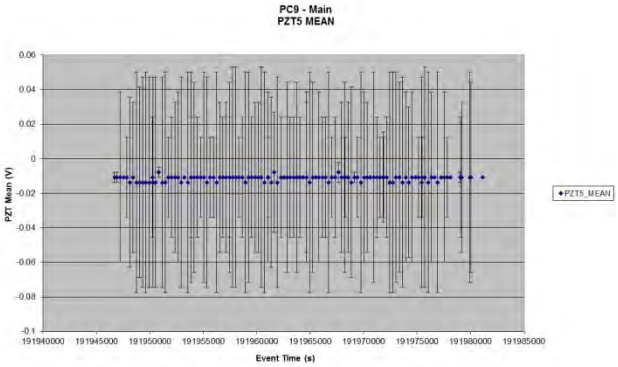


Figure 6.3-6. Reference Voltages for IS calibration vs. time – Main Voltages values for the calibrator don't show level variation

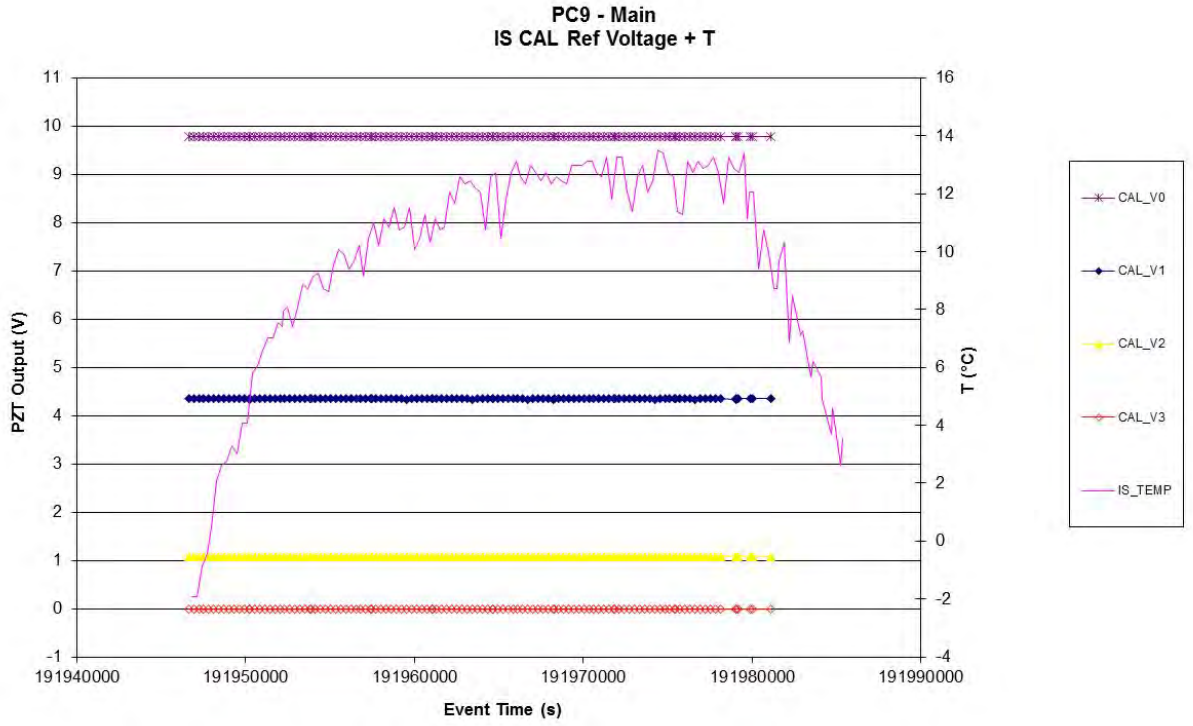
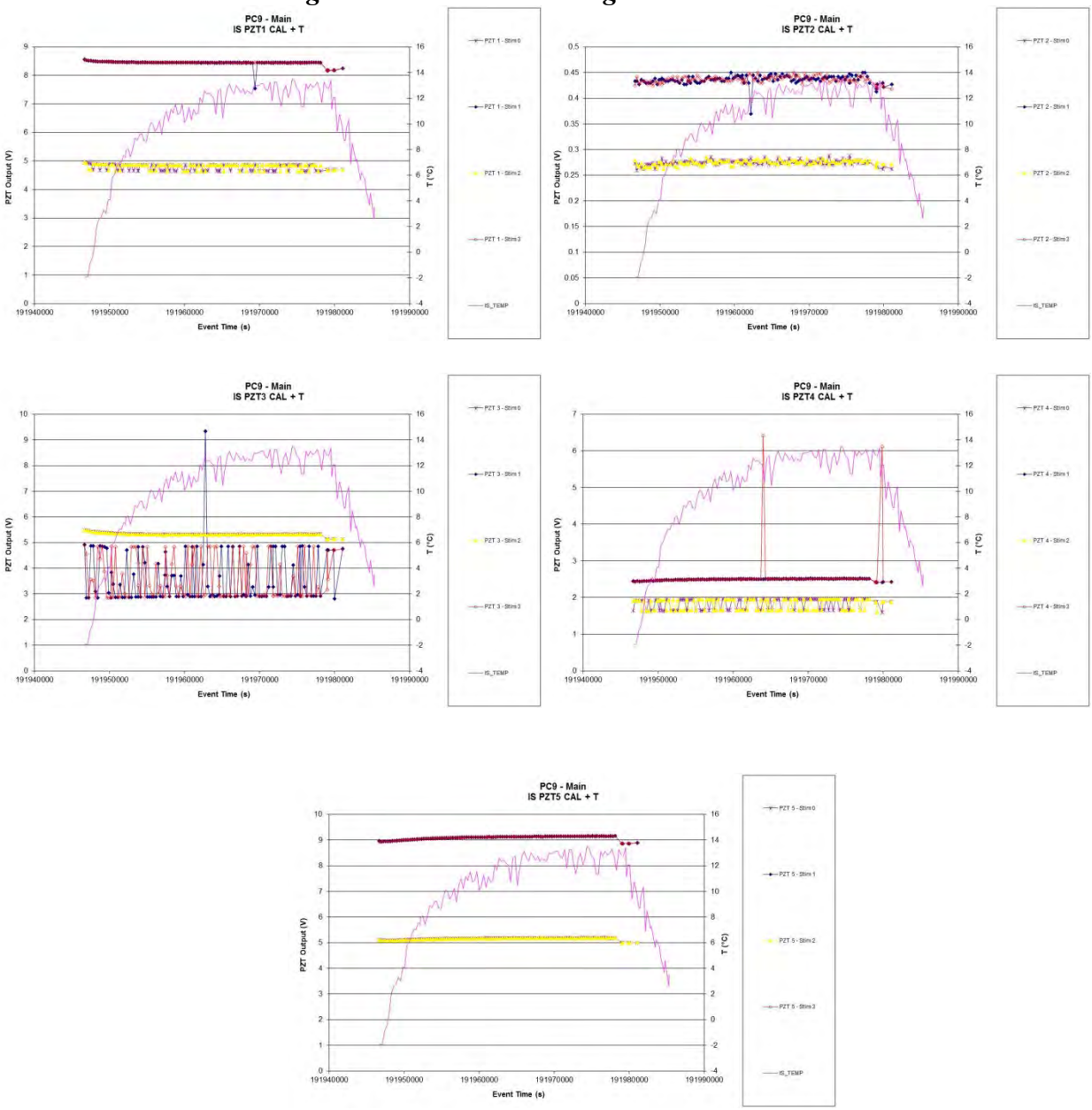


Figure 6.3-7. PZTs CAL Signal vs. time – Main



6.4 MICRO BALANCE SYSTEM (MBS)

6.4.1 MBS – Status

Figure 6.4-1. MBS Operation Status vs. time – Main

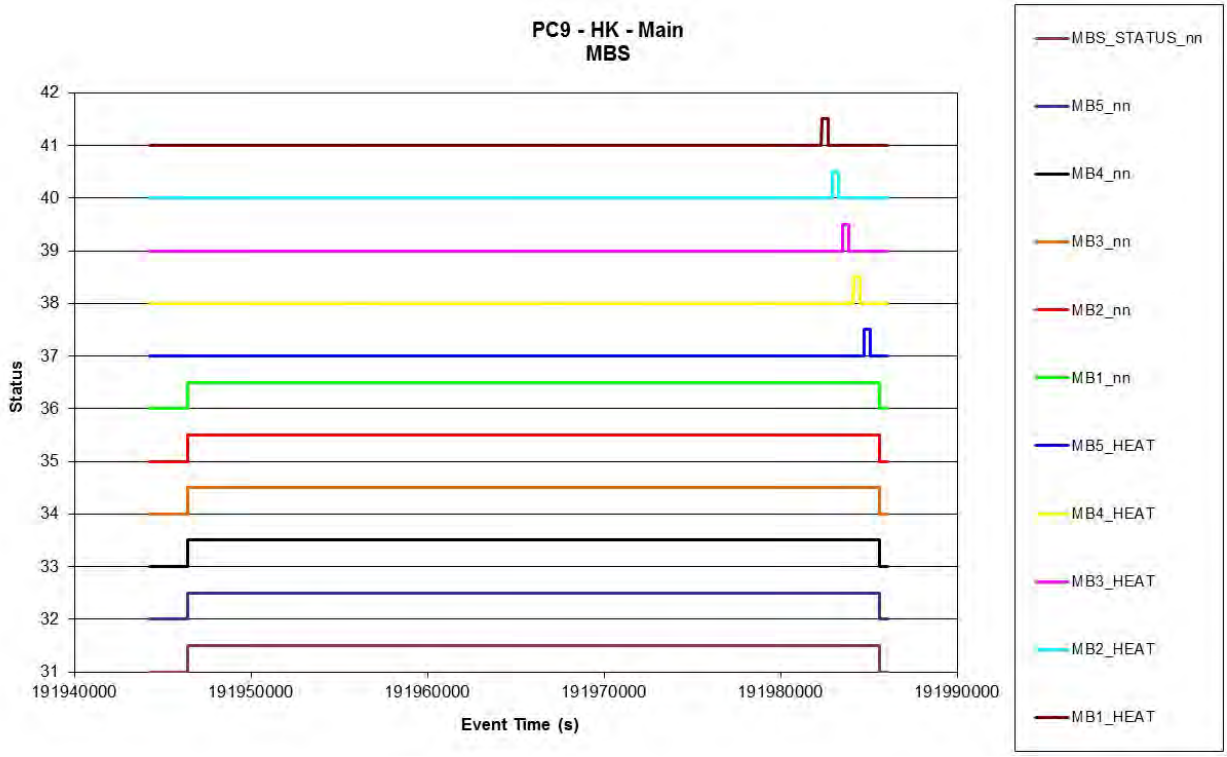
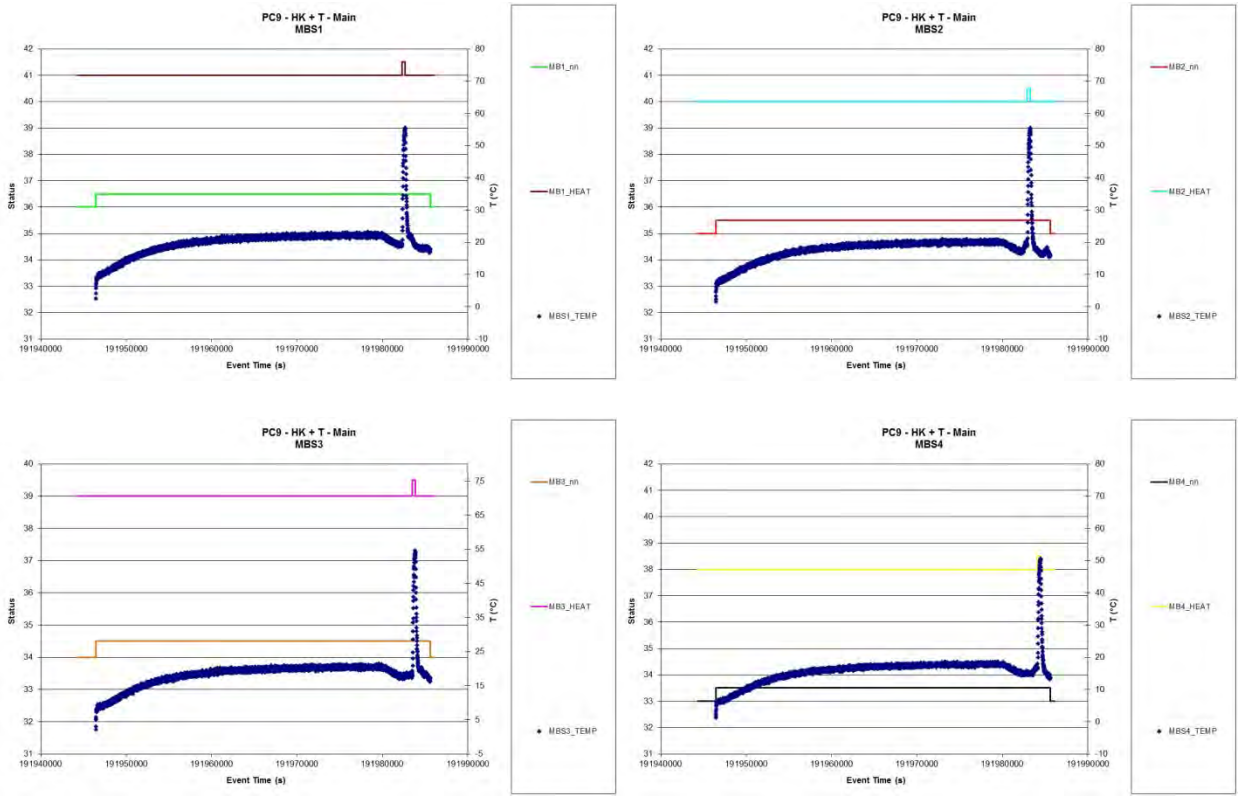


