I. DATASHEETS

Datasheet in steps	Event description	atlasPartsId	Mandatory(*) (at least initially)	Reference document
1. Components				
1.1 Baseboards	BASEBOARD	<label on baseboard>	*	SCT-BM-FDR-5.2
1.2 Passive-component-loaded Hybrids	PC_HYBRID	<label on hybrid>	*	SCT-BM-FDR-5.3
2. Module assembly and dates tested				
2.1 Sensor-baseboard assembly	SENSOR_B ASEBOARD	<label on baseboard>	*	SCT-BM-FDR-7
2.2 ASIC-hybrid assembly	ASIC_HYBRID	<label on hybrid>	*	SCT-BM-FDR-7
2.3 Module assembly	MODULE	<label on hybrid>	*	SCT-BM-FDR-7
3. Testings				
3.1 Sensor-baseboard unit				
3.1.1 I-V measurement	I_V-SENSOR_BASEBOARD	<label on baseboard>	*	SCT-BM-FDR-7
3.1.2 I stability	I_STABILITY-SENSOR_BASEBOARD	<label on baseboard>		SCT-BM-FDR-7
3.1.3 Metrology	SURVEY_XY-SENSOR_BASEBOARD	<label on baseboard>	*	SCT-BM-FDR-7
	SURVEY_Z-SENSOR_BASEBOARD	<label on baseboard>	*	SCT-BM-FDR-7
3.2 ASIC-hybrid unit				
3.2.1 Initial assembly				
3.2.1.1 Electrical performance	ELECTRICAL-INITIAL-ASIC_HYBRID	<label on hybrid>	*	Electrical Tests of SCT Hybrids and Modules, Version 3.01,
3.2.2 Long-term test				
3.2.2.1 Measurement during test	LONGTERM-ASIC_HYBRID	<label on hybrid>	*	SCT-BM-FDR-7
3.2.2.2 Electrical performance	ELECTRICAL-LT-ASIC_HYBRID	<label on hybrid>	*	Electrical Tests of SCT Hybrids and Modules, Version 3.01,
3.3 Module unit				
3.3.1 Initial assembly				
3.3.1.1 Metrology	SURVEY_XY-INITIAL	<label on hybrid>	*	SCT-BM-FDR-7
	SURVEY_Z-INITIAL	<label on hybrid>	*	SCT-BM-FDR-7
3.3.1.2 I_V measurement	I_V-INITIAL	<label on hybrid>	*	SCT-BM-FDR-7
3.3.1.3 Electrical performance	ELECTRICAL-INITIAL	<label on hybrid>	*	Electrical Tests of SCT Hybrids and Modules, Version 3.01,
3.3.2 Thermal cycling				
3.3.2.1 Metrology	SURVEY_XY-TC	<label on hybrid>		SCT-BM-FDR-7
	SURVEY_Z-TC	<label on hybrid>		SCT-BM-FDR-7
3.3.2.2 I_V measurement	I_V-TC	<label on hybrid>		SCT-BM-FDR-7
3.3.2.3 Electrical performance	ELECTRICAL-TC	<label on hybrid>		Electrical Tests of SCT Hybrids and Modules, Version 3.01,
3.3.3 Long-term test				
3.3.3.1 Measurement during test	LONGTERM-MODULE	<label on hybrid>	*	SCT-BM-FDR-7
3.3.3.2 I stability durring test	I_STABILITY-LT	<label on hybrid>	*	SCT-BM-FDR-7

3.3.3.3 Metrology	SURVEY_XY-LT	<label on hybrid>	*	SCT-BM-FDR-7
	SURVEY_Z-LT	<label on hybrid>	*	SCT-BM-FDR-7
3.3.3.3 I_V measurement	I_V-LT	<label on hybrid>	*	SCT-BM-FDR-7
3.3.3.5 Electrical performance	ELECTRICAL-LT	<label on hybrid>	*	Electrical Tests of SCT Hybrids and Modules, Version 3.01,
3.3.4 Irradiation				(This is just afer the irradiation)
3.3.4.1 I_V measurement	I_V-IRRAD	<label on hybrid>		SCT-BM-FDR-7
3.3.4.2 I_STABILITY	I_STABILITY_IRRAD	<label on hybrid>		
3.3.4.3 Electrical performance	ELECTRICAL-IRRAD	<label on hybrid>		Electrical Tests of SCT Hybrids and Modules, Version 3.01,
3.3.5 Irradiation annealled				(This is afer the annealing)
3.3.3.2 I_V measurement	I_V-ANNEAL	<label on hybrid>		SCT-BM-FDR-7
3.3.3.3 I stability	I_STABILITY-ANNEAL	<label on hybrid>		SCT-BM-FDR-7
3.3.5.1 Electrical performance	ELECTRICAL-ANNEAL	<label on hybrid>		Electrical Tests of SCT Hybrids and Modules, Version 3.01,
3.3.6 Laser scan				
3.3.6.1 Electrical performance	LASER	<label on hybrid>		TBD
3.3.7 Source scan				
3.3.7.1 Electrical performance	SOURCE	<label on hybrid>		TBD
3.3.8 Testbeam				
3.3.8.1 Electrical performance	ELECTRICAL-TB	<label on hybrid>		Electrical Tests of SCT Hybrids and Modules, Version 3.01,
3.3.9 System test				
3.3.9.1 Electrical performance	ELECTRICAL-ST	<label on hybrid>		Electrical Tests of SCT Hybrids and Modules, Version 3.01,
4. Module summary	MODULE-SUMMARY	<label on hybrid>		

II. OTHERS

1. "location"

Location is proposed to be specified with the numeric "Institute code(num)" typed in three characters, e.g., 033 (for RAL).
This code must be strictly defined because we may want to sort the data with "location" in later usage.
ATLAS has defined the "institute code(xxx)" in numeric and mnemonic.
SCTDB also defines both numeric and alphabetic abbreviation where the numeric is the same as the ATLAS while the alphabetic happens to be different.
Numeric has little chance to make different abbreviation as seen in the alphabetic abbreviation.

2. ELECTRICAL tests

The content of the ELECTRICAL tests is the output generated automatically by the SCTDAQ program.
The sheet of ELECTRICAL shows concisely what is in the output.

3. Database uploading sheets

We prepare/fill the datasheets given in this excel file.
The sheets are meant to be simple and straight-forward, to be easy to fill.
One may regard these as REPORT, which indeed helps us in two aspects:
(1) we have already had the REPORT from the database
(2) the sheets help us to analyze the data by our own point of view

The database uploading programme may require a more structured and database-protocol-filled datasheet.
Such formatting is straight-forward from the datasheets we prepare and fill here, and
automatic once the (formatting) excel file/sheet is ready.

Which datasheets to choose?

