

GENERAL RULES : IDS-EXCEL**File name :**

File name is composed in the following way:

<payload name> _ <issue> _ <revision> .XLS

with <issue> number starting from 1

Issue change corresponds to important modifications

(minor updates should be traced as revision of the IDS)

with <revision> number starting from 0 (or from draft; example: issue 2.draft)

Revision change corresponds to minor modification or updates following the development status

(e.g. pre-design, development, prototype test, acceptance)

Configuration :

After signature by the relevant personnel, the file is configured by the configuration manager

Cells filling Rules**Numerical values :**

The following symbols: "+", "-", "±", ".", "0" to "9" are the only ones that shall be used for a numerical figure. NOTE: depending on Windows configuration, the decimal separator is either comma "," or point ".". In any case, Excel shall understand the figure as a number.

NOTE: the unit defined in each sub-title are the only ones allowed.

Alphanumerical values :

Note: Take care of the maximum number of characters allowed for each field.

Cells and character color code :

grey cells: titles, designations, etc. Shall not be modified.

red cells: red color used to signal the modifications between two issues or revisions.

In the next issue or revision, the cells previously red shall appear without color as modification was approved (example: data modified from issue 1.1 to issue 1.2 shall be in red cells; when going to issue 1.3, these cells shall come back to white, and change from issue 1.2 to 1.3 shall be in red cells)

grey line : separator for connector and/or pin description

white cell:

- black characters : input data
- blue characters : calculation formula (NOTE: shall not be modified)
- red characters : input to be defined or confirmed

Form modification :

Form modification is not allowed.

If deemed necessary, any form modification request shall be submitted to the Satellite Contractor.

Not applicable sheet

If a sheet is not applicable to a given unit, the following label shall be stuck at the centre of the sheet (example: for a unit having no Serial lines)

Not Applicable

TITLE**Title :**

shall explicitly provide the Program name

Reference :

shall be with the following format: PRGM-Providername-IDS-number
(example: COR-CNES-IDS-0001)

Issue, Revision, and Dates :

self-explanatory

Product code :

9 for every payload unit

Change notice summary / Applicability :

identification of change wrt previous issue/revision, with rationale

NOTE: 240 characters max

REFERENCE LIST

Platform Documentation :

List of all documents used to generate the Platform informations indicated on this Payload IDS frame

Payload Documentation :

List of all documents used to generate the Payload IDS (on the basis of this Payload IDS frame)

MECHANICAL FEATURES

Information responsibility

Data provided by the Payload Mechanical Architect
 IDS EXCEL completed by the Payload Mechanical Architect
 IDS EXCEL verification by: Payload Technical Manager and Payload Prime
 IDS EXCEL validation by : Payload Prime and System Prime

Information objective

- 1) To follow conformity with specification and mass evolution during development
- 2) to permit to establish the Mass, Centering, Inertia budgets
- 2) to provide expected values to Assembly Integration and Test

Information definition (for each payload Unit)

Envelope DIMENSIONS :

unit envelope is defined as the volume above the interface plane
 Length (L), Width (W), Height (H), Diameter (DIA) to be provided with their uncertainties/margins, in mm

Center of Gravity LOCATION :

CoG coordinates shall be given in the unit Reference Frame
 (defined on the unit drawing and/or in the unit Interface Control Document)

MASS :

unit mass in kg, with variations and dispersions

Nominal mass corresponds to the "current best estimate" of the mass

Mass variation : typically, the following figures shall be accounted for:

- 20% or more at the beginning of the development (estimated mass)
- 10% after a good definition level (calculated mass)
- 0% after acceptance (weighted mass)

Mass dispersion :

equal to 5% for non-weighted units, to the mass measurement accuracy for weighted units

Maximum mass :

the maximum mass is the sum of the nominal mass with its variation and dispersion

Note : at a given time in the project development, a given unit may have a certain percentage of "estimated mass" and a certain percentage of "weighted mass". These percentages can be indicated.

