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TITLE: THE RAW AND FITS DATA ARCHIVE OF THE PICSIT QUALIFICATION MODEL (QM) THERMAL VACUUM TEST CAMPAIGN (May 2000) AT LABEN

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1 Introduction

1.1 Purpose and scope

Based on the test procedures given in [1], in the period 2-10 May 2000 a thermal vacuum test campaign has been carried out at Laben on the PICsIT Qualification Model (QM) integrated at Module Level.

As for the PICsIT QM (April 2000) test campaign, the QM model consisted of one flight representative egg crate containing a complete module (512 pixels), and of one complete DFEE.

The PICsIT Test Equipment (TE) was exploited in order to set and command the detector, and to gather the detector data. The Science Console was in charge of acquiring all the TC and the LBR TM packets (containing the instrument housekeeping) forwarded by the CCOE as well as all the HBR TC and TM packets (containing the science data) forwarded by the HBR SCOE.

The purpose of the present note is to provide information relevant for user of the *QM Thermal Vacuum Test Campaign [May 2000] at LABEN permanent archive* consisting of 8 CDROMs (in 2 copies) where all the log, raw and FITS data files of the relevant measurements archived by the Science Console have been saved.

A summary of the set up of each measurement is presented in chapter 2.

As the no modification occurred, for all the information devoted to the format and content of the data, the reader should refer to the report of the previous PICsIT QM (April 2000) test campaign [2]; in which:

- the content and the format of the data produced by the instrument are given chapter 2;
- chapter 3 and Annex B details the format of the data buffers produced by the HBR SCOE with the instrument data, and archived in the raw archive by the Science Console;
- chapter 4 gives an overview on the raw data archiving and processing and on the FITS file production on the Science Console; further details on the content and the format of the FITS files are given in annex C;

Hence, the present document is limited to the information specific to this CDROM archive, namely:

- chapter 3 contains the whole directory of the permanent archive on CDROMs and on the Magneto Optical Cartridge which before re-initialisation have been backed up on DAT tapes.

A general description of the Science Console software architecture can be found in [3].

1.2 Reference Documents

[1] Laben IBIS Team, PICsIT Module Mechanical Electrical Functional & Performance Test Procedure, TL 15182, IN-IB-LAB-TP-0021, Issue 2, April 2000.

[2] M.Trifoglio, F.Gianotti, J.B.Stephen, The raw and the FITS data archive of the PICsIT Qualification Model (QM) Test Campaign (April 2000) at Laben, IN-IM-TES-RP-0039, Issue 1.0, Internal Report 279/00, May 2000.

[3] M.Trifoglio, F.Gianotti, J.B.Stephen, G.Ferro, D.Visparelli, The Science Test Equipment for the INTEGRAL-PICsIT instrument, paper presented at the SPIE's Annual Meeting, 18-23 July 1999, Denver, Colorado USA.

1.3 Document History

Issue 1.0	first issue.
Issue 1.1	minor changes for typos errors.

2. Measurement log

Summary information on each measurement are provided by the logbooks of the Science Console and the CCOE presented in the following sections.

2.1 Science Console Logbook

The table hereafter contains the information noted on the logbook of the Science Console in order to provide for each measurement:

- Runid: the Run Identification number assigned to the measurement;
- Data: the date of the measurement;
- Source: the target: X-Ray source or background (Bkg);
- Exp. Time: the time duration of exposure;

Additional notes provides information on the environment and the instrument set up.

Runid #	Date	Source	Exp. time (s)	Notes
2952	28.4.00	Bkg	1800"	Killed A8P8 A8P12
2953		Cs-137	1900"	"
2954		Y-88		"
2965	2.5.00	Bkg	1800"	T = 32 C
2966		Cs-137	1800"	"
2967		Y-88	1800"	"
2973	3.5.00	Bkg	-	T = -25 0 –20 C
2974		Bkg	-	T = -20 C
2975		Cs-137	1800"	T = -20 C
2976		Bkg	1800"	T ~ -20 C
2980	4.5.00	Bkg	1800"	T = +32 C
2983	5.5.00	Bkg	900"	T = -25 C TE bloccato
2986		Bkg	1639"	T = -25 C
2988		Y-88	1800"	T = -20 C
2989		Cs-137	1800"	T = -20 C
2996	8.5.00	Bkg	1800"	T = -20 C
2998		Bkg	1800"	T = -20 C
3001	9.5.00	Bkg	1800"	T = -20 C
3002		Cs-137	1800"	T = -20 C
3003		Cs-137	1800"	T = -20 C
3010	10.5.00	Bkg	1800"	T = +32 C
3012		Bkg	?	T = +32 C
3013		Cs-137	1800"	T = +32 C
3014	?	?	?	
3016		Cs-137	1800"	T = +32 C
3017	11.5.00	Cs-137	1980	T = +32 C
3027		Bkg	2000"	Ambient
3028		Y-88	1800"	Ambient
3029		Cs-137	1800"	Ambient
3030		Cs-137	1800"	Ambient