A proposal is
(1) fill and keep the datasheets of this excel file(as the first object)
(2) a formatting excel file/sheet is to be made, in collaboration with the database manager, (and append to this file?)
so that a grand database-protocoled datasheet is automatically generated
(3) individual sheet is also made possible to be uploaded, as needed

4. Sensor leakage current

The RAWDATA of the sensor leakage current are stored as measured, together with the temperature.
Sensor leakage current has a large temperature dependence.
Comparison is to be made at the temperature of 20 deg.C by using the temperature dependence equation of

I(20[C])=I(T[C])*(293/(273+T[C])^1.5*exp(-7019*(1/293-1/(273+T[C]))

where E_g=1.21 eV is used to obtain the coefficient, 7019.

Serial Number	<atlas parts id>	
Manufacturer serial number	<data>	
Event description	BASEBOARD	
Event date (dd/mm/yyyy)	<data>	
Location(instituteCode(num))	<data>	
Person initials	<data>	
Problem (Yes/No)	<data>	
Pass (Yes/No)	<data>	
Comments	<data>	
Baseboard Class Number	<data>	: AlO3/TPG+AlO3/TPG+BeO
TPG Sheet Serial Number	<data>	: Serial Number of TPG substray
Orientation	<data>	: 0, 90, 180, 270 deg
X1	<data>	
X2	<data>	
BeO Facing1 Lot Number	<data>	
BeO Facing2 Lot Number	<data>	
BeO Facing3 Lot Number	<data>	
BeO Facing4 Lot Number	<data>	
Jig Number	<data>	: Jig number which is used in the prodcution.
Template Type	<data>	: Template type which is uesd in production
Visual inspection	<data.	
Thickness 1	<data>	
Thickness 2	<data>	
Thickness 3	<data>	
Thickness 4	<data>	
Thickness 5	<data>	
Thickness 6	<data>	
Thickness 7	<data>	
Thickness 8	<data>	
Flatness (yes/no)	<data>	
Electrical conductivity (yes/no)	<data>	
Thermal QA(done/not done)	<data>	

atlasPartsId	<atlas parts id>	
manufacturerSerialNo	<data>	
eventDescription	PC_HYBRID	
date [dd/mm/yyyy]	<data>	
location [insttitueCode(num)]	<data>	
personInitial	<data>	
problem [YES/NO]	<data>	
pass [YES/NO]	<data>	
comments	<data>	
C1~C28 capacitors/batch	<atlas parts id>	
C51~C58 capacitors/batch	<atlas parts id>	
C71~C75 HV capacitors/batch	<atlas parts id>	
R27~R30 resitors/batch	<atlas parts id>	
R33~R34 resitors/batch	<atlas parts id>	
R35 resitors/batch	<atlas parts id>	
R36 resitors/batch	<atlas parts id>	
TM1~TM2 thermisters/batch	<atlas parts id>	
CON connector/batch	<atlas parts id>	
PA pitch adaptors/batch	<atlas parts id>	
CC carbon-carbon bridges/batch	<atlas parts id>	
Conductive epoxy/batch	<atlas parts id>	
Thermal epoxy/batch	<atlas parts id>	
Attaching CCbridges to flex circuit/batch	<atlas parts id>	
Stuffing passive components/batch	<atlas parts id>	
FLEX_CIRCUIT visual inspection	<data>	
Integrity test of lines	<data>	
BRIDGE visual inspection	<data>	
Thickness Link0 (<650)	<data>	
Thickness Link1 (<650)	<data>	
Bow (long) Link0 (< 75)	<data>	
Bow (long) Link1 (< 75)	<data>	
Bow (across) Link0 (< 75)	<data>	
Bow (across) Link1 (< 75)	<data>	
Twist Link0 (<100)	<data>	
Twist Link1 (<100)	<data>	
PASSIVE_COMPO visual inspection	<data>	
number of Wirebond-Pull	<data>	
Wire-bond pull strength (>6.0gr)	<data>	
Wire-bond pull max-min [gr]	<data>	
Wire-bond pull min [gr]	<data>	
PITCH_ADAPTOR visual inspection	<data>	
Capacitance Vcc-GND (microF) at 1KHz (4.0<X<4.8)	<data>	
Capacitance Vdd-GND (microF) at 1KHz (4.0<X<4.8)	<data>	
Impedance HV-GND (kOhm) at 100Hz (30<X< 36)	<data>	
Impedance HV-GND (kOhm) at 1KHz (9<X< 11)	<data>	
Impedance HV-GND (kOhm) at 10KHz (5.7<X<7.7)	<data>	
Impedance HV-GND (kOhm) at 100KHz (5.0<X<7.1)	<data>	
TC loTemperature [C]	<data>	-30

TC hiTemperature [C]	<data>	+50
TC repetition	<data>	5
TC visual inspection	<data>	
Thickness Link0 (<650)	<data>	
Thickness Link1 (<650)	<data>	
Bow (long) Link0 (< 75)	<data>	
Bow (long) Link1 (< 75)	<data>	
Bow (across) Link0 (< 75)	<data>	
Bow (across) Link1 (< 75)	<data>	
Twist Link0 (<100)	<data>	
Twist Link1 (<100)	<data>	
Capacitance Vcc-GND (microF) at 1KHz (4.0<X<4.8)	<data>	
Capacitance Vdd-GND (microF) at 1KHz (4.0<X<4.8)	<data>	
Impedance HV-GND (kOhm) at 100Hz (30<X< 36)	<data>	
Impedance HV-GND (kOhm) at 1KHz (9<X< 11)	<data>	
Impedance HV-GND (kOhm) at 10KHz (5.7<X<7.7)	<data>	
Impedance HV-GND (kOhm) at 100KHz (5.0<X<7.1)	<data>	
Resistance R27 (Ohm) (99<X<101)	<data>	
Resistance R28 (Ohm) (99<X<101)	<data>	
Resistance R29 (Ohm) (99<X<101)	<data>	
Resistance R30 (Ohm) (99<X<101)	<data>	
Resistance TM1 (kOhm) at 25 deg.C. (9.8<X<10.2)	<data>	
Resistance TM2 (kOhm) at 25 deg.C. (9.8<X<10.2)	<data>	
Resistance ASIC die pad No.1-No.6 (milliOhm) (X<4)	<data>	
Resistance ASIC die pad No.7-No.12 (milliOhm) (X<4)	<data>	
LV leakage current for Icc (nA) at 10V (X<10)	<data>	
LV leakage current for Idd (nA) at 10V (X<10)	<data>	
HV leakge current (nA) at 500V (X<10)	<data>	