Allocated mass :

it is the contractual mass that shall be met by the unit Supplier (specified mass)

INERTIA :

Inertia shall be given at the CoG location, wrt the unit Reference Frame,
 with an accuracy better than 10%. Applicable to units heavier than 20 kg or that cannot be considered as a box (e.g. antenna)

other cells :

self-explanatory

THERMAL FEATURES

Information responsibility

Data provided by the Payload Thermal Architect
 IDS EXCEL completed by the Payload Thermal Architect
 IDS EXCEL verification by: Payload Technical Manager and Payload Prime
 IDS EXCEL validation by : Payload Prime and System Prime

Information objective

- 1) To follow conformity with specification and thermal design evolution during development
- 2) to permit to establish thermal models
- 2) to provide expected values to Assembly Integration and Test

Information definition (for each payload Unit)

Thermo-optical characteristics shall be given with reference to the mechanical/thermal interface control drawing if needed (in case of different coatings or special geometry)

IR EMISSIVITY: Infra Red Emissivity, characteristics of the coating area considered

Solar Absorptivity: characteristic of the coating area considered
 minimum (End of Life) and maximum (Beginning of Life) shall be given

TEMPERATURE LIMITS :

minimum and maximum DESIGN OPERATING TEMPERATURES :

it is the extreme temperatures that the TCS shall guarantee for all operating modes of the unit that payload shall withstand during its specified lifetime for its various operational modes.

ACCEPTANCE and QUALIFICATION OPERATING TEMPERATURES :

defined according to the acceptance/qualification margins philosophy/requirements applicable to units

minimum and maximum DESIGN NON-OPERATING TEMPERATURES :

it is the extreme temperatures that the TCS shall guarantee for a non-operating unit

other cells :

self-explanatory

STA & H02 & H03 I/F**Information responsibility**

Data provided by the Payload Mechanical Architect

IDS EXCEL completed by the Payload Mechanical Architect

IDS EXCEL verification by: Payload Technical Manager and Payload Prime

IDS EXCEL validation by : Payload Prime and System Prime

Information objective

- 1) To follow conformity with I/F specification during development
- 2) to permit to establish compliance between interfaces

Information definition

Main mechanical features of the Star Tracker Assembly interface plane and main mechanical features of the squares supports.

Mechanical and Thermo-optical characteristics of the STA and H02 & H03 brackets shall be given with reference to the mechanical/thermal interface control drawing if needed

These characteristics shall be given only for the relevant units
(only those having an I/F with STA or H02 & H03)

See Mechanics and Thermal help pages to fill the STA & H02 & H03 IDS form

POWER CONSUMPTION

Information responsibility

Data provided by the Payload Electrical Architect

IDS EXCEL completed by the Payload Electrical Architect

IDS EXCEL verification by: Payload Technical Manager and Payload Prime

IDS EXCEL validation by : Payload Prime and System Prime

Information objective

- 1) To follow conformity with specification and consumption evolution during development
- 2) to permit to establish Power and Energy budgets
- 3) to correlate with dissipation, protections, EMC
- 3) to provide expected values to Assembly Integration and Test

Information definition (for each Payload Unit)

Consumption

Unit consumption shall be given for any in-Flight payload modes and ground payload modes (AIT).

Unit consumption is estimated when unit works in one of these modes excluding the ON/OFF phases and transient phases.

Typically, the power transient phases with a duration less than some minutes are not considered.

If the Unit power consumption for one mode describes a cyclic variation, power average is considered (a description of this cyclic variation shall be given in the unit Interface Control Document).

If the Unit power consumption for one mode varies but not in a cyclic way, either a dimensioning but realistic case is considered and the power average is given too (with calculation hypothesis), or a particular mode is created (a description shall be given in the unit ICD).

The electrical consumption of the active thermal control heater lines used by the payload shall be given and clearly identified.

Information hypothesis

The consumption varies with the temperature and supply voltage.

By hypothesis (generic specification), the power determination is realized at $T = 20\text{ }^{\circ}\text{C}$ and for a primary voltage of 28 V.