2.2 CCOE Logbook

Hereafter is the logbook prepared by the CCOE test Conductor, which provides for each run the values of some of the analogic and digital housekeepings.

- Analogic housekeeping as read (no engineering conversion) from the module:

  TH1: voltage threshold of semimodule 1

  TH2 voltage threshold of semimodule 2

  REF: 2.5 V voltage reference of Icarus

  PD: voltage reference for the Bias Line of the module

- Digital housekeepings as read from the module:

  RAT S1 : average event rate on 8 second for semimodule 1

  RAT S2: average event rate on 8 second for semimodule 1

  P.C.: current value of the power consumption on the given line

Notes:

Thresholds at B6 for tests N° 1 to 4 and 23 to 38 (B0 for others tests).

Killed pixels(noisy): S1 A8 P8 - P12 (always killed).

N	TEMP (	TEST	RUN	TH1	TH2	REF	PD BIA	RAT S1	RAT S2	P.C. +12v	P.C. +5v	P.C. -12v	Note: KILLED PIXEL(noisy)
1	Amb.	Bkg.	2952	1.12	1.08	2.5	3.96	2b0	270	33	450	41	FIRST CYCLE
2	Amb.	Cs137	2953	1.12	1.08	2.5	3.96	11a0	11a0	33	450	41	
3	Amb.	Y88	2954	1.12	1.08	2.5	3.96	0e20	0e80	33	450	41	
4	+40	NA	NA	1.12	1.08	2.5	3.96	NA	NA	31.5	472	41.2	STANDBY no acquisit.
5	+32	Bkg.	2965	1.22	1.17	2.5	3.96	268	24b	31.5	450	41.3	
6	+32	Cs137	2966	1.21	1.17	2.5	3.96	10cf	Ff8	31.5	452	41.3	
7	+32	Y88	2967	1.22	1.17	2.5	3.96	D5c	C66	31.5	452	41.3	
8	-25	NA	NA	1.12	1.08	2.5	3.95	NA	NA	31.7	430	39.5	STANDBY no acquisit.

9	-20	Cs137	2975	1.22	1.17	2.5	3.96	Dbc	Cf5	31	412	40	S1 A11 P11 and P15 S1 A8 P7 S2 A5 P0
10	-20	Bkg.	2976	1.22	1.17	2.5	3.96	1d1	1da	30	411	40	As above
11	+32	Bkg.	2980	1.21	1.17	2.5	3.96	270	250	31.4	450	41.2	SECOND CYCLE S1 A0 P2 S1 A11 P15 no counts
12	-30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
13	-20	Bkg.	2986	1.20	1.17	2.5	3.96	210	1f0	30	410	40	S1 A11 P15 S1 A12 P2 and P3 S1 A12 P7 no counts
14	-20	Y88	2988	1.21	1.16	2.5	3.96	Be0	B20	30	410	40	As above
15	-20	Cs137	2989	1.21	1.17	2.5	3.96	Eb0	D90	30	412	40	As above
16	+32	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	THIRD CYCLE Unit OFF only 28v ON
17	-20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Unit OFF only 28v ON
18	+32	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	FOURTH CYCLE Unit OFF only 28v O
19	-20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Unit OFF only 28v ON
20	+32	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	FIFTH CYCLE Unit OFF only 28v ON
21	-20	Bkg.	2996	1.21	1.17	2.5	3.96	220	1c0	30.6	411	40.2	S1 A12 P2 and P3 S1 A12 P7 no counts LET ON S1 A8 P8-P12
22	+32	Bkg.	2998	1.21	1.17	2.5	3.96	260	230	31.5	451	41	SIXTH CYCLE S1 A12 P7, P2 and P3 S1 A11 P15 no counts