atlasPartsId	<atlas parts id>	
manufacturerSerialNo	<data>	
eventDescription	ASIC_HYBRID	
dateAssembly [dd/mm/yyyy]	<dd/mm/yyyy>	
location [institueCode(num)]	<data>	
personInitial	<data>	
problem [YES/NO]	<data>	
pass [YES/NO]	<data>	
comments	<data>	
visualInspection	<data>	
number of Wirebond-Pull	<data>	
average [gr]	<data>	
max-min [gr]	<data>	
min [gr]	<data>	
typeASIC	ABCD3TA	
ASIC m00 [waferID-Xnn-Ynn]	<data>	
s01	<data>	
s02	<data>	
s03	<data>	
s04	<data>	
e05	<data>	
m08	<data>	
s09	<data>	
s10	<data>	
s11	<data>	
s12	<data>	
e13	<data>	
capCorrectionFactor m00	<data>	copy from ASIC datasheet
s01	<data>	copy from ASIC datasheet
s02	<data>	copy from ASIC datasheet
s03	<data>	copy from ASIC datasheet
s04	<data>	copy from ASIC datasheet
e05	<data>	copy from ASIC datasheet
m08	<data>	copy from ASIC datasheet
s09	<data>	copy from ASIC datasheet
s10	<data>	copy from ASIC datasheet
s11	<data>	copy from ASIC datasheet
s12	<data>	copy from ASIC datasheet
e13	<data>	copy from ASIC datasheet
JigID	<data>	
EOTITEP102	<atlas parts id>	
cureTemperature(xx) [C]	<data>	
cureDurationTime [hrs]	<data>	
dateWireBonding [dd/mm/yyyy]	<dd/mm/yyyy>	
location [institueCode(num)]	<data>	
nDefectiveChannels	<data.	number of defective channels
defectiveChannels	<data>	n1,n2,n3,...(separated with comma)
comment	<data>	

dateELECTRICAL-INITIAL-ASIC_HYBRID TEST	<dd/mm/yyyy>
dateLONGTERM-ASIC_HYBRID	<dd/mm/yyyy>
dateELECTRICAL-LT-ASIC_HYBRID	<dd/mm/yyyy>

atlasPartsId	<atlas parts id>	
manufacturerSerialNo	<data>	
eventDescription	SENSOR_BASEBOARD	
dateEntry [dd/mm/yyyy]	<dd/mm/yyyy>	
location [institueCode(num)]	<data>	
personInitial	<data>	
problem [YES/NO]	<data>	
pass [YES/NO]	<data>	
comments	<data>	
SENSORLeftUpper	<atlas parts id>	
SENSORRightUpper	<atlas parts id>	
SENSORLeftLower	<atlas parts id>	
SENSORRightLower	<atlas parts id>	
biasVoltage [V]	350	: copy from detector datasheet
temperature(xx.x) [C]	<data>	: copy from detector datasheet
leakCurrentLeftUpper [mircoA]	<data>	: copy from detector datasheet
leakCurrentRightUpper [microA]	<data>	: copy from detector datasheet
leakCurrentLeftLower [microA]	<data>	: copy from detector datasheet
leakCurrentRightLower [microA]	<data>	: copy from detector datasheet
leakCurrentSum [microA]	<data>	: copy from detector datasheet
nDefectiveStrips	<data>	: copy from detector datasheet, inclusiveof four sensors
defectiveStrips	<data>	: copy from detector datasheet(n1,n2,n3,... (separated with comma))
BASEBOARD	<atlas parts id>	
dateAssemblySide1 [dd/mm/yyyy]	<dd/mm/yyyy>	
AssemblyJigID	<data>	
EOTITEP102	<atlas parts id>	
ARALDITE2011	<atlas parts id>	
BN FILLER	<atlas parts id>	
assemblyTemperature(xx.x) [C]	<data>	
cureTemperature(xx) [C]	<data>	
cureDurationTime [hrs]	<data>	
dateAssemblySide2 [dd/mm/yyyy]	<dd/mm/yyyy>	
AssemblyJigID	<data>	
EOTITEP102	<atlas parts id>	
ARALDITE2011	<atlas parts id>	
BN FILLER	<atlas parts id>	
assemblyTemperature(xx.x) [C]	<data>	
cureTemperature(xx) [C]	<data>	
cureDurationTime [hrs]	<data>	
dateI_V-SENSOR_BASEBOARD TEST	<dd/mm/yyyy>	
dateI_STABILITY-SENSOR_BASEBOARD TEST	<dd/mm/yyyy>	
dateSURVEY_XY-SENSOR_BASEBOARD	<dd/mm/yyyy>	
dateSURVEY_Z-SENSOR_BASEBOARD	<dd/mm/yyyy>	

atlasPartsId	<atlas parts id>	
manufacturerSerialNo	<data>	
eventDescription	MODULE	
dateEntry [dd/mm/yyyy]	<dd/mm/yyyy>	
location [institueCode(num)]	<data>	
personInitial	<data>	
problem [YES/NO]	<data>	
pass [YES/NO]	<data>	
comments	<data>	
SENSOR_BASEBOARD	<atlas parts id>	
ASIC_HYBRID	<atlas parts id>	
dateAssemblySide1 [dd/mm/yyyy]	<dd/mm/yyyy>	
location [institueCode(num)]	<data>	
personInitial	<data>	
assemblyJigID	<data>	
ARALDITE2011	<atlas parts id>	
BN FILLER	<atlas parts id>	
assemblyTemperature(xx.x) [C]	<data>	
cureTemperature(xx) [C]	<data>	
cureDurationTime [hrs]	<data>	
dateAssemblySide2 [dd/mm/yyyy]	<dd/mm/yyyy>	
location [institueCode(num)]	<data>	
personInitial	<data>	
assemblyJigID	<data>	
ARALDITE2011	<atlas parts id>	
BN FILLER	<atlas parts id>	
assemblyTemperature(xx.x) [C]	<data>	
cureTemperature(xx) [C]	<data>	
cureDurationTime [hrs]	<data>	
dateWireBonding [dd/mm/yyyy]	<dd/mm/yyyy>	
location [institueCode(num)]	<data>	
nDefectiveChannels	<data>	number of defective channels
defectiveChannels	<data>	n1,n2,n3,... (separated by comma)
comment	<data>	
dateSURVEY_XY-INITIAL	<dd/mm/yyyy>	
dateSURVEY_Z-INITIAL	<dd/mm/yyyy>	
dateI_V-INITIAL	<dd/mm/yyyy>	
dateELECTRICAL-INITIAL	<dd/mm/yyyy>	
dateTHERMALCYCLE	<dd/mm/yyyy>	
loTemperature [C]	-30	
hiTemperature [C]	+50	
numberRepetition	10	
dateSURVEY_XY-TC	<dd/mm/yyyy>	
dateSURVEY_Z-TC	<dd/mm/yyyy>	
dateI_V-TC	<dd/mm/yyyy>	
dateELECTRICAL-TC	<dd/mm/yyyy>	
dateLONGTERM_MODULE	<dd/mm/yyyy>	
dateI_STABILITY-LT	<dd/mm/yyyy>	