However, for power budgets and Assembly Integration and Tests (AIT), power information for different temperatures (extreme temperatures of the operating range) and voltages shall be given (conditions shall be described in comments).

Power consumption variations shall also account for ageing and other possible influencing parameters.

If a unit draws power from another unit, the power consumption of both the "primary" and "secondary" units shall be expressed in terms of power consumption of the "primary" unit under the voltage provided by the spacecraft power supply system. Rationale to allocate the overall power demand to the "primary" unit is that this information shall be used to size the power distribution wiring to the "primary". But this is different for power dissipation.

Cells definition

Mode: unit mode (10 characters maximum)

Max Duration (s): maximum duration of the mode if it depends on the unit

Nominal Power Consumption (W):

Nominal power consumption is the "current best estimate" of the power consumption for each mode
Estimated or measured values depending on the project phase.

Power Consumption Variation (W):

Typically, the following figures shall be taken into account:

20% or more for a new unit at the beginning of its development (estimated power consumption)

10% after a good definition level (calculated power consumption)

less than or equal to 5% after measurement (measured power consumption).

Variations shall account for all relevant parameters influencing the unit power consumption in the worst but realistic conditions (thermal environment, radiations, ageing, etc.).

Power Consumption Dispersion (W):

a power consumption dispersion of 5% shall be considered for all unit.

This item corresponds to the dispersion between several "identical" units

(one contributor is the consumption measurement accuracy)

Maximum Power Consumption (W):

It is the sum of the nominal power consumption, with its variation and dispersion.

Power Allocation (W):

It is the contractual power that shall be met by the unit Supplier (specified power consumption).

Comments: 60 characters maximum

POWER CONSUMPTION PROFILES

Information responsibility

Data provided by the Payload Electrical Architect and Technical manager
 IDS EXCEL completed by the Payload Electrical Architect and Technical manager
 IDS EXCEL verification by: Payload Technical Manager and Payload Prime
 IDS EXCEL validation by : Payload Prime and System Prime

Information objective

- 1) To follow conformity with specification and consumption evolution during development
- 2) to permit to establish Power and Energy budgets
- 3) to correlate with dissipation, protections, EMC
- 3) to provide expected values to Assembly Integration and Test

Information definition (for each Payload Unit)

For each Payload operational mode, the unit power consumption profile shall be given.
 For the dimensioning payload modes, a typical power profile versus time shall be given on several consecutive orbits.

This sheet shall refer to a specific document (Payload/Unit ICD section) which describes the different operational modes for the payload, the associated power consumption, the power consumption profiles, the dimensioning hypothesis and maximal consumption hypothesis.

TRANSIENTS POWER DEMAND

Information responsibility

Data provided by the Payload Electrical Architect
 IDS EXCEL completed by the Payload Electrical Architect
 IDS EXCEL verification by: Payload Technical Manager and Payload Prime
 IDS EXCEL validation by : Payload Prime and System Prime

Information objective

- 1) To follow conformity with EMC specification and transients evolution during development
- 2) to permit to establish transients budgets
- 3) to correlate with electrical power, protections and EMC
- 4) to provide expected values to Assembly Integration and Test

Information definition

Transient power demand is estimated when Payload is in modes transition or makes peak power in nominal mode. The objective is to determine the maximum transient power demand for a duration higher than some milliseconds which can have an impact on fuses, cutout, wiring.
 Take care, the transients power demand can be only calculated from consumed power.

Information hypothesis

The transients power demand varies with the temperature and supply voltage.
 By hypothesis (generic specification), the power transient demand determination is realized at $T = 20\text{ }^{\circ}\text{C}$ and for a primary voltage of 28 V.

However, power transients demand information for different temperatures and voltages shall be given (conditions are given in comments).

Be careful: The objective is to determine the maximal power transient demand, the worse case shall be considered.