Figure 6.4-2. MBSs Temperature vs. time (SCI) – Main



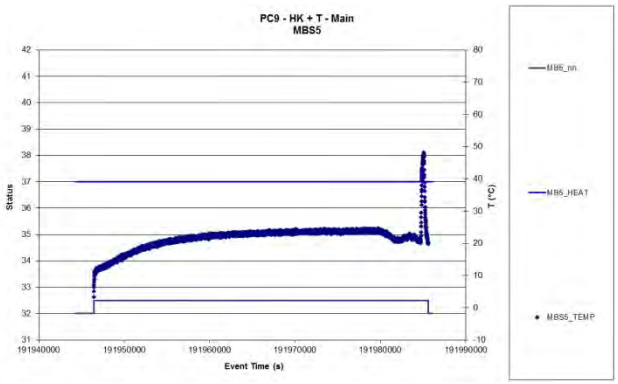
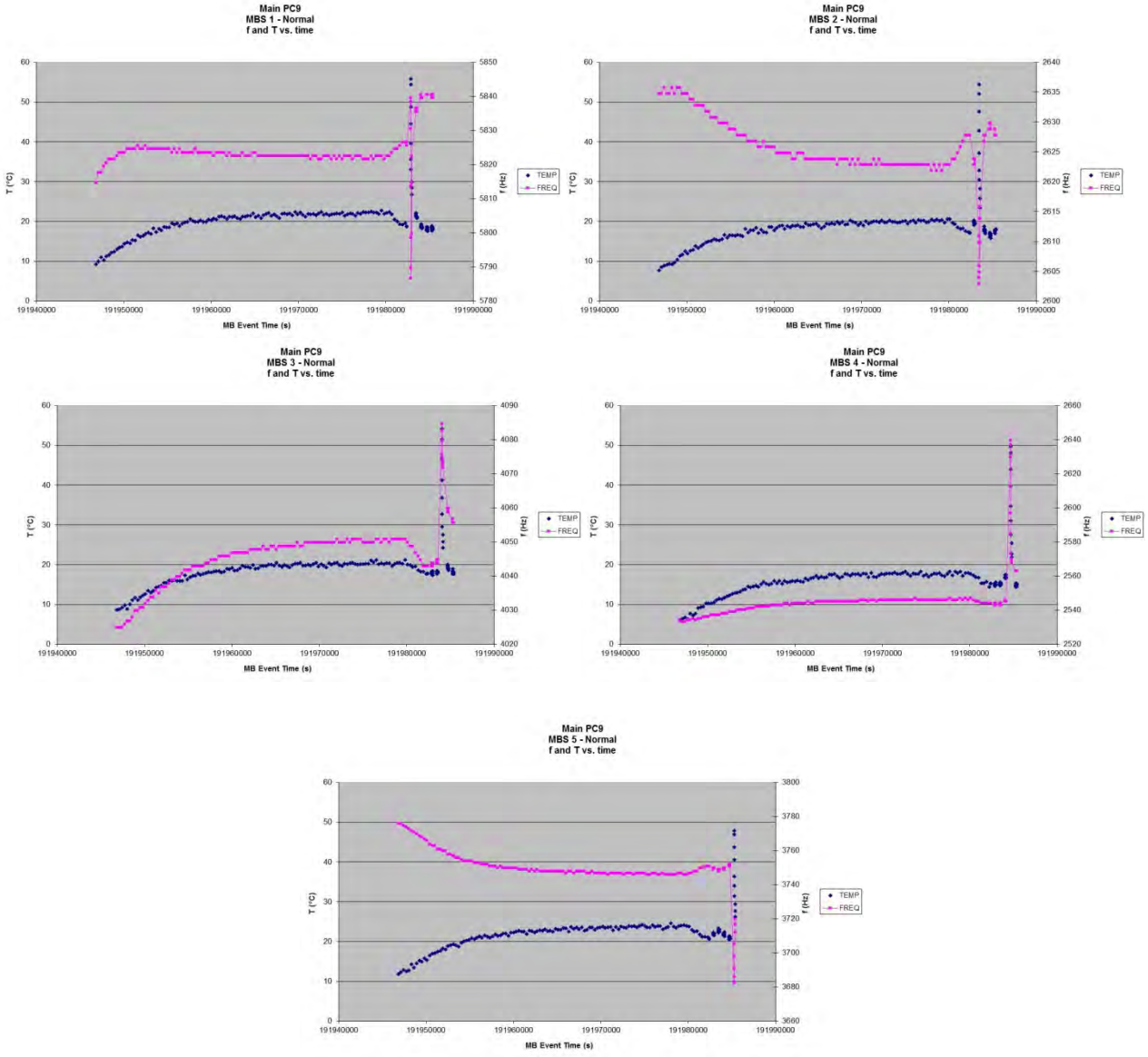