dateSURVEY_XY-LT	<dd/mm/yyyy>
dateSURVEY_Z-LT	<dd/mm/yyyy>
dateI_V-LT	<dd/mm/yyyy>
dateELECTRICAL-LT	<dd/mm/yyyy>
dateIRRAD	<dd/mm/yyyy>
dateANNEAL	<dd/mm/yyyy>
dateLASER	<dd/mm/yyyy>
dateSOURCE	<dd/mm/yyyy>

atlasPartsId	<atlas parts id>	
eventDescription	LONGTERM-X	: X=ASIC_HYBRID, MODULE
dateEntry [dd/mm/yyyy]	<dd/mm/yyyy>	
location [institueCode(xxx)]	<data>	
personInitial	<data>	
problem [YES/NO]	<data>	
pass [YES/NO]	<data>	
comments	<data>	
dateStart [dd/mm/yyyy]	<dd/mm/yyyy>	
Long term test length (hours)	<data>	
Long term test maximum T1(xx.x) (C)	<data>	
Long term test minimum T1(xx.x) (C)	<data>	
Long term test maximum T2(xx.x) (C)	<data>	
Long term test minimum T2(xx.x) (C)	<data>	
Long term test maximum Icc (mA)	<data>	
Long term test minimum Icc (mA)	<data>	
Long term test maximum Idd (mA)	<data>	
Long term test minimum Idd (mA)	<data>	
Long term test time of first failure	<data>	
Long term test failed ASICs	<data>	chip1,chip2,... (separated with comma)
T1 RAWDATA	t [hrs], T(xx.x) [C]	
<t>	<T1>	every 1hr
<t>	<T1>	
		blank line to indicate END
T2 RAWDATA	t [hrs], T(xx.x) [C]	
<t>	<T2>	every 1hr
<t>	<T2>	
		blank line to indicate END
Icc RAWDATA	t [hrs], Icc [mA]	
<t>	<Icc>	every 1hr
<t>	<Icc>	
		blank line to indicate END
Idd RAWDATA	t [hrs], Idd [mA]	
<t>	<Idd>	every 1hr
<t>	<Idd>	
		blank line to indicate END

atlasPartsId	<atlas parts id>	
eventDescription	I_V-X	X: SENSOR_BASEBOARD, INITIAL, TC, LT, ANNEAL, ...
dateEntry [dd/mm/yyyy]	<dd/mm/yyyy>	
location [institueCode(xxx)]	<data>	
personInitial	<data>	
problem [YES/NO]	<data>	
pass [YES/NO]	<data>	
comments	<data>	
temperature(xx.x) [C]	<data>	
moduleI_150V [microA]	<data>	
moduleI_350V [microA]	<data>	
moduleI_500V [microA]	<data>	
temperature(xx.x) [C]	<data>	
LeftUpperI_150V [microA]	<data>	: optional
LeftUpperI_350V [microA]	<data>	
LeftUpperI_500V [microA]	<data>	
temperature(xx.x) [C]	<data>	
RightUpperI_150V [microA]	<data>	: optional
RightUpperI_350V [microA]	<data>	
RightUpperI_500V [microA]	<data>	
temperature(xx.x) [C]	<data>	
LeftLowerI_150V [microA]	<data>	: optional
LeftLowerI_350V [microA]	<data>	
LeftLowerI_500V [microA]	<data>	
temperature(xx.x) [C]	<data>	
RightLowerI_150V [microA]	<data>	: optional
RightLowerI_350V [microA]	<data>	
RightLowerI_500V [microA]	<data>	
moduleRAW DATA	bias [V], I [microA]	: step of 10V
<bias>	<current>	
<bias>	<current>	
		<blank line> for END
LeftUpperRAW DATA	bias [V], I [microA]	: optional
<bias>	<current>	
<bias>	<current>	
		<blank line> for END
RightUpperRAW DATA	bias [V], I [microA]	: optional
<bias>	<current>	
<bias>	<current>	
		<blank line> for END
LeftLowerRAW DATA	bias [V], I [microA]	: optional
<bias>	<current>	
<bias>	<current>	
		<blank line> for END
RightLowerRAW DATA	bias [V], I [microA]	: optional
<bias>	<current>	
<bias>	<current>	
		<blank line> for END

atlasPartsId	<atlas parts id>	
eventDescription	I_STABILITY-X	: X=LT
dateEntry [dd/mm/yyyy]	<dd/mm/yyyy>	
location [institueCode(num)]	<data>	
personInitial	<data>	
problem [YES/NO]	<data>	
pass [YES/NO]	<data>	
comments	<data>	
biasVoltage [V]	350	
maxCurrent(20C) [microA]	<data>	Current (after stabilized) corrected to 20degC
minCurrent(20C) [microA]	<data>	Current (after stabilized) corrected to 20degC
deltaCurrent(20C) [microA]	<data>	(max - min) corrected to 20degC
moduleRAW DATA	t [hrs], I [microA], T [C]	every 1hr
<t>	<current>	<temp(xx.x)>
<t>	<current>	<temp(xx.x)>
<t>	<current>	<temp(xx.x)>
		blank line for END

atlasPartsId	<atlas parts id>
eventDescription	SURVEY_XY-X : X=INITIAL, TC, LT, ...
date [dd/mm/yyyy]	<dd/mm/yyyy>
location [institueCode(num)]	<data>
personInitials	<data>
problem [YES/NO]	<data>
pass [YES/NO]	<data>
comments	<data>
temperature(xx.x) [C]	<data>
measurementJigID	<data>
mhx [um]	<data>
mhy [um]	<data>
msx [um]	<data>
msy [um]	<data>
sepf [um]	<data>
sepb [um]	<data>
midxf [um]	<data>
midyf [um]	<data>
a1 [mrad]	<data>
a2 [mrad]	<data>
a3 [mrad]	<data>
a4 [mrad]	<data>
stereo [mrad]	<data>
hymxf [um]	<data>
hymyf [um]	<data>
hymaf [mrad]	<data>
hymxb [um]	<data>
hymyb [um]	<data>
hymab [mrad]	<data>
conp1x [um]	<data>
conp1y [um]	<data>

atlasPartsId	<atlas parts id>
eventDescription	SURVEY_Z-X : X=INITIAL, TC, LT, ...
date [dd/mm/yyy]	<dd/mm/yyyy>
location [institueCode(num)]	<data>
personInitial	<data>
problem [YES/NO]	<data>
pass [YES/NO]	<data>
comments	<data>
temperature(xx.x) [C]	<data>
measurementJigID	<data>
maxZlower [mm]	<data>
maxZupper [mm]	<data>
midplaneEq	z=ax+by+c
Left a	<data>
b	<data>
c	<data>
Right a	<data>
b	<data>
c	<data>
midplaneHeight [mm]	<data>
moduleThickness [mm]	<data>
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optimalmaxZupper [mm]	<data>
optimalrmsZlower [mm]	<data>
optimalrmsZupper [mm]	<data>
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21	<data>
22	<data>