TRANSIENTS POWER DEMAND: fields

Mode: Payload mode (10 characters maximum)

Peak Type: **S** = short, duration < 100 ms ; **L** = long peak, duration < 5 mn max (1 character)

Peak Demand (A): maximal transient power demand

Duration (s): peak duration

Repetition Rate (peak/s): numerical value

Occurrence: condition to observe transient power demands peaks (60 characters maximum)

Comments : 60 characters maximum

THERMAL DISSIPATION

Information responsibility

Data provided by the Payload Electrical Architect

IDS EXCEL completed by the Payload Electrical Architect

IDS EXCEL verification by: Payload Technical Manager and Payload Prime

IDS EXCEL validation by : Payload Prime and System Prime

Information objective

- 1) To follow conformity with EMC specification and dissipation evolution during development
- 2) to permit to establish dissipation budgets
- 3) to correlate with power consumption, thermal input
- 4) to provide data for thermal analysis

Information definition

Dissipation

Unit dissipation shall be given for any Payload in-Flight modes and Payload Ground modes.

Unit dissipation is estimated when unit works in one of these modes excluding the ON/OFF phases and transient phases.

Typically, the power transient phases with a duration less than some minutes are not considered

If the Unit power dissipation for one mode describes a cyclic variation, power average is considered.

If the Unit power dissipation for one mode varies but not in a cyclic way, either a dimensioning but realistic case is considered and the power average is given too (with calculation hypothesis), or a particular mode is created.

Information hypothesis

The dissipation varies with the temperature and supply voltage.

By hypothesis (generic specification), the power determination is realized at $T = 20^{\circ}\text{C}$ and for a primary voltage of 28 V.

However, for power budgets and thermal analysis, power information for different temperatures and voltages shall be given (conditions are given in comments).

THERMAL DISSIPATION: Fields

Mode: Payload mode (10 characters maximum)

Max Duration (s): maximum duration of the mode if it depends on the payload; else 0

Nominal Power Dissipation (W):

Nominal power dissipation is the "best estimated power dissipation" for each mode;

Estimated or measured values depending on the project phase.

Power Dissipation Variation (W):

Typically, power dissipation variation of 20% or more is taken into account for a new payload at the beginning of the development (estimated power dissipation), power dissipation variation of 10% after a good definition level

(calculated power dissipation), power dissipation variation inferior or equal to 5% after measurement.

At this moment, the variation corresponds to the difference between the nominal dissipation and the maximum dissipation in the worst but realistic conditions (thermal environment, radiations, ageing..)

Power Dissipation Dispersion (W):

Power dissipation dispersion of 5% is taken into account for measurement on existing payload.

This item corresponds to the measurement precision (one of this contributor is the dissipation measurement dispersion between several models of a payload)

Maximum Power Dissipation (W):

Maximum power dissipation is the sum of the nominal dissipation, the dissipation variation and dispersion.

Power Allocation (W):

Power allocation is the contractual power that shall be guaranteed by the Payload Supplier

Comments : 60 characters max

CONNECTORS

Information responsibility

Data provided by the Platform Electrical Architect and Connectors Supplier

Information objective

- 1) To give the whole lines (power and TM/TC) available for the Payload
- 2) to permit to establish Payload/Platform wiring harness and H02, H03 brackets definition documents
- 3) to provide connectors
- 4) to provide description to AIT and AIV

CONNECTORS : fields

Describe for the four H01, H02, H03 and H20 Brackets :

- . The PL connectors on these brackets and associated connector references
- . The signal description for these connectors
- . The Brackets drawings
- . The satellite and payload supplier responsibilities with regard to the deliverables (Brackets, PL connectors, wiring)

Connector Code :

shall be given with the following format: Jxx or Pxx, xx being a numerical figure (e.g. J01, P13, etc)

J is used for a fix connector (mounted on bracket)

P is used for mobile connector (harness wiring, wiring end)

Number of pins : number of pins for a connector

Sex : (1 character: M or F)

M = Male (Pins), F = Female (Socket).