Figure 6.4-3. MBSs Frequency and Temperature vs. time– Main



7. PC9 DATA ANALYSIS – RED INTERFACE (GD01)

7.1 GIADA STATUS

Figure 7.1-1. HK Status of GIADA vs. time – Red

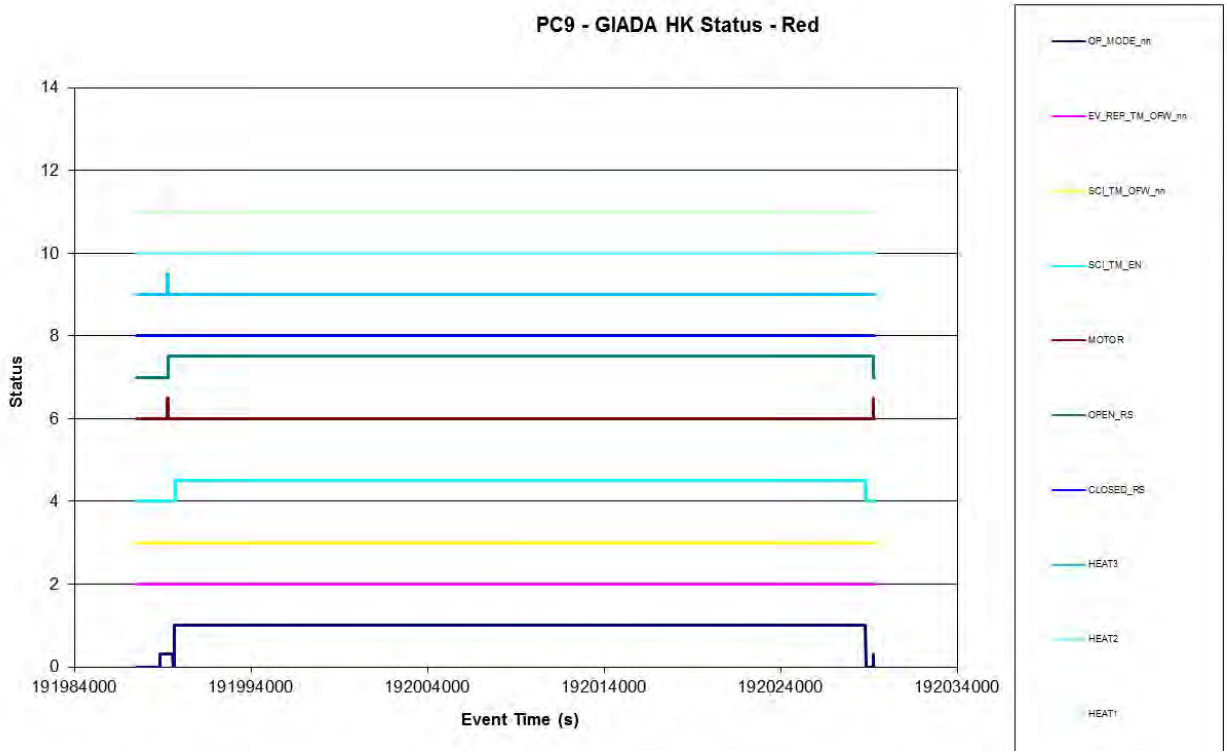


Figure 7.1-2. Power profile and Power Supply temperature vs. time - HK, Red

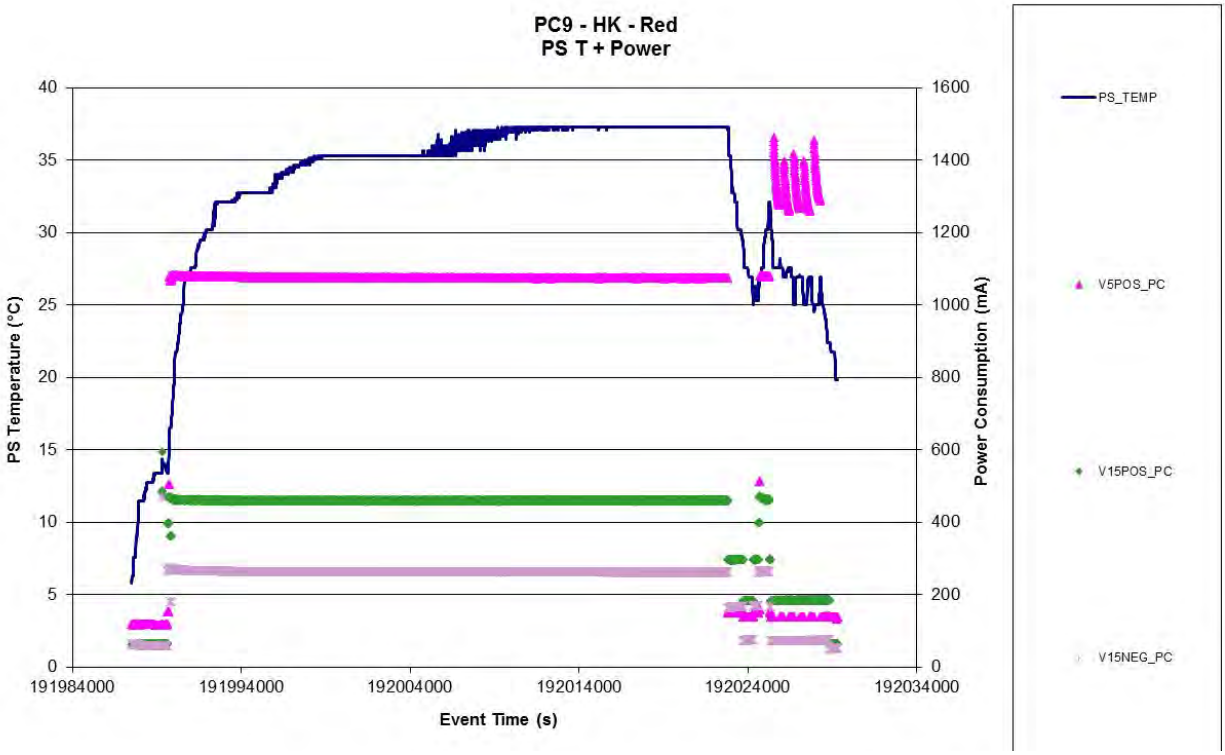


Figure 7.1-3. Evolution of temperatures of system elements vs. time - HK, Red

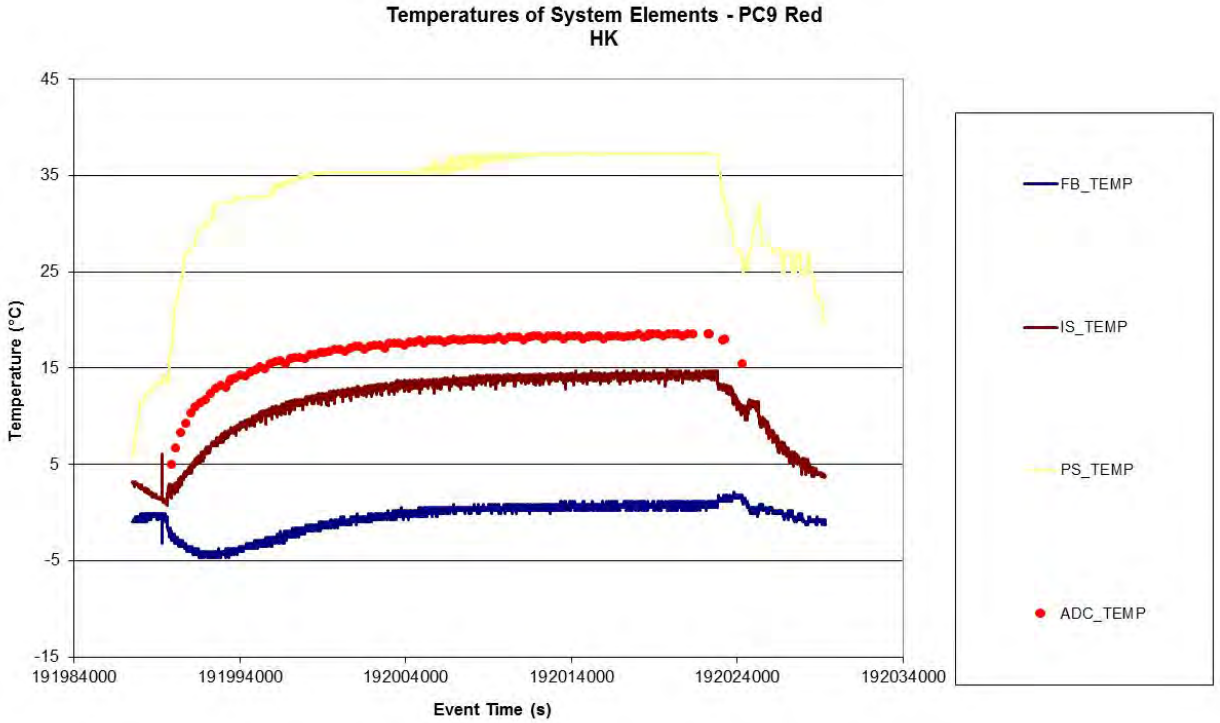


Figure 7.1-4. Evolution of temperatures of sub-systems vs. time with instrument in Normal Mode– Red

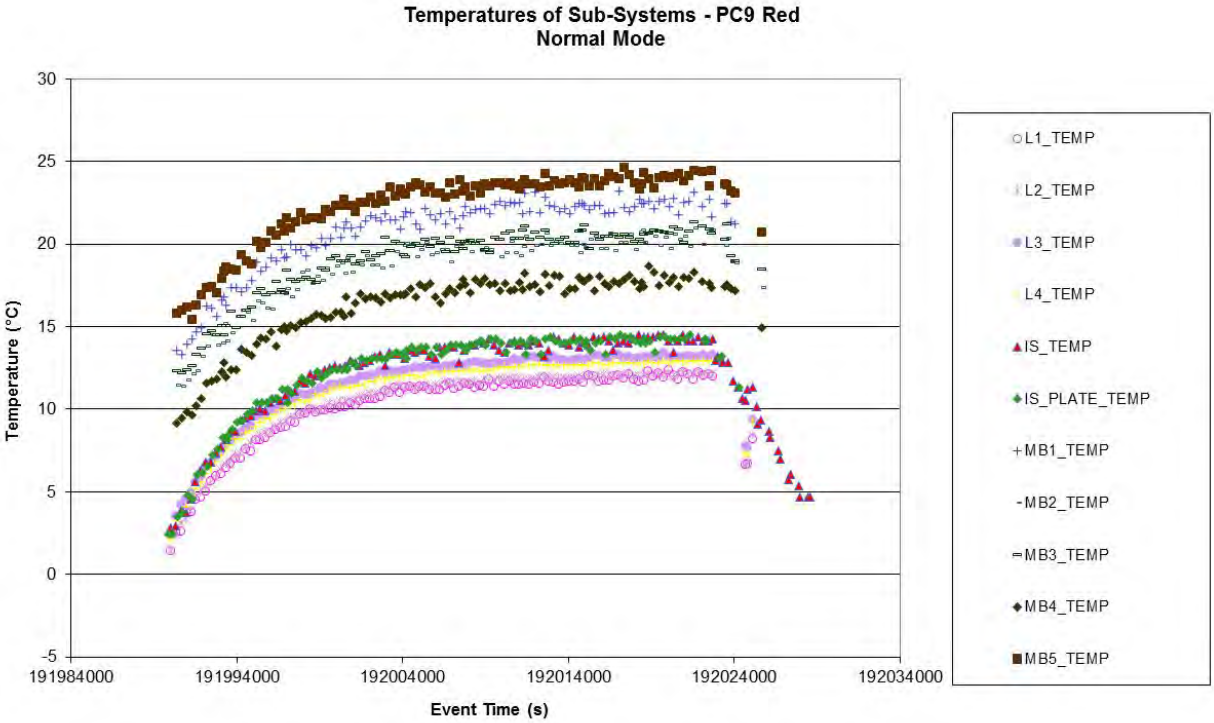


Figure 7.1-5. HK Status versus Temperatures of system elements – Red

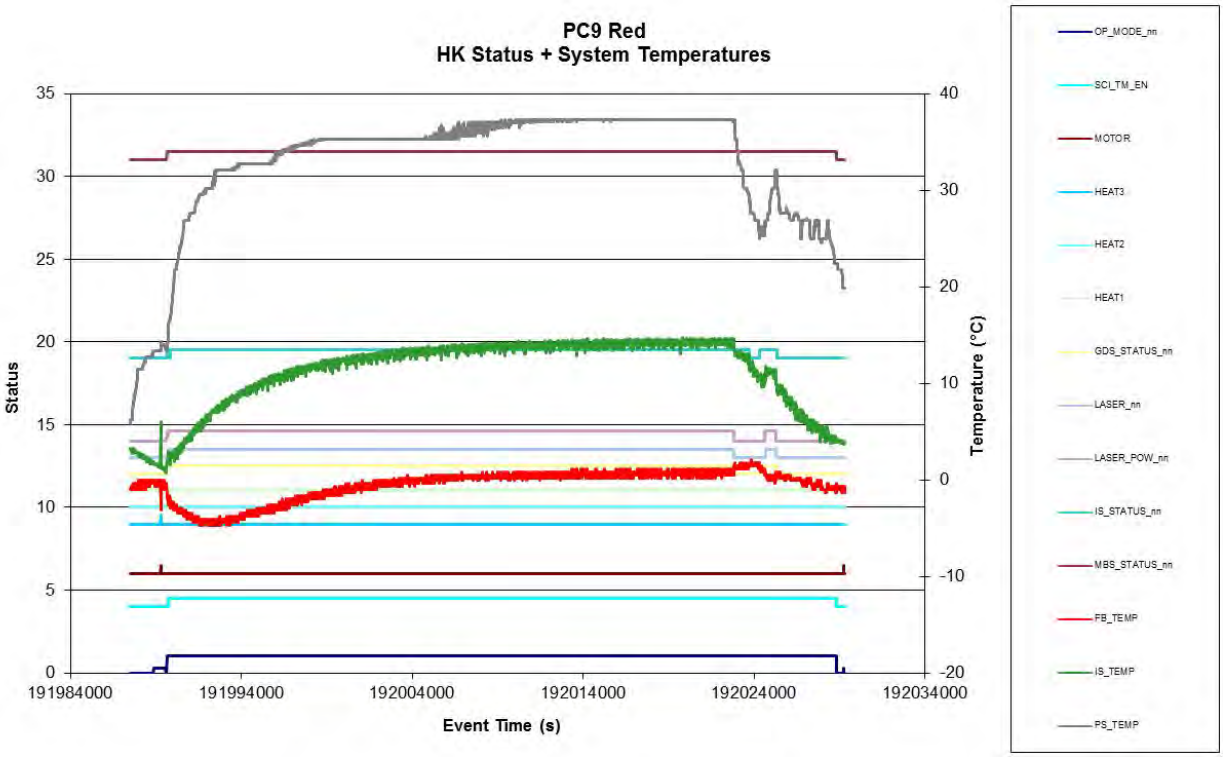
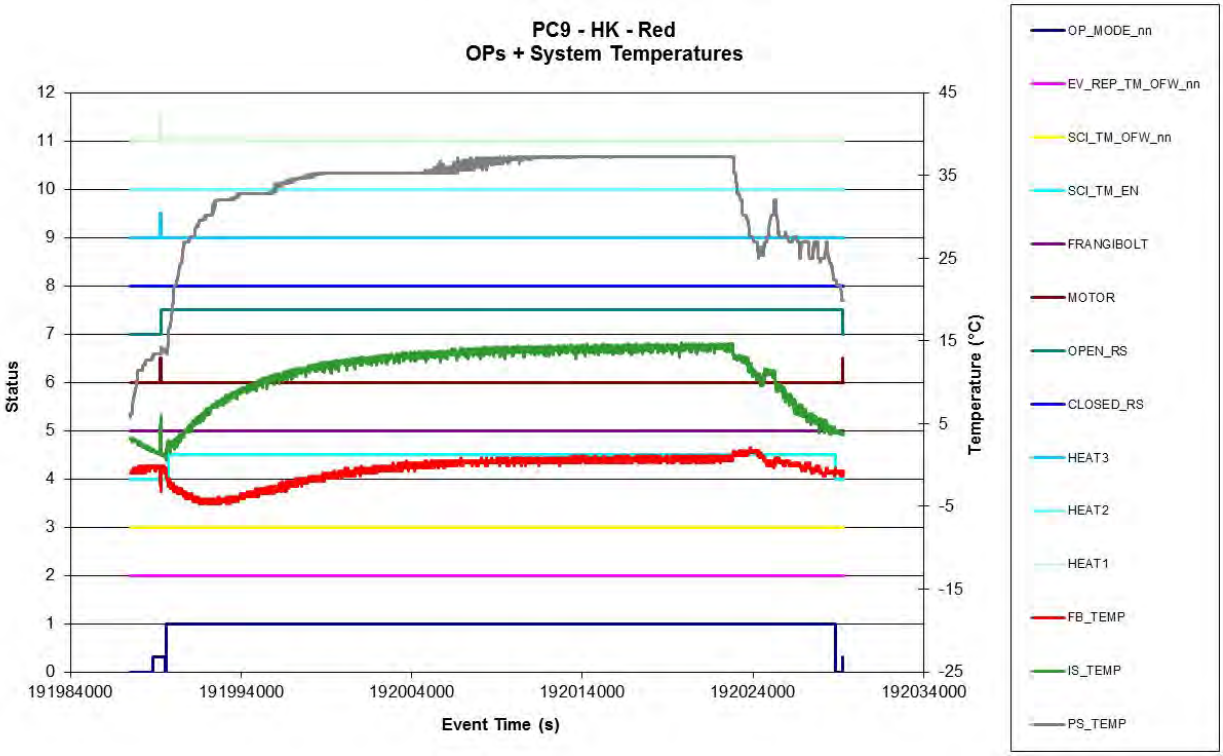


Figure 7.1-6. Operation Status versus Temperatures of system elements – Red
In the diagram are reported operative parameters with relevant variations.