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rightLower	x
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22	<data>
23	<data>
24	<data>
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leftUpper	x
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2	<data>
3	<data>
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rightUpper	x
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leftLower	y
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rightUpper	y
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rightLower	z
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leftUpper	z
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rightUpper	z
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25 <data>

atlasPartsId	<atlas parts id>	
eventDescription	ELECTRICAL-X	: X=INITIAL, TC, LT, ANNEAL, ...
date [dd/mm/yyyy]	<dd/mm/yyyy>	
location [institueCode(num)]	<data>	
personInitial	<data>	
problem [YES/NO]	<data>	
pass [YES/NO]	<data>	
comments	<data>	

Reference document http://hepwww.rl.ac.uk/atlas-sct/documents/dev/Electrical_Tests_301.doc
N.B. Some revisions have been incorporated here, but not yet in the reference,
namely that CONFIGURATION will be stored as an ASCII file and
and that the RUN field will be used to store both RUN and SCAN number.

The following test is applicable only to **bmModule** objects:

TEST_NAME	M	**IVCurve**		
TEST_DATE	M	**dd/mm/yyyy**		
LOCN_NAME	M	**aa**		
INITLS	M	**bb**		
PASS	M	**YES**		
PROBLEM	M	**NO**		
RUN	M	**<data>**		
TEST_TIME	O	Time		Time the test started
HOST	O	Char(30)		Hostname of test PC
TIME_POWERED	O	Float	0 _ inf.	(hours)
T0	O	Float	-100 to 200	Module Temp. 0 (C)
T1	O	Float	-100 to 200	Module Temp. 1 (O)
CONFIGURATION	O	RAW DATA		Tbc.
I_LEAK_150	M	Float	0 to 5200	Leakage Current (microA)
I_LEAK_350	O	Float	0 to 5200	Leakage Current (microA)
I_LEAK_500	O	Float	0 to 5200	Leakage Current (microA)
IV_DATA	O	RAW DATA		IV Curve

Defects associated with this test:

Defect	Channel	Value	
IV_LIMIT	V (V)	I(microA)	# current limit reached
IV_TRIP	V (V)	I(microA)	# current trip: test void

The following tests are applicable to **bmHybridK5** and **bmModule** objects:

TEST_NAME	M	**HardReset**
TEST_DATE	M	**dd/mm/yyyy**
LOCN_NAME	M	**aa**
INITLS	M	**bb**

PASS	M	**YES**		
PROBLEM	M	**NO**		
RUN	M	**<data>**		
TEST_TIME	O	Time		Time the test started
HOST	O	Char(30)		Hostname of test PC
TIME_POWERED	O	Float	0 _ inf.	(hours)
T0	O	Float	-100 to 200	Module Temp. 0 (C)
T1	O	Float	-100 to 200	Module Temp. 1 (O)
CONFIGURATION	O	RAW DATA		**ASCII FILE**
ICC_NOCONFIG	M	Float	0 to 2000	Analogue Current (mA)
IDD_NOCONFIG	M	Float	0 to 2000	Digital Current (mA)
ICC	M	Float	0 to 2000	Analogue Current (mA)
IDD	M	Float	0 to 2000	Digital Current (mA)
ICC_NOCLOCK	M	Float	0 to 2000	Analogue Current (mA)
IDD_NOCLOCK	M	Float	0 to 2000	Digital Current (mA)

Defects associated with this test:

Defect	Channel	
HR_NOCLK	LINK	# no clock received
HR_NOCON	LINK	# no command signal received
HR_NORST	LINK	# no reset signal received

TEST_NAME	M	**RedundancyTest**		
TEST_DATE	M	**dd/mm/yyyy**		
LOCN_NAME	M	**aa**		
INITLS	M	**bb**		
PASS	M	**YES**		
PROBLEM	M	**NO**		
RUN	M	**<data>**		run and scan combined: **"R-S"**
TEST_TIME	O	Time		Time the test started
HOST	O	Char(30)		Hostname of test PC
TIME_POWERED	O	Float	0 to inf.	(hours)
T0	O	Float	-100 to 200	Module Temp. 0 (C)
T1	O	Float	-100 to 200	Module Temp. 1 (O)
CONFIGURATION	O	RAW DATA		**ASCII FILE**

Defect	Channel	
CLK_ADDR0	CHIP	# addressing error with clk/com0
CLK_ADDR1	CHIP	# addressing error with clk/com1
CLK_COM0	CHIP	# command reception error with clk/com0
CLK_COM1	CHIP	# command reception error with clk/com1
CLK_ERROR	CHIP	# other error (unspecified)

TEST_NAME	M	**BypassTest**		
TEST_DATE	M	**dd/mm/yyyy**		
LOCN_NAME	M	**aa**		
INITLS	M	**bb**		
PASS	M	**YES**		
PROBLEM	M	**NO**		
RUN	M	**<data>**		run and scan combined: **"R-S"**
TEST_TIME	O	Time		Time the test started
HOST	O	Char(30)		Hostname of test PC
TIME_POWERED	O	Float	0 to inf.	(hours)
T0	O	Float	-100 to 200	Module Temp. 0 (C)
T1	O	Float	-100 to 200	Module Temp. 1 (O)
CONFIGURATION	O	RAW DATA		**ASCII FILE**
M0-S1	M	Float	0 to 10 V	
M0-S2	M	Float	0 to 10 V	
S1-S2	M	Float	0 to 10 V	
S1-S3	M	Float	0 to 10 V	
S2-S3	M	Float	0 to 10 V	
S2-S4	M	Float	0 to 10 V	
S3-S4	M	Float	0 to 10 V	
S3-E5	M	Float	0 to 10 V	
S4-E5	M	Float	0 to 10 V	
S4-M8	O	Float	0 to 10 V	FORWARD ONLY
E5-M8	O	Float	0 to 10 V	FORWARD ONLY
E5-S9	M	Float	0 to 10 V	
M8-S9	M	Float	0 to 10 V	
M8-S10	M	Float	0 to 10 V	
S9-S10	M	Float	0 to 10 V	
S9-S11	M	Float	0 to 10 V	
S10-S11	M	Float	0 to 10 V	
S10-S12	M	Float	0 to 10 V	
S11-S12	M	Float	0 to 10 V	
S11-E13	M	Float	0 to 10 V	
S12-E13	M	Float	0 to 10 V	
S12-M0	O	Float	0 to 10 V	FORWARD ONLY
E13-M0	O	Float	0 to 10 V	FORWARD ONLY
E13-S1	M	Float	0 to 10 V	