Description : signal description for each connector (60 characters max)

Connector reference : references for the PL connectors

Comments : 60 characters max

PINS DESCRIPTION

The pin descriptions of the PL/PF interface connectors are given in Appendix B.

These pin description correspond to the platform side and shall be used as the payload side pin description (Information filled by ASP and had not to be modified).

Appendix B gives also Informations to be filled by Payload responsible for :

- . The power lines (H01 bracket)
- . the Elementary Acq & Com lines (H02 and H03 brackets)

See Elementary Power help page to fill the pin Description on H01

See Elementary Acq & Com help page to fill the pin Description on H02 and H03

Information responsibility

Data provided by the Platform Electrical Architect

IDS EXCEL completed by the Payload Electrical Architect

IDS EXCEL verification by: Payload Electrical Architect, PL Technical Manager, PF Technical manager

IDS EXCEL validation by : Payload Prime, Satellite Prime, System Prime

Information objective

- 1) To follow conformity with pin allocations and electrical interfaces
- 2) to permit to establish Payload/Platform wiring harness and H02, H03 brackets definition documents
- 3) to provide connectors to correlate with electrical data, protection, wiring harness...
- 4) to provide description to AIT and AIV

PINS DESCRIPTION on H20 Brackets : Fields

Information filled by Alcatel and had not to be modified (cells shaded) :

Connector Code: 1 characters + 2 figures

Pin Number: pin number (connector standard number) in growing order
virtual pin 000 is added for the connector corpse (3 nfigures)

Identifier: completed by Alcatel (PF part)

This identifier allows the association between electrics and command/acquisition (it is the same for both)

Equipment Supplier description: description given by Alcatel (not to be modified)

Note : if pin is not used "NC" is writed

System Internal Description: description given by Alcatel

This description is used at satellite level (ICD)

Note : if pin is not used "NC" is writed

Signal type: after the signal type code, "+" or "-" is added without space

Signe + : hot point of supply, signal ...

Signe - : cold point of supply, signal...

Note : if pin is not used "NC" is writed

I_{max} (mA) : maximal current

V_{max} (V) : maximal voltage

Impedance (K Ohms) : impedance

Gauge (AGW) : gauge of internal wire (inside equipment)

Fuse in DHU (A) : fuse calibre in the DHU

Freq Range (kHz) or Bit Rate (kbit/s) : frequency

**PINS DESCRIPTION on H01, H02 and H03 Bracket : Fields
Information filled by Alcatel and had not to be modified (cells shaded) :**

Connector Code: 1 characters + 2 figures

Pin Number: pin number (connector standard number) in growing order
virtual pin 000 is added for the connector corpse (3 nfigures)

PF internal identifier: Specific identifier at bracket level given by Alcatel and relevant to Program mission

BDS identifier: Specific identifier for Satellite BDS given by Alcatel and relevant to Program mission

PF Signal type: after the signal type code, "+" or "-" is added without space

Signe + : hot point of supply, signal ...

Signe - : cold point of supply, signal...

Note : if pin is not used "NC" is writed

5 PF generic def. / Project def. : when a specific Signal type is used for a program instead of the generic: the 5 PF generic definition is reminded for information

PROTEUS PF internal identifier: 5 PF generic identifier at bracket level given by Alcatel
Note : Column used to identify the difference between Current Project and 5 PF generic definition

PROTEUS Description: 5 PF generic description given by Alcatel
Note : Column used to identify the difference between Current Project and 5 PF generic definition

PROTEUS Signal type: 5 PF generic Signal type given by Alcatel
Note : Column used to identify the difference between Current Project and 5 PF generic definition

I_{max} (mA) : maximal current

V_{max} (V) : maximal voltage

SIOP : independant SIOP card inside the DHU on which the line is implemented
Note SIOP = Standard I/O for PROTEUS

Impedance (K Ohms) : impedance

Gauge (AGW) : gauge of internal wire (inside equipment)