23	-20	Bkg.	3001	1.12	1.07	2.5	3.96	250	210	30.7	412	40	S1 A12 P7, P2 and P3 LET ON S1 A8 P8-P12
24	-20	Cs137	3002	1.12	1.08	2.5	3.96	Fe0	E70	30.7	412	40	As above
25	-20	Cs137	3003	1.12	1.08	2.5	3.96	Fd0	E80	30.7	412	40	As above
26	-20	Cs137	3007	1.12	1.08	2.5	3.96	Fdc	E78	30.7	412	40	As above
27	+32	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	SEVENTH CYCLE
28	-20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
29	+32	Bkg.	3012	1.12	1.08	2.5	3.96	2a0	260	31.5	451	41.3	EIGHTH CYCLE S1 A11 P11 S1 A12 P7,P3and P2 S1 A11 P15 no counts LET ON S1 A8 P8-P12
30	+32	Cs137	3013	1.12	1.08	2.5	3.96	1190	1020	31.5	451	41.3	As above
31	+32	Cs137	3016	1.12	1.08	2.5	3.96	1180	1010	31.5	451	41.3	As above
32	+32	Cs137	3017	1.12	1.08	2.5	3.96	11e0	10f0	31.5	451	41.3	As above
33	-20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
34	Amb.	Bkg.	3027	1.12	1.08	2.5	3.96	2ac	270	31.4	443	41.1	S1 A12 P7 S1 A11 P11 S1 A11 P15 no counts LET ON S1 A8 P8-P12
35	Amb.	Y88	3028	1.12	1.08	2.5	3.96	D10	C70	31.4	444	41.1	As above
36	Amb.	Cs137	3029	1.12	1.08	2.5	3.96	1100	1001	31.4	445	41.1	As above
37	Amb.	Cs137	3030	1.12	1.08	2.5	3.96	1200	1010	31.4	445	41.1	As above
38	Amb.	Cs137	3031	1.12	1.08	2.5	3.96	11a0	1003	31.4	445	41.1	As above

3. Permanent Archive Directory

3.1 The CDROM Archive

CDROM#	Run ID	Measurement Date	Measurement Star Time	Measurement Stop Time	Total number of events	Total size (bytes)	Packet Type
0075	2952	2000-04-28	16:40:48	17:14:45	1622390	39402192	T10.3a
0075	2953	2000-04-28	17:23:02	17:55:45	10641210	258075464	T10.3a
0075	2954	2000-04-28	17:58:50	18:14:21	4295528	104210692	T10.3a
0075	2965	2000-05-02	17:19:01	17:49:18	1305996	31729256	T10.3a
0076	2966	2000-05-02	17:52:11	18:22:30	9127954	221281216	T10.3a
0076	2967	2000-05-02	18:23:44	18:54:18	7728648	187380824	T10.3a
0076	2973	2000-05-03	14:08:31	15:53:39	5149422	125021004	T10.3a
0076	2974	2000-05-03	15:56:57	17:02:20	2571916	62484556	T10.3a
0077	2975	2000-05-03	17:06:13	17:36:39	8168022	197891056	T10.3a
0077	2976	2000-05-03	17:38:00	18:07:57	1166676	28352656	T10.3a
0077	2980	2000-05-04	09:38:24	10:08:22	1313564	31910892	T10.3a
0077	2983	2000-05-05	09:44:33	10:30:16	594948	14460316	T10.3a
0077	2986	2000-05-05	10:34:55	11:19:56	998976	24275368	T10.3a
0077	2988	2000-05-05	11:30:14	12:00:25	7224258	175161724	T10.3a
0078	2989	2000-05-05	12:08:17	12:38:34	8493446	205908988	T10.3a
0078	2996	2000-05-02	19:00:32	19:30:30	1183360	28758672	T10.3a
0078	2998	2000-05-03	01:29:42	01:59:39	1247172	30299248	T10.3a
0078	3001	2000-05-03	18:50:12	19:20:09	1365250	33162988	T10.3a
0078	3002	2000-05-03	19:23:16	19:53:14	9290064	225214616	T10.3a
0079	3003	2000-05-03	19:54:09	20:24:09	9289978	225211736	T10.3a
0079	3010	2000-05-04	20:43:06	21:13:04	3192148	77406032	T10.3a
0079	3012	2000-05-04	21:23:41	21:53:38	1435082	34855440	T10.3a
0079	3013	2000-05-04	21:54:30	22:24:29	9551160	231666100	T10.3a
0080	3014	2000-05-04	22:25:30	22:44:21	6036856	146448408	T10.3a
0080	3016	2000-05-04	23:40:02	00:10:48	9860158	239154248	T10.3a
0081	3017	2000-05-05	00:11:02	00:44:20	10641210	258075464	T10.3a
0081	3027	2000-05-05	20:30:54	21:05:51	1766698	42895500	T10.3a
0081	3028	2000-05-05	21:07:11	21:37:10	7663632	185805808	T10.3a
0082	3029	2000-05-05	21:38:05	22:08:04	9551074	231666172	T10.3a
0082	3030	2000-05-05	22:09:05	22:39:05	9566468	231913852	T10.3a