7.2 GRAIN DETECTION SYSTEM (GDS)

7.2.1 GDS – Status

Figure 7.2-1. GDS Operation Status vs. time – Red

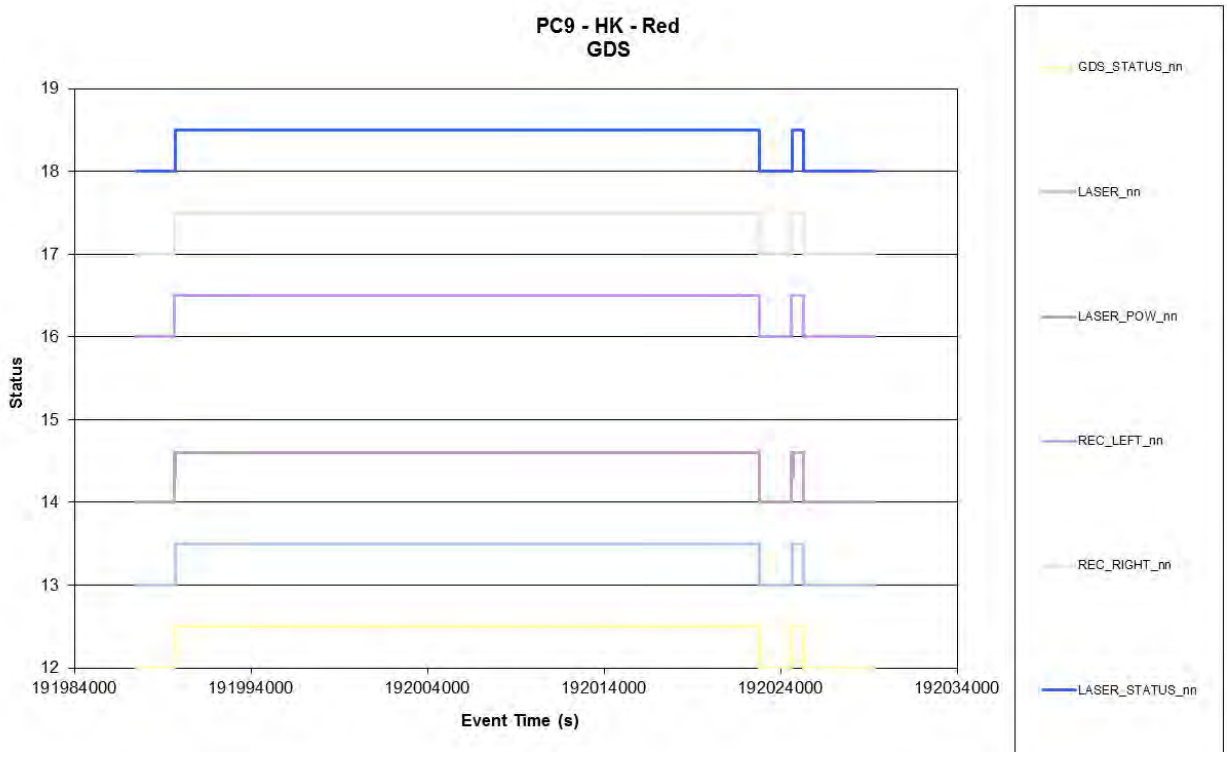


Figure 7.2-2. GDS Thresholds change vs. time – Red

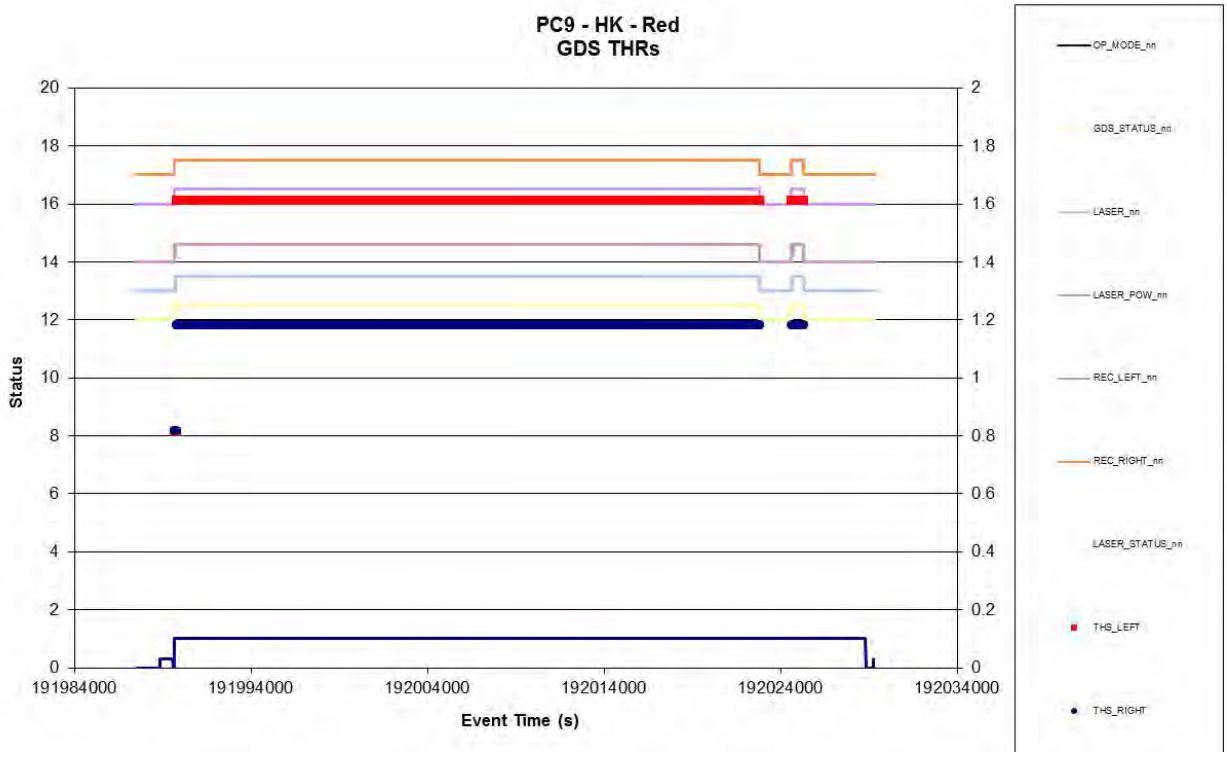


Figure 7.2-3. GDS Laser Temperatures vs. time– Red

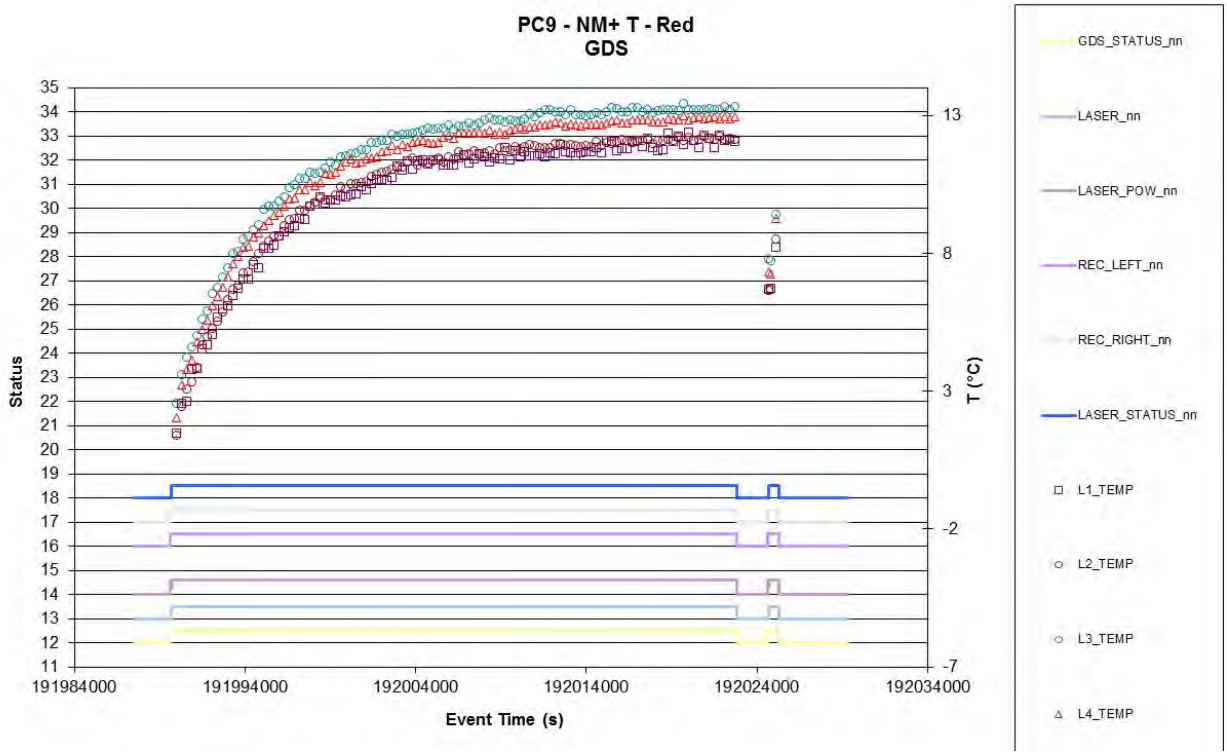


Figure 7.2-4. GDS Laser Monitor vs. time– Red

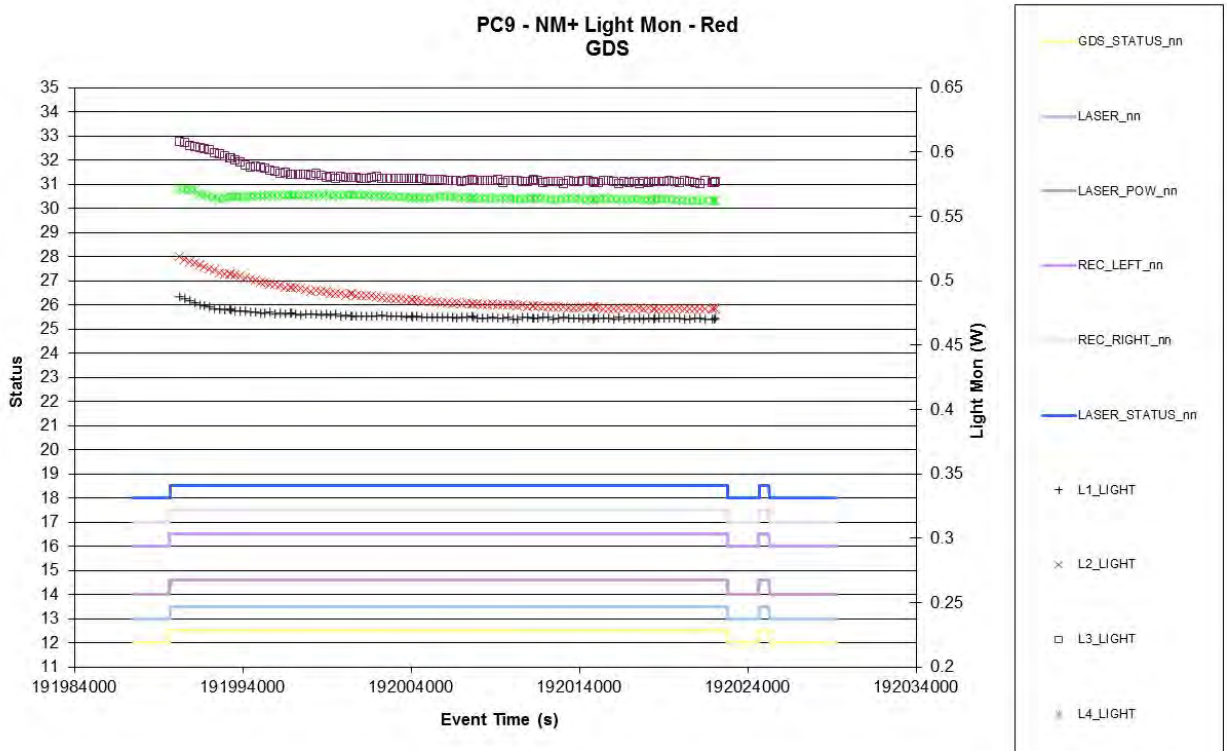


Figure 7.2-5. Lasers Light Monitor versus Temperature (HK, HK-SCI, SCI) –Red

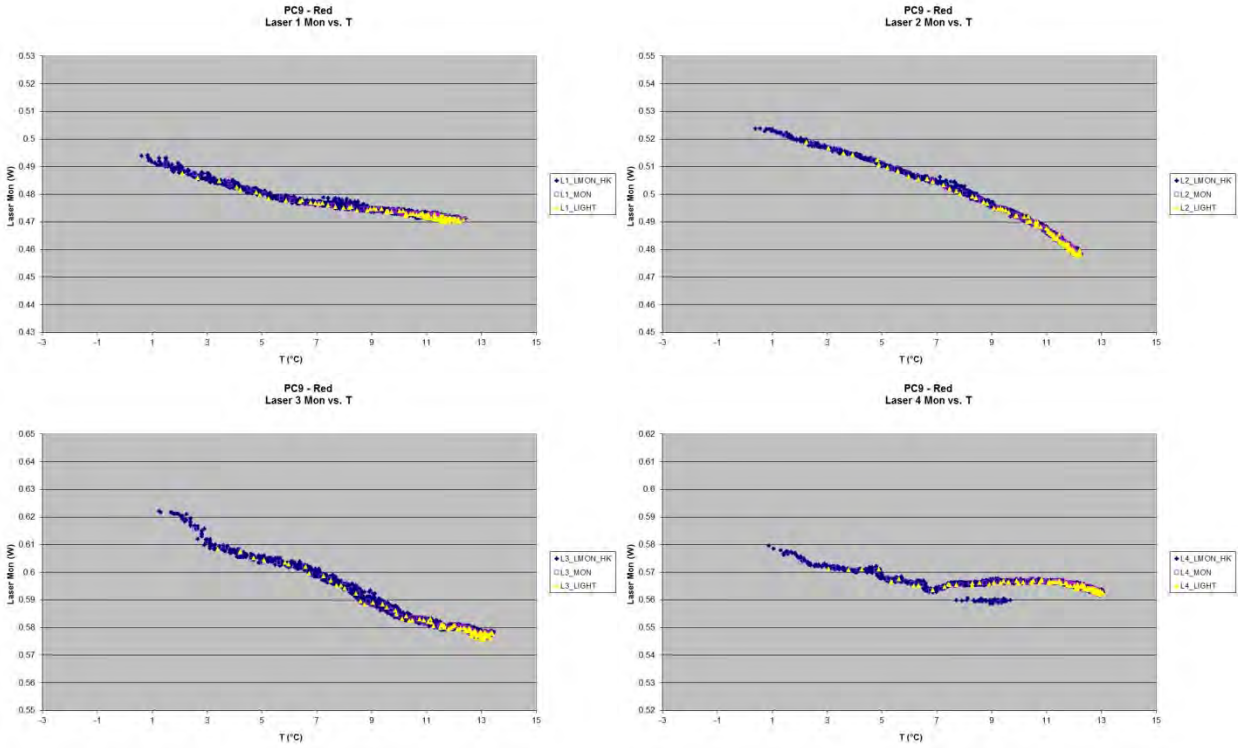
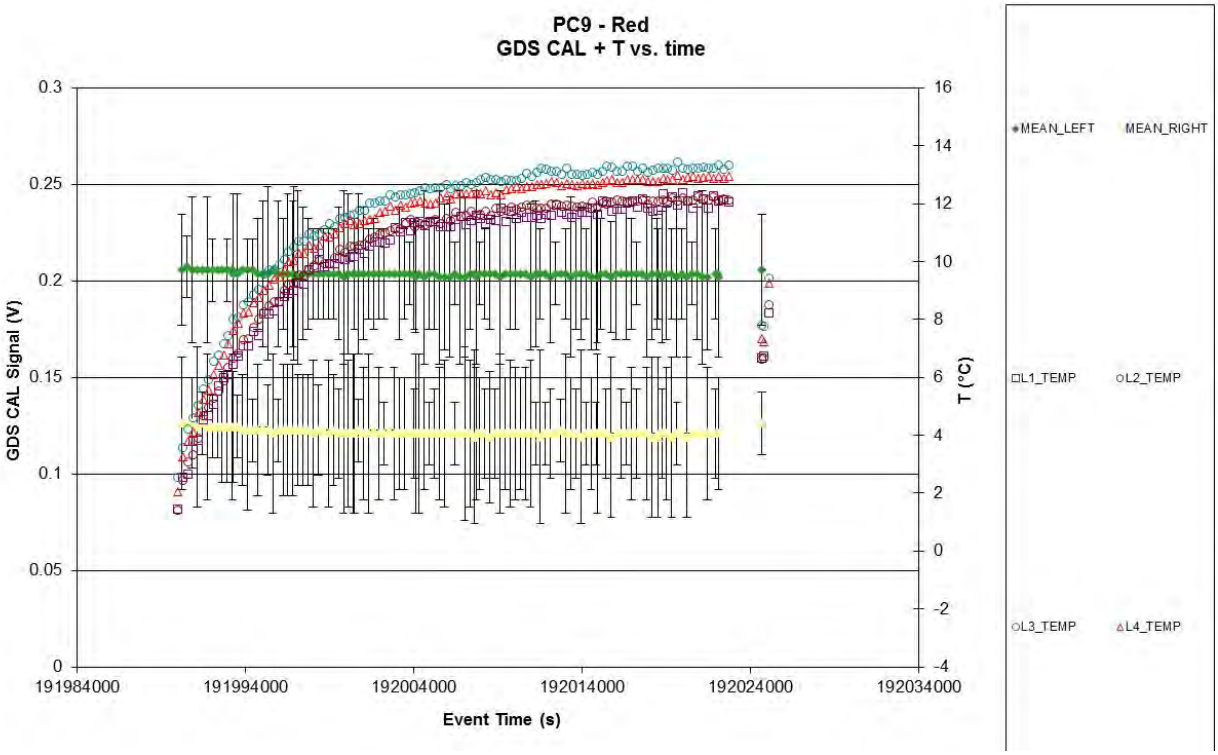