Freq Range (kHz) or Bit Rate (kbit/s) : frequence

SIOP: DHU definition of Standard Input/Output for PROTEUS

ET : End Terminal (Cd & Ctl information)

Grp : Group (Cd & Ctl information)

UIA : User Interface Address (Cd & Ctl information)

Information to be filled by Payload responsible

See Elementary Power help page to fill the pin Description on H01

See Elementary Acq & Com help page to fill the pin Description on H02, H03 and H20

**Correspondance between
System Internal Description/Signal type/Signal Description**

System Internal Description	Signal type	Signal Description
NA		Not Applicable
NC	NC	Not Connected
Shield	SHD	Wire shield
Ground	GND	Grounding (mechanical)
PRIMARY POWER		
Pwr Bus Pwr Bus (Rtn)	P_BNR+ P_BNR-	Power line distributed by DHU (not regulated 23 to 37 Volt)
	P_PCE+ P_PCE-	Power line from PCE (to DHU)
	P_SA+ P_SA-	Power line from Solar Array
	P_BATT+ P_BATT-	Power line from Battery
	P_TH+ P_TH-	Power line for Thermal Heater Command
Pyro Pyro (Rtn)	PYRO+ PYRO-	Pyro line
SECONDARY POWER		
Sec Pwr +xV Sec Pwr +xV (Rtn)	P_Px+ P_Px-	Specific Power line regulated +xxV
Sec Pwr -xV Sec Pwr -xV (Rtn)	P_Mx- P_Mx+	Specific Power line regulated -xxV
Sec Pwr +xV Sec Pwr (Rtn)	P_Px+ P_RTN-	Specific Power line regulated +xxV Specific Power line regulated return 0V
Sec Pwr -xV	P_Mx-	Specific Power line regulated -xxV
SIGNAL		
RF signal RF signal (Rtn)	RF+ RF-	Radio Frequency signal
	PPS_GPS+ PPS_GPS-	PPS (Pulse Per Second) issued from GPS equipement to DHU
	PPS+ PPS-	GPS PPS Signal distributed from DHU to user
	SYNC+ SYNC-	8 Hz Signal for Equipment Synchronization
STANDARD COMMAND		
	LL+ LL-	Low Level Command (standard)
Cmd ON/OFF Cmd ON/OFF (Rtn)	HL+ HL-	High Level Command (standard)
SPECIFIC COMMAND		
	HL_RF+ HL_RF-	Specific High Level Command for RF Switch
	PCE+ PCE-	Specific PCE Command line
	P_SADM+ P_SADM-	Specific SADM motor Command (SIN or COS signal)
	P_MTB+ P_MTB-	Specific Magneto Torquer Bar Command
	P_THR+ P_THR-	Specific Thruster Valve Command
	RWATC+ RWATC-	Specific Reaction Wheel Assembly Torque Command
	RWTDC+	Reaction Wheel Torque Direction Command