3.2 The MO Archive

MO #	Run ID	Measurement Date	Measurement Star Time	Measurement Stop Time	Total number of events	Total size (bytes)	Packet Type
0019	2952	2000-04-28	16:40:48	17:14:45	1622390	39402192	T10.3a
0019	2953	2000-04-28	17:23:02	17:55:45	10641210	258075464	T10.3a
0019	2954	2000-04-28	17:58:50	18:14:21	4295528	104210692	T10.3a
0019	2965	2000-05-02	17:19:01	17:49:18	1305996	31729256	T10.3a
0019	2966	2000-05-02	17:52:11	18:22:30	9127954	221281216	T10.3a
0019	2967	2000-05-02	18:23:44	18:54:18	7728648	187380824	T10.3a
0019	2973	2000-05-03	14:08:31	15:53:39	5149422	125021004	T10.3a
0019	2974	2000-05-03	15:56:57	17:02:20	2571916	62484556	T10.3a
0020	2975	2000-05-03	17:06:13	17:36:39	8168022	197891056	T10.3a
0020	2976	2000-05-03	17:38:00	18:07:57	1166676	28352656	T10.3a
0020	2980	2000-05-04	09:38:24	10:08:22	1313564	31910892	T10.3a
0020	2983	2000-05-05	09:44:33	10:30:16	594948	14460316	T10.3a
0020	2986	2000-05-05	10:34:55	11:19:56	998976	24275368	T10.3a
0020	2988	2000-05-05	11:30:14	12:00:25	7224258	175161724	T10.3a
0020	2989	2000-05-05	12:08:17	12:38:34	8493446	205908988	T10.3a
0020	2996	2000-05-02	19:00:32	19:30:30	1183360	28758672	T10.3a
0020	2998	2000-05-03	01:29:42	01:59:39	1247172	30299248	T10.3a
0020	3001	2000-05-03	18:50:12	19:20:09	1365250	33162988	T10.3a
0020	3002	2000-05-03	19:23:16	19:53:14	9290064	225214616	T10.3a
0021	3003	2000-05-03	19:54:09	20:24:09	9289978	225211736	T10.3a
0021	3010	2000-05-04	20:43:06	21:13:04	3192148	77406032	T10.3a
0021	3012	2000-05-04	21:23:41	21:53:38	1435082	34855440	T10.3a
0021	3013	2000-05-04	21:54:30	22:24:29	9551160	231666100	T10.3a
0021	3014	2000-05-04	22:25:30	22:44:21	6036856	146448408	T10.3a
0021	3016	2000-05-04	23:40:02	00:10:48	9860158	239154248	T10.3a
0022	3017	2000-05-05	00:11:02	00:44:20	10641210	258075464	T10.3a
0022	3027	2000-05-05	20:30:54	21:05:51	1766698	42895500	T10.3a
0022	3028	2000-05-05	21:07:11	21:37:10	7663632	185805808	T10.3a
0022	3029	2000-05-05	21:38:05	22:08:04	9551074	231666172	T10.3a
0022	3030	2000-05-05	22:09:05	22:39:05	9566468	231913852	T10.3a

3.3 The MO Archive Backup

MO Cartridge #	DAT Tape #	DAT Tape File
19	1	1
20	1	2
21	2	1
22	2	2