Figure 7.2-6. GDS Calibration Values vs. time– Red



7.3 IMPACT SENSOR (IS)

7.3.1 IS – Status

Figure 7.3-1. IS Operation Status vs. time – Red

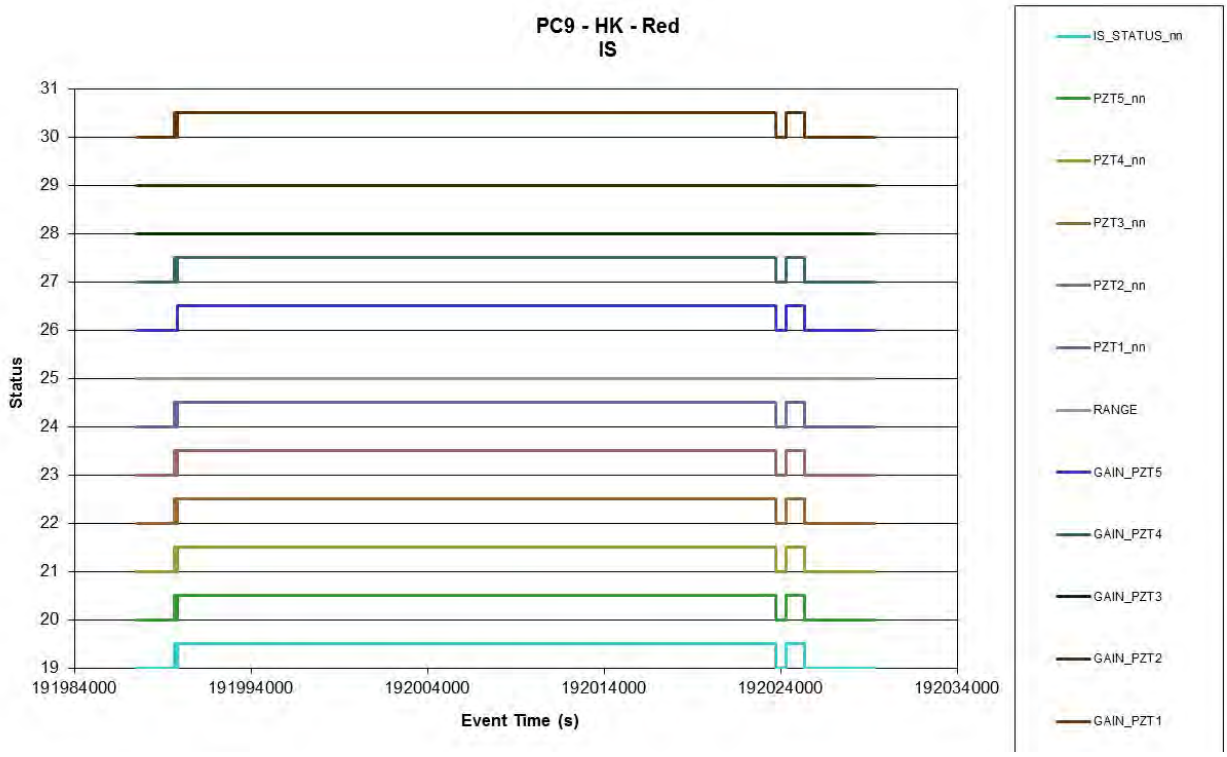


Figure 7.3-2. IS PZT 3 Thresholds change vs. time – Red

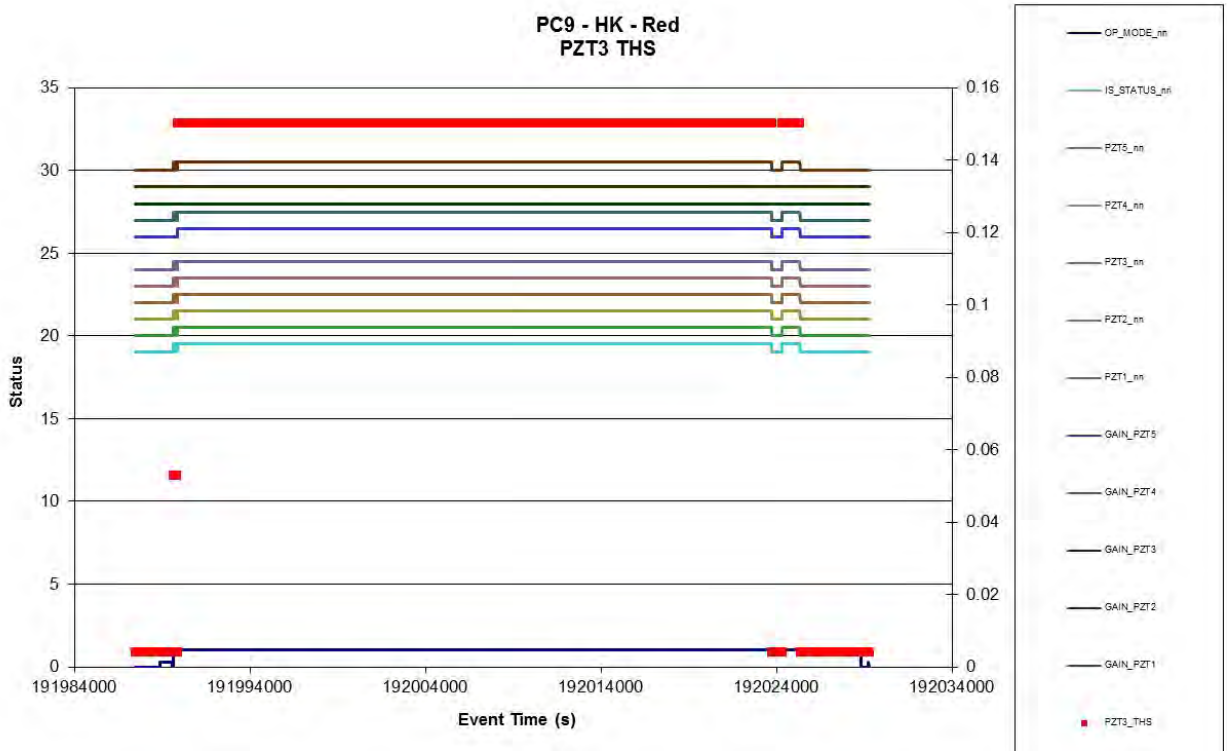


Figure 7.3-3. IS PZT 5 Thresholds change vs. time – Red

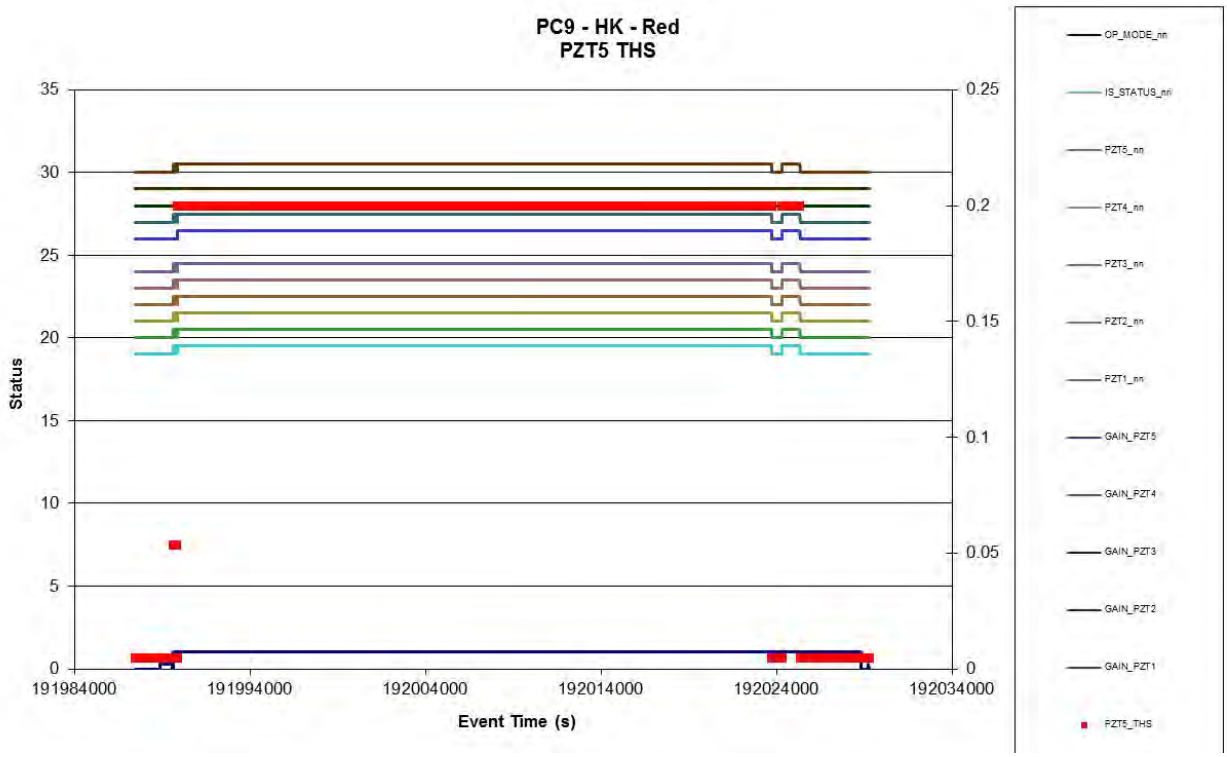
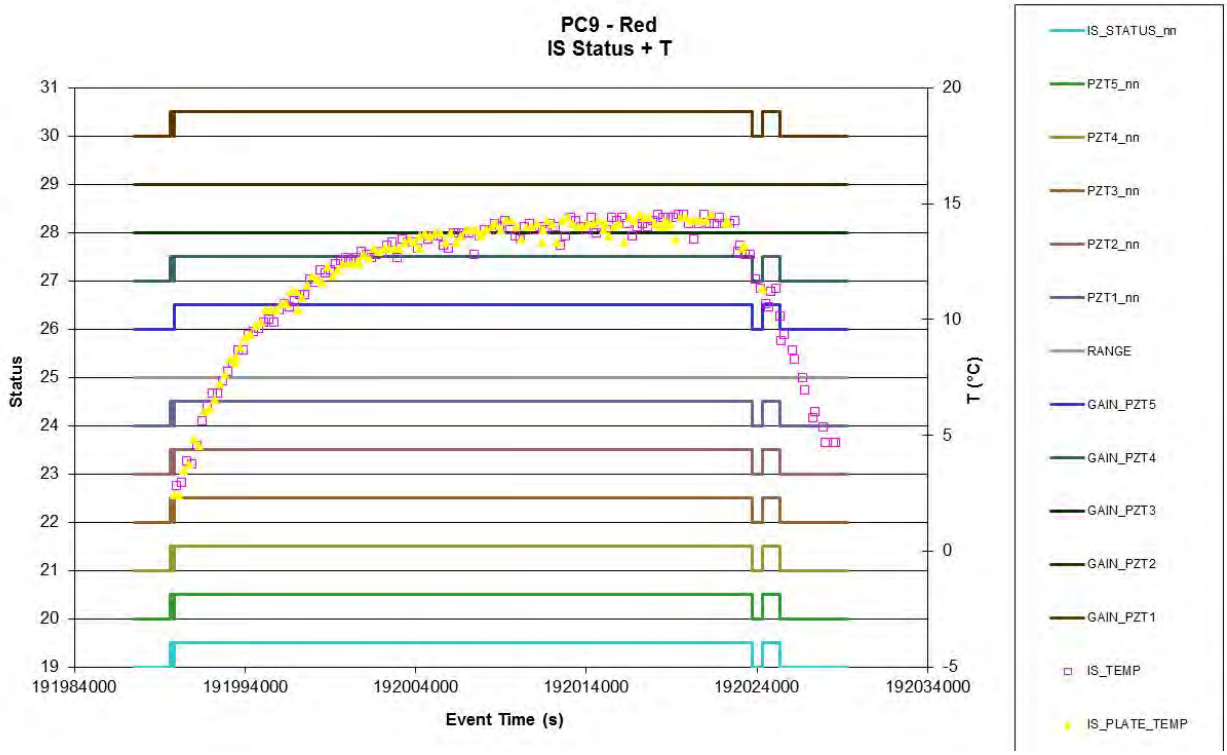