**Correspondance between
System Internal Description/Signal type/Signal Description**

System Internal Description	Signal type	Signal Description
STANDARD ACQUISITION		
	AN+ AN-	Analog Voltage Acquisition (standard)
	ANB+ ANB-	Analog Voltage Bipolar Acquisition (standard)
Temp Temp (Rtn)	TH1+ TH1-	Temperature acquisition (Fenwal)
Temp Temp (Rtn)	TH3+ TH3-	Temperature acquisition (Rosemount)
Pwr status Pwr status (Rtn)	DR+ DR-	Digital Relay Status Acquisition (standard)
	DB+ DB-	Digital Bilevel Acquisition (standard)
SPECIFIC ACQUISITION		
	AN_SADM+ AN_SADM-	Specific Analog SADM Position Acquisition
+ (A) - (K)	AN_CCS+ AN_CCS-	Specific Analog CSS Signal Acquisition
	RWRSA+	Reaction Wheel Rotation Speed Acquisition
	RWSDA+	Reaction Wheel Speed Direction Acquisition
	RWOOA+	Reaction Wheel ON/OFF Status Acquisition
BUS		
Data TM/TC (+) Data TM/TC (-)	RS422+ RS422-	RS422 line
Enable TM (+) Enable TM (-)	DS16_E+ DS16_E-	Digital Serial 16 bits Acquisition Enable signal (OBDH standard)
Data TM (+) Data TM (-)	DS16_D+ DS16_D-	Digital Serial 16 bits Acquisition Data signal (OBDH standard)
Clock TM (+) Clock TM (-)	DS16_C+ DS16_C-	Digital Serial 16 bits Acquisition Clock signal (OBDH standard)
Enable TC (+) Enable TC (-)	ML16_E+ ML16_E-	Digital Serial 16 bits Command Enable signal (OBDH standard)
Data TC (+) Data TC (-)	ML16_D+ ML16_D-	Digital Serial 16 bits Command Data signal (OBDH standard)
Clock TC (+) Clock TC (-)	ML16_C+ ML16_C-	Digital Serial 16 bits Command Clock signal (OBDH standard)
	1553BUS+ 1553BUS-	1553 Bus line
	RS_GYR+ RS_GYR-	Additional pair, specific to Gyro, for RS422 line
	RS_GPS+ RS_GPS-	Additional pair, specific to GPS, for RS422 line
	RS_STR+ RS_STR-	Additional pair, specific to STR, for RS422 line

Elementary Power description

PINS DESCRIPTION on H01 Bracket : Fields

The Data provided by Alcatel and the Data to be filled by the Payload supplier are described on the figure below :

Impedance (k Ω max) (PL side)	Gauge (AWG) (PL side)	I max (mA) (PL side)	V max (V) (PL side)	Payload Functional Description	Payload Functional Identifier	Payload Wiring Identifier	Payload CANC	Connector Code	Pin Number	PROTEUS Identifier	PROTEUS Description	PROTEUS System Internal Description	PROTEUS Signal type	I max (mA) (PF side)	V max (V) (PF side)	Impedance (k Ω max) (PF side)	Gauge (AWG) (PF side)	Fuse in DHU (A)
								J01	000		HEAT 14 N	Ground	GND	2200	37			
								J01	001		HEAT 14 N	Heater THC 14 N	P_TH+	2200	37			
								J01	003		HEAT 18 N	Heater THC 18 N	P_TH+	2200	37			
								J01	004		HEAT 17 N	Heater THC 17 N 50W	P_TH+	2200	37			
								J01	005		HEAT 18 N	Heater THC 18 N 50W	P_TH+	2200	37			
								J01	006		HEAT 19 N	Heater THC 19 N	P_TH+	2200	37			
								J01	007		HEAT 20 N	Heater THC 20 N	P_TH+	2200	37			
								J01	008		HEAT 21 N	Heater THC 21 N 50W	P_TH+	2200	37			
								J01	009		HEAT 01 N	Heater THC 1 N	P_TH+	2200	37			

Payload functional description
indicates the functional description of the function (80 max. alphanumerical characters)

Gauge
indicates the gauge of the wire

Impedance
indicates the impedance seen by the platform

Payload C/NC indicates if the pin is used in the PL :
C : the electrical line is used
NC : the electrical line is not used
Note : This indicator leads to implementing (C indicator) or not (NC indicator) the harness wires within the PF

Information to be filled by Payload responsible

Information filled by ASP and had not to be modified

V max
indicates the max. voltage on the wire

I max
indicates the max. current on through the wire

Payload Functional Identifier
indicates the name function (telemetry or command) 11 max. alphanumerical characters

Payload wiring description
indicates the description of the wired function (80 max. alphanumerical characters)

Elementary Acquisitions and Commands description

PINS DESCRIPTION on H02 and H03 Bracket : Fields

The Data provided by Alcatel and the Data to be filled by the Payload supplier are described on the figure below :