Defects associated with this test:

Defect	Channel	Value	
BYPASS	BYPASS LINK	Vdd_min (V)	# failed bypass link

TEST_NAME	M	**PipelineTest**
TEST_DATE	M	**dd/mm/yyyy**
LOCN_NAME	M	**aa**
INITLS	M	**bb**

PASS	M	**YES**		
PROBLEM	M	**NO**		
RUN	M	**<data>**		run and scan combined: **"R-S"**
TEST_TIME	O	Time		Time the test started
HOST	O	Char(30)		Hostname of test PC
TIME_POWERED	O	Float	0 to inf.	(hours)
T0	O	Float	-100 to 200	Module Temp. 0 (C)
T1	O	Float	-100 to 200	Module Temp. 1 (O)
CONFIGURATION	O	RAW DATA		**ASCII FILE**
XX_GOOD	M	Unsigned Char	0 to 128	No. good channels
		Where XX ={00,01,02,03,04,05,06,07,08,09,10,11} **(one per chip)**		

Defects associated with this test:

Defect	Channel	Value	
DEADCELL	CHANNEL	(nBCOs%12)	# dead pipeline cell
STUCKCELL	CHANNEL	(nBCOs%12)	# stuck pipeline cell

TEST_NAME	M	**StrobeDelay**		
TEST_DATE	M	**dd/mm/yyyy**		
LOCN_NAME	M	**aa**		
INITLS	M	**bb**		
PASS	M	**YES**		
PROBLEM	M	**NO**		
RUN	M	**<data>**		run and scan combined: **"R-S"**
TEST_TIME	O	Time		Time the test started
HOST	O	Char(30)		Hostname of test PC
TIME_POWERED	O	Float	0 to inf.	(hours)
T0	O	Float	-100 to 200	Module Temp. 0 (C)
T1	O	Float	-100 to 200	Module Temp. 1 (O)
CONFIGURATION	O	RAW DATA		**ASCII FILE**
XX_DELAY	M	Char	-1 to 63	Optimum Strobe Delay
		Where XX ={00,01,02,03,04,05,06,07,08,09,10,11} **(one per chip)**		

Defects associated with this test:

Defect	Channel	Value	
SD_LO	CHIP	Strobe Delay	# strobe delay off range (too low)
SD_HI	CHIP	Strobe Delay	# strobe delay off range (too high)

TEST_NAME	M	**ResponseCurve**	**# Same format used to store**
TEST_DATE	M	**dd/mm/yyyy**	**# data from three point gain and**
LOCN_NAME	M	**aa**	**# response curve tests**
INITLS	M	**bb**	
PASS	M	**YES**	
PROBLEM	M	**NO**	

RUN	M	**<data>**		run and scan combined: **"R-S"**
TEST_TIME	O	Time		Time the test started
HOST	O	Char(30)		Hostname of test PC
TIME_POWERED	O	Float	0 to inf.	(hours)
T0	O	Float	-100 to 200	Module Temp. 0 (C)
T1	O	Float	-100 to 200	Module Temp. 1 (O)
CONFIGURATION	O	RAW DATA		**ASCII FILE**
N_SCANS	M	Char	0 to 16	Number of scans/charges
Q_CC	O	Float	0 to 16	Charge Values (fC)
		Where CC = {0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15}		
RC_FIT	M	Unsigned Char	0 to 255	Fit function type
XX_RC_P0	M	Float	-inf to inf	Fit parameter 0
XX_RC_P1	M	Float	-inf to inf	Fit parameter 1
XX_RC_P2	M	Float	-inf to inf	Fit parameter 2
XX_RC_MN_VT50	M	Float	0 to 640	Mean VT50 at 1fC (mV)
XX_RC_RMS_VT50	M	Float	0 to 30	RMS VT50 at 1fC (mV)
XX_RC_MN_GAIN	M	Float	0 to 100	Mean gain at 2fC(mV/fC)
XX_RC_RMS_GAIN	M	Float	0 to 30	RMS gain at 2fC (mV/fC)
XX_RC_MN_OFFSET	M	Float	-100 to 120	Extrapolated Offset(mV)
XX_RC_RMS_OFFSET	M	Float	0 to 30	RMS Ext. Offset(mV)
XX_RC_MN_NSE	M	Float	0 to 120	Mean output noise at 2fC (mV)
XX_RC_MN_ENC	M	Float	0 to 5000	Mean input noise at 2fC (ENC)
XX_RC_RMS_ENC	M	Float	0 to 1000	RMS input noise at 2fC (ENC)
		Where XX ={00,01,02,03,04,05,06,07,08,09,10,11} **(one per chip)**		

Defects associated with this test:

Defect	Condition	Default value of cut
DEAD	No output	-
STUCK	Continuous output	-
LO_GAIN	Gain < MIN_GAIN	0 (mV/fC)
HI_GAIN	Gain > MAX_GAIN	100 (mV/fC)
LO_OFFSET	Offset < MIN_OFFSET	-100 (mV)
HI_OFFSET	Offset > MAX_OFFSET	120 (mV)
UNBONDED	Noise < BONDED_NOISE	750 (ENC)
PARTBONDED	Noise < MIN_INNSE	1100 (ENC)
NOISY	Noise > (mean_nse + (3* rms_nse)	-
INEFFICIENT	Maximum efficiency <100%	(not yet implemented)

TEST_NAME	M	**TrimScan**	**# There will be five instances**
TEST_DATE	M	**dd/mm/yyyy**	**# of this table: one for each**
LOCN_NAME	M	**aa**	**# TrimRange and one using**
INITLS	M	**bb**	**# optimised TrimRange settings**
PASS	M	**YES**	
PROBLEM	M	**NO**	
RUN	M	**<data>**	run and scan combined: **"R-S"**