Figure 7.3-4. IS Temperature vs. time (HK, HK-SCI, SCI) – Red



7.3.1.1 CAL

Figure 7.3-5. PZTs Mean and St Dev. CAL vs. time – Red

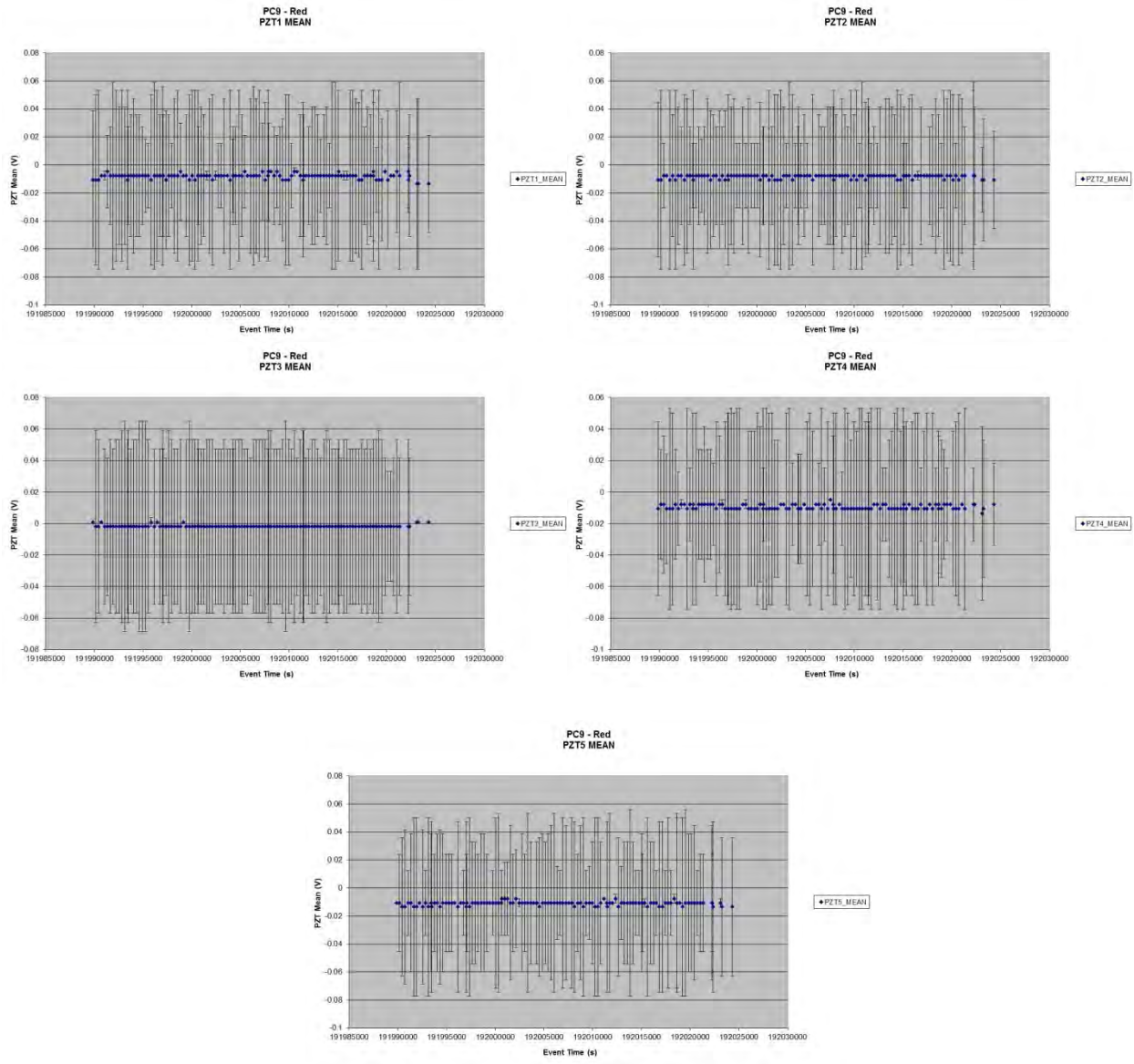


Figure 7.3-6. Reference Voltages for IS calibration vs. time – Red Voltages values for the calibrator don't show level variation

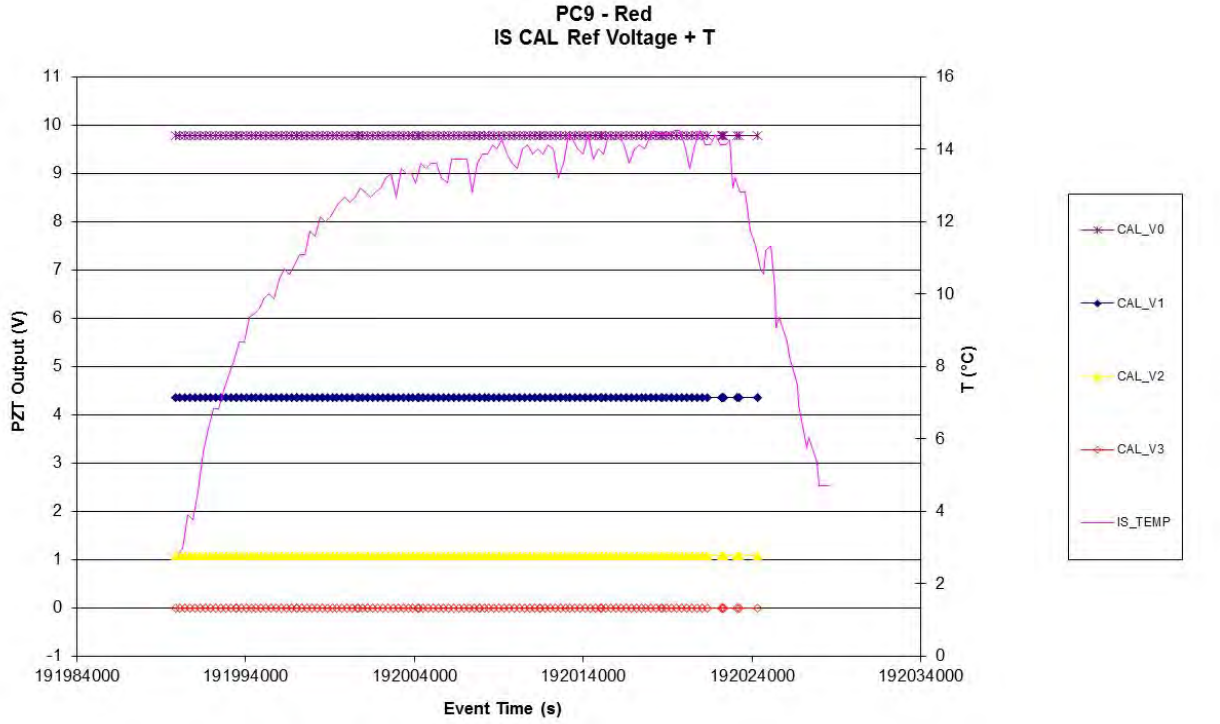
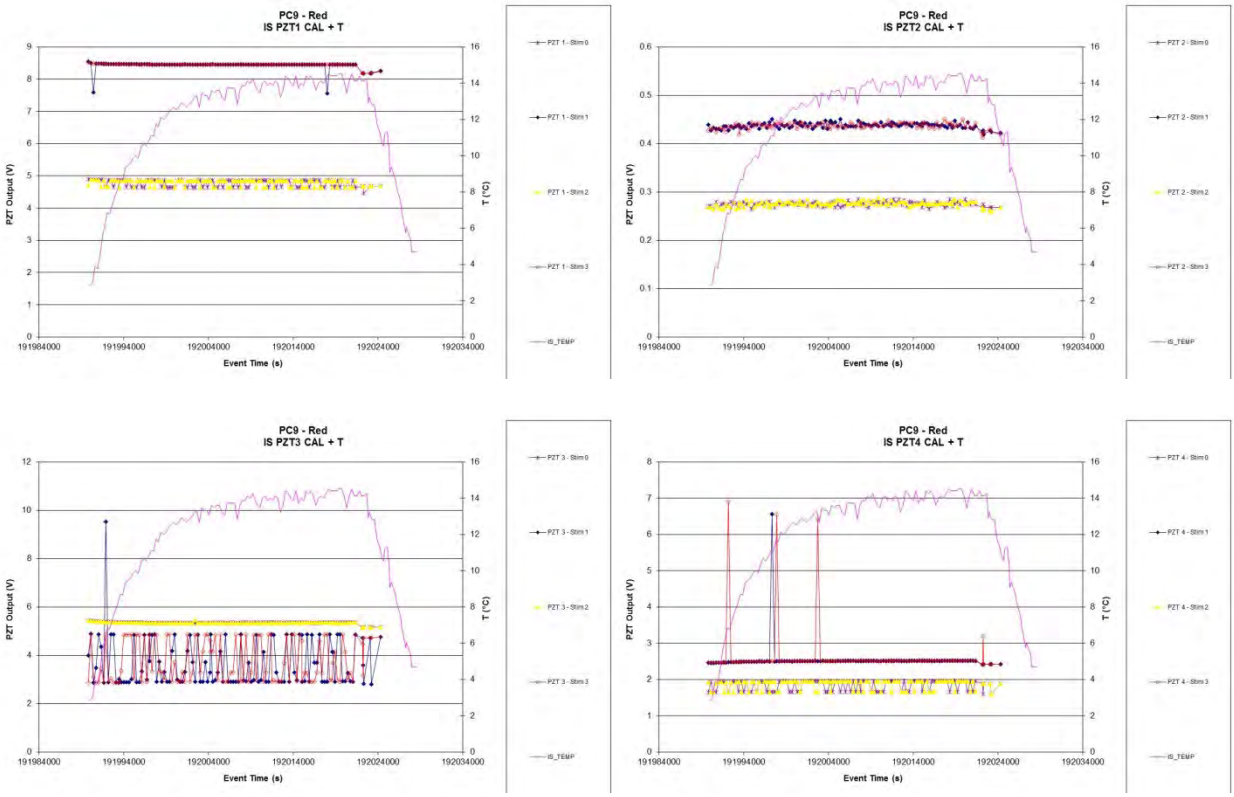
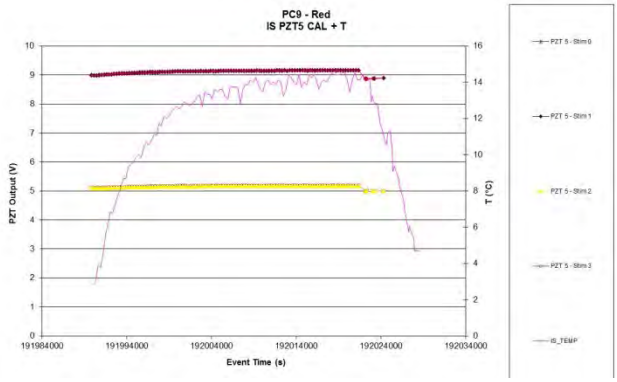