TEST_TIME	O	Time		Time the test started
HOST	O	Char(30)		Hostname of test PC
TIME_POWERED	O	Float	0 to inf.	(hours)
T0	O	Float	-100 to 200	Module Temp. 0 (C)
T1	O	Float	-100 to 200	Module Temp. 1 (O)
CONFIGURATION	O	RAW DATA		**ASCII FILE**
TRIM_TYPE	M	Char	-1 to 3	
TRIM_Q	M	Float	0 to 16	
N_SCANS	O	Char	0 to 16	Number of scans/TrimDAC settings
T_BB	O	Char	0 to 15	Trim DAC values
		Where BB = {0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15} **(one per DAC setting)**		
TR_ALGORITHM	M	Unsigned Char	0 to 255	Trim Algorithm
XX_TR_RANGE	M	Char	0 to 3	Trim Range Setting
XX_TR_TARGET	M	Float	0 to 640	Trim Target
XX_TR_NTRIM	M	Unsigned Char	0 to 128	Number of trimmable channels
XX_TR_MN_VT50	M	Float	0 to 640	Mean VT50 after trimming (mV)
XX_TR_RMS_VT50	M	Float	0 to 120	RMS VT50 after trimming (mV)
XX_TR_MN_STEP	M	Float	0 to 20	Mean TrimDAC step (mV)
XX_TR_RMS_STEP	M	Float	0 to 10	RMS TrimDAC step (mV)
XX_TR_MNOFFSET	M	Float	-120 to 120	Mean TrimDAC offset (mV)
XX_TR_RMSOFFSET	M	Float	0 to 10	RMS TrimDAC offset (mV)
		Where XX ={00,01,02,03,04,05,06,07,08,09,10,11} **(one per chip)**		
TRIM_FILE	M	RAW DATA		The module trim file comprising trim range information and the individual trim settings
MASK_FILE	M	RAW DATA		The module mask file listing the channels to be masked, and why

Defects associated with this test:

Defect	Description	Condition(s)
TR_RANGE	A chip for which the mean step size is not as expected for the presently selected TrimRange	TR0: step < 1.5 or step > 5.0 TR1: step < 5.0 or step > 8.5 TR2: step < 8.5 or step > 12.0 TR3: step < 12.0 or step > 15.5
TR_STEP	A channel for which the step size differs from the mean step size	Step < (mn_step - (3* rms_step)) Step > (mn_step + (3* rms_step))
TR_OFFSET	A channel for which the offset differs from the mean offset	Offset < (mn_offset - (3* rms_offset)) Offset > (mn_offset + (3* rms_offset))

TEST_NAME	M	**NoiseOccupancy**		rms	outnse	innse	rms	comment
TEST_DATE	M	**dd/mm/yyyy**		0	0	0	0	dead
LOCN_NAME	M	**aa**		0	0	0	0	dead
INITLS	M	**bb**		0	0	0	0	dead
PASS	M	**YES**		0	0	0	0	dead
PROBLEM	M	**NO**		6.02	14	1460	29	OK
RUN	M	**<data>**	run and scan combined: **"R-**	4.95	12.9	1336	32	OK
TEST_TIME	O	Time	Time the test started	7.6	13.68	1546	79	OK
HOST	O	Char(30)	Hostname of test PC	7.49	13.49	1528	40	OK
TIME_POWERED	O	Float	0 to inf. (hours)	7.67	13.71	1494	34	OK

T0	O	Float	-100 to 200	Module Temp. 0 (C)	7.36	12.93	1504	35	OK
T1	O	Float	-100 to 200	Module Temp. 1 (O)	7.77	13.31	1513	116	OK
CONFIGURATION	O	RAW DATA		Tbc.	6.29	13.59	1400	34	OK
ICC_MAX	M	Float	0 to 2000	Highest Icc (mA)					
IDD_MAX	M	Float	0 to 2000	Highest Idd (mA)					
ICC_TYP	M	Float	0 to 2000	Icc at 1fC (mA)					
IDD_TYP	M	Float	0 to 2000	Idd at 1fC (mA)					
XX_NO_OFFSET	M	Float	-100 to 120	Noise occupancy offset (mV)					
XX_NO_MN_OCC	M	Float	0 to 1	Mean Noise occupancy at 1fC					
XX_NO_RMS_OCC	M	Float	0 to 1	RMS Noise occupancy at 1fC					
XX_NO_NSE	M	Float	0 to 5000	Estimated noise (ENC)					

Where XX ={00,01,02,03,04,05,06,07,08,09,10,11} **(one per chip)**

Defects associated with this test:

Defect	Description	Condition(s)
NO_LO	A channel with low noise occ.	Occupancy < 1x10-7
NO_HI	A channel with high noise occ.	Occupancy > 5x10-4

TEST_NAME	M	**Timewalk**		
TEST_DATE	M	**dd/mm/yyyy**		
LOCN_NAME	M	**aa**		
INITLS	M	**bb**		
PASS	M	**YES**		
PROBLEM	M	**NO**		
RUN	M	**<data>**		run and scan combined: **"R-S"**
TEST_TIME	O	Time		Time the test started
HOST	O	Char(30)		Hostname of test PC
TIME_POWERED	O	Float	0 to inf.	(hours)
T0	O	Float	-100 to 200	Module Temp. 0 (C)
T1	O	Float	-100 to 200	Module Temp. 1 (O)
CONFIGURATION	O	RAW DATA		Tbc.
XX_TW	M	Float	0 to 25	Timewalk (nS)
XX_TCAL	M	Float	-1 to 63	Calibration factor

Where XX ={00,01,02,03,04,05,06,07,08,09,10,11} **(one per chip)**

Defects associated with this test:

Defect	Condition	Default value of cut
TW_LO	Timewalk < MIN_TW	5
TW_HI	Timewalk > MAX_TW	20

%T_07	7
%T_08	8
%T_09	9
%T_10	10
%T_11	11
%T_12	12
%T_13	13

%T_14	14
%T_15	15
%TRIM_ALGORITHM	0
#(trim whole module)	
#	
%TRIM_FILE	D:\sctvar\results\20220170100016_tr0_20010823.trim
%MASK_FILE	D:\sctvar\results\20220170100016_tr0_20010823.mask
#	
%TrimSummary	
#	

#	ran	target	ntrim	vt50	vt50rms	tr_off	tr_slope
Chip 0:	0	87.5	0	0	0	0	0
Chip 1:	0	87.5	0	0	0	0	0
Chip 2:	0	87.5	0	0	0	0	0
Chip 3:	0	87.5	0	0	0	0	0
Chip 4:	0	87.5	128	86.8	1.18	-20.2	3.33
Chip 5:	0	87.5	128	86.9	1.23	-19.1	3.62
Chip 6:	0	87.5	128	87.1	1.05	-19.6	3.47
Chip 7:	0	87.5	128	86.9	1.12	-19.3	3.48
Chip 8:	0	87.5	128	87.1	1.14	-22.6	2.99
Chip 9:	0	87.5	128	86.9	1.05	-19.1	3.24
Chip 10:	0	87.5	128	87.1	1.1	-20.4	3.27
Chip 11:	0	87.5	127	86.9	1.27	-19	3.79

%TEST_NAME	ResponseCurve
%TEST_DATE	##
%TEST_TIME	##
%LOCN_NAME	RAL R12
%INITLS	pwp
#	
%PASS	YES
%PROBLEM	NO
#	
%RUN	##
%SCAN	43
#	
%HOST	HEPNTW124
%T0	26 deg. C
%T1	27 deg. C
#	
#	
%N_SCANS	10
%Q_00	0.50 fC
%Q_01	0.75 fC
%Q_02	1.00 fC
%Q_03	1.25 fC
%Q_04	1.50 fC
%Q_05	2.00 fC

%Q_06	3.00 fC										
%Q_07	4.00 fC										
%Q_08	6.00 fC										
%Q_09	8.00 fC										
%RC_FIT	3 (exponential fit)										
#											
%ModuleResponseCurvePlot											
#	fun	p0	p1	p2							
Chip 0:	3	0.01	46.01	0							
Chip 1:	3	0.01	46.01	0							
Chip 2:	3	0.01	46.01	0							
Chip 3:	3	0.01	46.01	0							
Chip 4:	3	1571.96	6.63	-757.75							
Chip 5:	3	1572.4	6.71	-757.43							
Chip 6:	3	1676.52	7.59	-805.92							
Chip 7:	3	1613.51	7.35	-774.31							
Chip 8:	3	1659.59	7.37	-798.54							
Chip 9:	3	1802.85	8.44	-867.39							
Chip 10:	3	1716.86	7.78	-826.15							
Chip 11:	3	1637.46	6.78	-791.18							
#											
%ModuleGainOffsetNoise											
# at 2.00fC											
#	vt5	rms	gain	rms	offset	rms	outnse	innse	rms	comment	
Chip 0:	0	0	0	0	0	0	0	0	0	dead	
Chip 1:	0	0	0	0	0	0	0	0	0	dead	
Chip 2:	0	0	0	0	0	0	0	0	0	dead	
Chip 3:	0	0	0	0	0	0	0	0	0	dead	
Chip 4:	##	1.8	57.8	1.42	28.6	1.91	13.82	1494	34	OK	
Chip 5:	##	1.72	57.3	1.05	28.9	1.54	13.23	1443	35	OK	
Chip 6:	##	1.62	54.2	1.25	32.5	1.69	13.39	1545	76	OK	
Chip 7:	##	1.38	53.7	1.11	32.8	1.83	13.33	1553	40	OK	
Chip 8:	##	1.5	55.2	1.2	31.4	1.71	13.7	1550	34	OK	
Chip 9:	##	1.42	52.4	1.1	34.4	1.73	12.97	1546	30	OK	
Chip 10:	##	1.49	54	1.24	32.7	1.92	13.4	1551	120	OK	
Chip 11:	##	2.51	58.9	0.93	27.9	2.66	13.77	1463	37	OK	
#											
%ModuleBadChannelList											
# at 2.00fC											
#chan	coc	gain	offset	noise	comment						
#											
%DEFECTS											
#name	cha	value									
%DEAD	0										
#(channels 1-510 deleted)											
%DEAD	##										
%NOISY	##	1547.58									
%PARTBONDED	##	995.3									

%PARTBONDED ## 1020.57
%UNBONDED ## 636.83
%UNBONDED ## 647.31
#517 defects found

%TEST_NAME NoiseOccupancy
%TEST_DATE ##
%TEST_TIME ##
%LOCN_NAME RAL R12
%INITLS pwp
#
%PASS YES
%PROBLEM NO
#
%RUN ##
%SCAN 53
#
%HOST HEPNTW124
%T0 26 deg. C
%T1 27 deg. C
#
#
%IccMax: 795
%IddMax: 710
%IccTyp: 795
%IddTyp: 535
#
%NOSummary
#

#	Off	MeanOcc	RMSOcc	EstENC
Chip 0:	0	0.00E+00	0.00E+00	0
Chip 1:	0	0.00E+00	0.00E+00	0
Chip 2:	0	0.00E+00	0.00E+00	0
Chip 3:	0	0.00E+00	0.00E+00	0
Chip 4:	33	1.60E-05	8.60E-06	1407
Chip 5:	31	1.10E-06	1.20E-06	1291
Chip 6:	31	1.30E-05	5.60E-06	1458
Chip 7:	32	9.60E-06	6.40E-06	1430
Chip 8:	31	1.10E-05	5.40E-06	1420
Chip 9:	32	7.10E-06	3.70E-06	1412
Chip 10:	31	8.70E-06	5.00E-06	1416
Chip 11:	26	2.70E-06	3.50E-06	1343

#
%DEFECTS
#name chan
%NO_LO 0 0.00E+00
ed including channels 1 to 511)
%NO_LO ## 0.00E+00

```
      %NO_LO ## 0.00E+00
      %NO_LO ## 0.00E+00
#594 defects found

   %TEST_NAME Timewalk
    %TEST_DATE ##
    %TEST_TIME ##
  %LOCN_NAME RAL R12
      %INITLS pwp
            #
     %PASS  NO
  %PROBLEM NO
            #
       %RUN ##
      %SCAN 55
            #
      %HOST HEPNTW124
         %T0 26 deg. C
         %T1 27 deg. C
            #
      %00_TW 0
      %01_TW 0
      %02_TW 0
      %03_TW 0
      %04_TW 12
      %05_TW 11
      %06_TW 11
      %07_TW 12
      %08_TW 12
      %09_TW 12
      %10_TW 11
      %11_TW 11
            #
    %00_TCAL -1
    %01_TCAL -1
    %02_TCAL -1
    %03_TCAL -1
    %04_TCAL 29
    %05_TCAL 30
    %06_TCAL 29
    %07_TCAL 29
    %08_TCAL 30
    %09_TCAL 28
    %10_TCAL 29
    %11_TCAL 31
            #
   %DEFECTS
       #name chi timewalk
```

%TW_LO 0 0
%TW_LO 1 0
%TW_LO 2 0
%TW_LO 3 0
#4 defects found

atlasPartsId	<atlas parts id>	
eventDescription	MODULE-SUMMARY	
dateEntry [dd/mm/yyyy]	<dd/mm/yyyy>	
location [institueCode(num)]	<data>	
personInitial	<data>	
problem [YES/NO]	<data>	
pass [YES/NO]	<data>	
comments	<data>	
last I_V I_150V [microA]	<data>	
I_350V [microA]	<data>	
I_500V [microA]	<data>	
lastLT deltaI [microA]	<data>	
maxZupper [mm]	<data>	
maxZlower [mm]	<data>	
nDefectiveChannels	<data>	
defectiveChannels	<data>	ch1,ch2,ch3,...
averageNoiseOccupancy (1fC)	<data>	: of good channels
lastMetrologyDate [dd/mm/yyyy]	<dd/mm/yyyy>	
lastI_Vdate[dd/mm/yyyy]	<dd/mm/yyyy>	