Figure 7.3-7. PZTs CAL Signal vs. time – Red





7.4 MICRO BALANCE SYSTEM (MBS)

7.4.1 MBS – Status

Figure 7.4-1. MBS Operation Status vs. time – Red

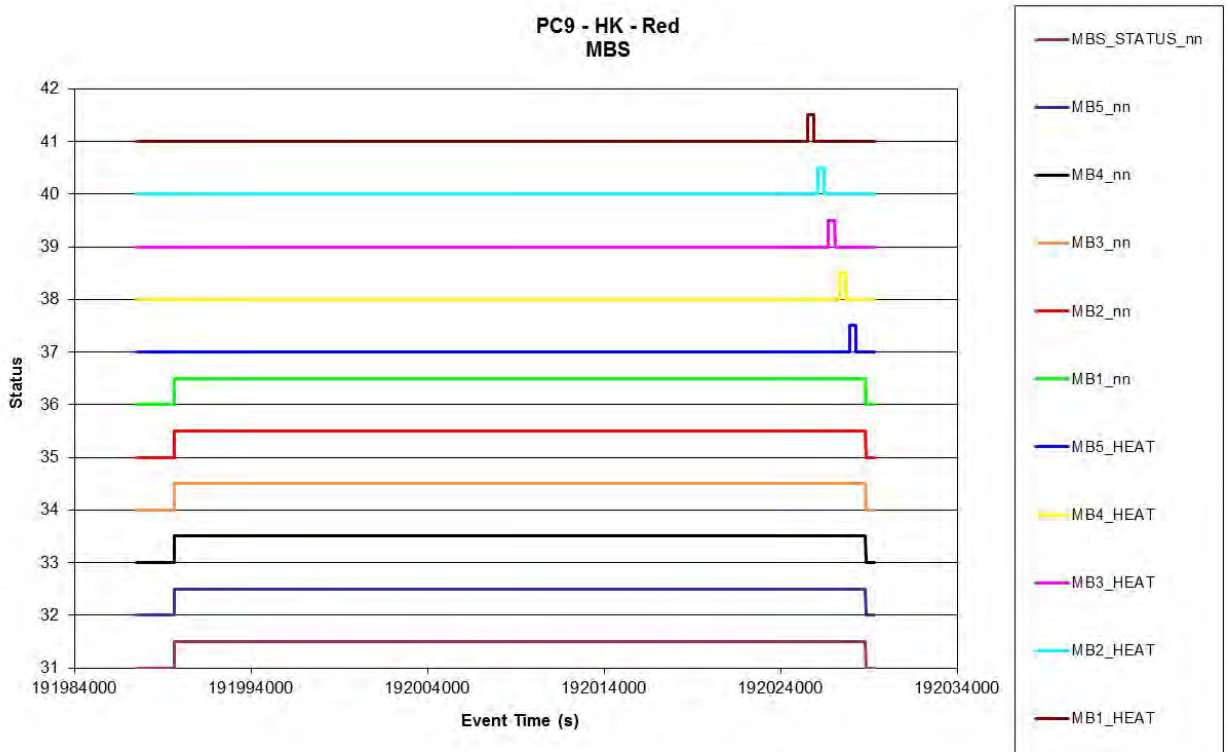
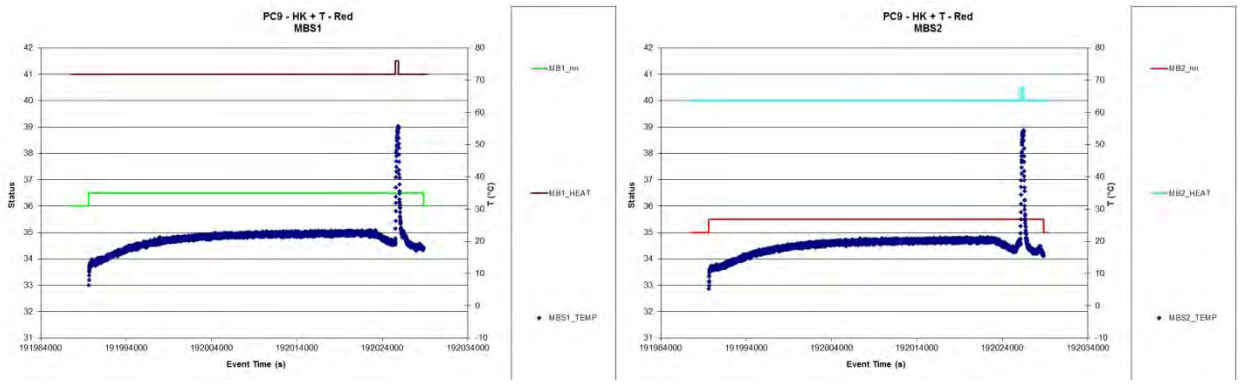


Figure 7.4-2. MBSs Temperature vs. time (SCI) – Red



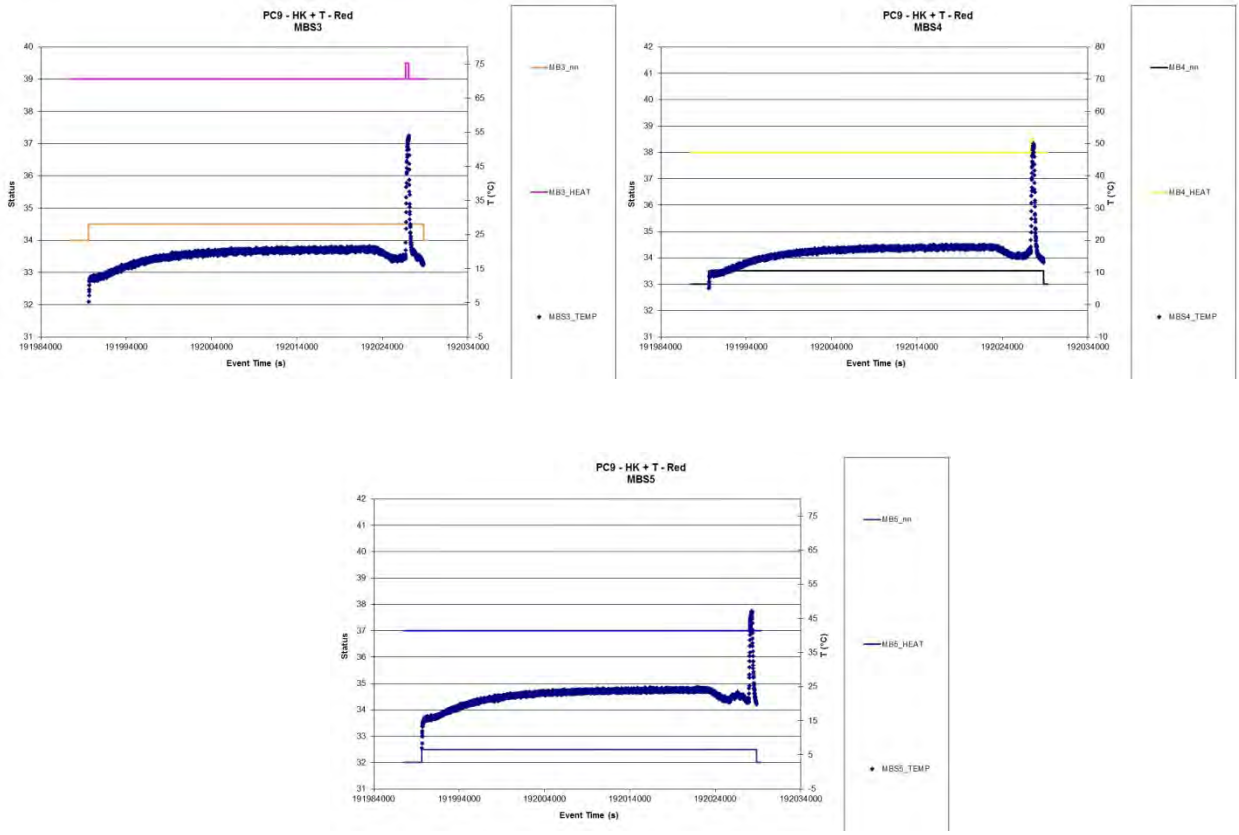
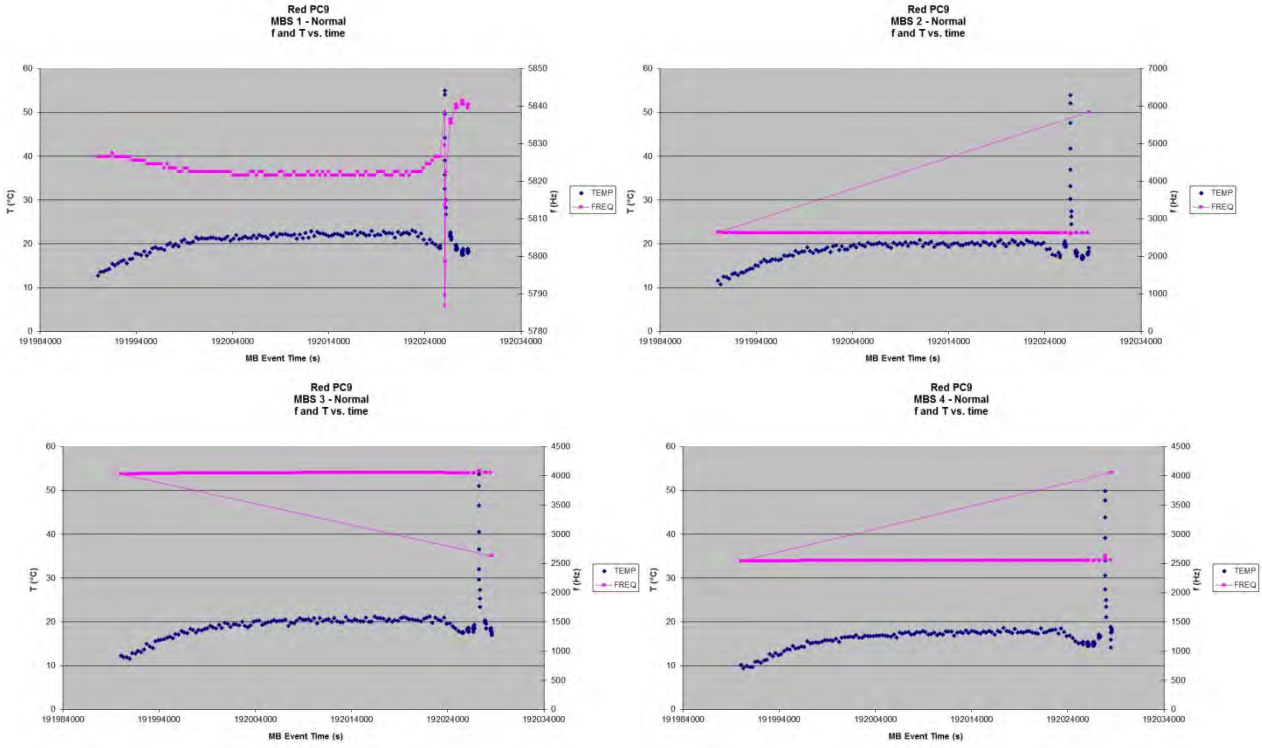
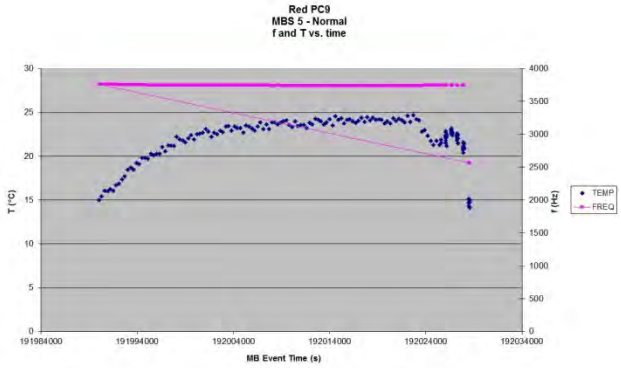


Figure 7.4-3. MBSs Frequency and Temperature vs. time– Red




Red PC9
MBS 5 - Normal
f and T vs. time
T (°C)
f (Hz)
MB Event Time (s)
TEMP
FREQ
0
5
10
15
20
25
30
0
500
1000
1500
2000
2500
3000
3500
4000
191984000
191994000
192004000
192014000
192024000
192034000

8. TIMELINES FOR GIADA PC9

8.1 TIMELINE FOR MAIN INTERFACE (GD01)

```
# $Log: OIOR_PIHRSO_D_0000_GD_PCA___.ROS,v $
#
# Revision 1.8  2006/10/07 11:22:23  GIADA
# timing changed after results of PC2; sequences updated after PC1 have internal
timing
# slightly different wrt previous sequences and requires this correction in the
timeline
# for future PCn. Also IS and GDS thresholds have been modified.
#
# Revision 1.7  2006/09/05 11:22:23  vdhiri
# Updated to have relative timing. Note No Generic Switch ON/OFF used. Use in
PC4/Passive PCn.
#
# Revision 1.6  2006/07/13 09:03:58  vdhiri
# Updated for PC3. And use of top level itl that was necessary for use of PORG.
#
# Revision 1.5  2006/01/24 18:51:20  kwirth
# Final GD OIOR for PC2.
# Original filename: OIOR_PIHRSO_D_0000_GD_PCA3__00013.ROS.
#
# Version  1.3  2005/12/12 giada MAIN for PCn
# Passive Checkout OIOR for GD after sequences update
# RSOC Assumption MSP I1
#
#=============================================================================#
# Filename:       OIOR_PIHRSO_D_0000_GD_PCA1_300013.ROS
# Type:     Input Timeline file
#
# Description:    Passive Check-Out GD adapted to sequences updating
#
#
# Author:   PP
#
#           GIADA
#
# Date:           19 December 2005
#
#
# Proposed by GIADA team
# 19 December 2005
#
# (c) ESA/Estec
#
#-----------------------------------------------------------------------------#
#=============================================================================#

# EPS required, but RSOC will use CVS version
Version: 00001

Ref_date: 24-Nov-2006
Start_time: 000_00:00:00
End_time: 000_12:00:00

#=============================================================================#
```

```
# Description: "1. | Switch on and test - main I/F"
#================================================================================#

+000_00:00:00     GIADA   OFF AGDS001A ( \
                                        VGD0001B = "nom. branch" [ENG] \ #
GIADA on Main IF
                                        VGD0001A = "YES" [ENG]) # Context
exists

+000_00:03:00     GIADA SAFE  AGDS002A # Patch CT v.flight 1

+000_00:08:00     GIADA SAFE  AGDS003A # Patch SW v.2.3

+000_00:24:00     GIADA SAFE  AGDS035A # Go to Cover Mode

+000_00:26:00     GIADA COVER AGDF090A # Open cover

+000_00:36:00     GIADA COVER AGDS065A # Go to Safe mode

+000_00:37:00     GIADA SAFE  AGDS110A # Go to Normal mode

Description: "GIADA operative in normal mode"

+000_00:39:00     GIADA NORMAL      AGDS038A( \
                                            VGDS038A = 35 \
                                            VGDS038B = 26 )   # Set GDS L and
R thresholds

+000_00:39:30     GIADA NORMAL      AGDS037A(\
                                            VGDS037A = Off [ENG])   # Set IS
On/Off

+000_00:40:00     GIADA NORMAL      AGDS036A ( \
                                      VGDS0031 = 0x05 \
                                      VGDS0032 = 0x05 \
                                      VGDS0033 = 0x0f \
                                      VGDS0034 = 0x05 \
                                      VGDS0035 = 0x14 \
                                      VGDS0018 = Enabled [ENG] \
                                      VGDS0019 = Enabled [ENG] \
                                      VGDS0020 = Enabled [ENG] \
                                      VGDS0021 = Enabled [ENG] \
                                      VGDS0022 = Enabled [ENG] \
                                      VGDS0023 = Low [ENG] \
                                      VGDS0025 = High [ENG] \
                                      VGDS0026 = High [ENG] \
                                      VGDS0027 = High [ENG] \
                                      VGDS0028 = High [ENG] \
                                      VGDS0029 = High [ENG])  # Set IS status
and thresholds

+000_00:40:30     GIADA NORMAL      AGDS037A(\
                                            VGDS037A = On [ENG])    # Set IS
On/Off

+000_00:45:00     GIADA NORMAL      AGDS120A ( \
                                      VGDS0010 = 0xF8 \
                                      VGDS0011 = 0x04 \ # Calibrate IS, GDS,
MBS
```

```
                                        REPEAT = 105 \
                                        SEPARATION = 00:05:00 )

Description: "change GIADA setting and check effects"

+000_09:30:00     GIADA NORMAL      AGDF100A # Self-interference test

+000_10:30:00     GIADA NORMAL      AGDF055A # MBS heating

#=============================================================================#
# Description: "2. | Shut down"
#=============================================================================#

+000_11:30:00     GIADA NORMAL      AGDF060A # go to safe mode & off

#====================================END======================================#
```

8.2 TIMELINE FOR REDUNDANT INTERFACE (GD01)

```
# $Log: OIOR_PIHRSO_D_0000_GD_PCB___.ROS,v $
#
# Revision 1.8  2006/10/07 11:22:23  GIADA
# timing changed after results of PC2; sequences updated after PC1 have internal
timing
# slightly different wrt previous sequences and requires this correction in the
timeline
# for future PCn. Also IS and GDS thresholds have been modified.
#
# Revision 1.7  2006/09/05 11:22:23  vdhiri
# Updated to have relative timing. Note No Generic Switch ON/OFF used. Use in
PC4/Passive PCn.
#
# Revision 1.6  2006/07/13 09:03:58  vdhiri
# Updated for PC3. And use of top level itl that was necessary for use of PORG.
#
# Revision 1.5  2006/01/24 18:51:46  kwirth
# Final GD OIOR for PC2.
# Original filename: OIOR_PIHRSO_D_0000_GD_PCB3__00014.ROS.
#
# Version  1.3  2005/12/12 giada REDUNDANT for PCn
# Passive Checkout OIOR for GD after sequences update
# RSOC Assumption MSP I1
#
#=============================================================================#
# Filename:       OIOR_PIHRSO_D_0000_GD_PCB1_300014.ROS
# Type:     Input Timeline file
#
# Description:    Passive Check-Out GD adapted to sequences updating
#
#
# Author:   PP
#
#           GIADA
#
# Date:           19 December 2005
#
#
# Proposed by GIADA team
```

```
# 19 December 2005
#
# (c) ESA/Estec
#
#-------------------------------------------------------------------------------#
#===============================================================================#

# EPS required, but RSOC will use CVS version
Version: 00001

Ref_date: 24-Nov-2006
Start_time: 000_00:00:00
End_time: 001_00:00:00

#===============================================================================#
# Description: "1. | Switch on and test - redundant I/F"
#===============================================================================#

+000_12:00:00     GIADA   OFF AGDS001A ( \
                                        VGD0001B = "red. branch" [ENG] \ #
GIADA on Red IF
                                        VGD0001A = "YES" [ENG]) # Context
exists

+000_12:03:00     GIADA SAFE  AGDS002A # Patch CT v.flight 1

+000_12:08:00     GIADA SAFE  AGDS003A # Patch SW v.2.3

+000_12:24:00     GIADA SAFE  AGDS035A # Go to Cover Mode

+000_12:26:00     GIADA COVER AGDF090A # Open cover

+000_12:36:00     GIADA COVER AGDS065A # Go to Safe mode

+000_12:37:00     GIADA SAFE  AGDS110A # Go to Normal mode

Description: "GIADA operative in normal mode"

+000_12:39:00     GIADA NORMAL      AGDS038A( \
                                            VGDS038A = 35 \
                                            VGDS038B = 26 )   # Set GDS L and
R thresholds

+000_12:39:30     GIADA NORMAL      AGDS037A(\
                                            VGDS037A = Off [ENG])   # Set IS
On/Off

+000_12:40:00     GIADA NORMAL      AGDS036A ( \
                                      VGDS0031 = 0x05 \
                                      VGDS0032 = 0x05 \
                                      VGDS0033 = 0x0f \
                                      VGDS0034 = 0x05 \
                                      VGDS0035 = 0x14 \
                                      VGDS0018 = Enabled [ENG] \
                                      VGDS0019 = Enabled [ENG] \
                                      VGDS0020 = Enabled [ENG] \
                                      VGDS0021 = Enabled [ENG] \
                                      VGDS0022 = Enabled [ENG] \
                                      VGDS0023 = Low [ENG] \
```

```
                                        VGDS0025 = High [ENG] \
                                        VGDS0026 = High [ENG] \
                                        VGDS0027 = High [ENG] \
                                        VGDS0028 = High [ENG] \
                                        VGDS0029 = High [ENG])  # Set IS status
and thresholds

+000_12:40:30     GIADA NORMAL      AGDS037A(\
                                              VGDS037A = On [ENG])    # Set IS
On/Off

+000_12:45:00     GIADA NORMAL      AGDS120A ( \
                                        VGDS0010 = 0xF8 \
                                        VGDS0011 = 0x04 \ # Calibrate IS, GDS,
MBS
                                        REPEAT = 105 \
                                        SEPARATION = 00:05:00 )

Description: "change GIADA setting and check effects"

+000_21:30:00     GIADA NORMAL      AGDF100A # Self-interference test

+000_22:30:00     GIADA NORMAL      AGDF055A # MBS heating

#============================================================================#
# Description: "2. | Shut down"
#============================================================================#

+000_23:30:00     GIADA NORMAL      AGDF060A # go to safe mode & off

#=====================================END====================================#
```