FDIR Filter Value indicates the number of occurrences of anomalies before FDIR triggering	FDIR Max value indicates, in case of FDIR action is required, the max. value which triggers the FDIR action	Frequency range indicates the frequency or data rate of the signal (Bandwidth of electrical IF circuit)	Payload functional description indicates the functional description of the function (80 max. alphanumerical characters)(1)	Payload wiring description indicates the description of the wired function (80 max. alphanumerical characters)	Payload C/NC indicates if the pin is used in the PL: C : the electrical line is used NC : the electrical line is not used Note : This indicator leads to implementing (C indicator) or not (NC indicator) the harness wires within the PF
FDIR Min value indicates, in case of FDIR action is required, the min. value which triggers the FDIR action	Transfer function Name Name of the transfer function : The first character of the TF name shall be : P for physical TF L for labelling TF Note : the transfer function (TF) shall be detailed in a dedicated part/document. This document shall be identified in Payload Documentation list.	Unit indicates the unit of the TM : V : Volt mV : milli Volt A : Ampere °C : Celsius degree °K : Kelvin degree Hz : Hertz mA : milli Ampère mn : minute Ohms : Ohms ... For other, to be requested to ASP	I max indicates the max. current through the wire	V max indicates the max. voltage on the wire	Payload Functional Identifier indicates the name function (telemetry or command) 11 max. alphanumeric characters
Impedance indicates the impedance seen by the platform (RLC values)	Gauge indicates the gauge and the type of the wires	Information to be filled by Payload responsible	Information to be filled by ASP and modified	Information to be filled by ASP and modified	Information to be filled by ASP and modified
Transfer function Name of the transfer function : The first character of the TF name shall be : P for physical TF L for labelling TF Note : the transfer function (TF) shall be detailed in a dedicated part/document. This document shall be identified in Payload Documentation list.	Unit indicates the unit of the TM : V : Volt mV : milli Volt A : Ampere °C : Celsius degree °K : Kelvin degree Hz : Hertz mA : milli Ampère mn : minute Ohms : Ohms ... For other, to be requested to ASP	I max indicates the max. current through the wire	V max indicates the max. voltage on the wire	Payload Functional Identifier indicates the name function (telemetry or command) 11 max. alphanumeric characters	Payload wiring description indicates the description of the wired function (80 max. alphanumerical characters)
FDIR Max value indicates, in case of FDIR action is required, the max. value which triggers the FDIR action	FDIR Min value indicates, in case of FDIR action is required, the min. value which triggers the FDIR action	Frequency range indicates the frequency or data rate of the signal (Bandwidth of electrical IF circuit)	Payload functional description indicates the functional description of the function (80 max. alphanumerical characters)(1)	Payload wiring description indicates the description of the wired function (80 max. alphanumerical characters)	Payload C/NC indicates if the pin is used in the PL: C : the electrical line is used NC : the electrical line is not used Note : This indicator leads to implementing (C indicator) or not (NC indicator) the harness wires within the PF
Impedance indicates the impedance seen by the platform (RLC values)	Gauge indicates the gauge and the type of the wires	Information to be filled by Payload responsible	Information to be filled by ASP and modified	Information to be filled by ASP and modified	Information to be filled by ASP and modified
Transfer function Name of the transfer function : The first character of the TF name shall be : P for physical TF L for labelling TF Note : the transfer function (TF) shall be detailed in a dedicated part/document. This document shall be identified in Payload Documentation list.	Unit indicates the unit of the TM : V : Volt mV : milli Volt A : Ampere °C : Celsius degree °K : Kelvin degree Hz : Hertz mA : milli Ampère mn : minute Ohms : Ohms ... For other, to be requested to ASP	I max indicates the max. current through the wire	V max indicates the max. voltage on the wire	Payload Functional Identifier indicates the name function (telemetry or command) 11 max. alphanumeric characters	Payload wiring description indicates the description of the wired function (80 max. alphanumerical characters)

Description of acquisitions and commands via 1553 bus

Classification of messages according to subaddress i : comment allowing to distinguish commands and TM response packets of each subaddress

Supplier command or packet name : command name (16 Characters max) or packet mnemo (11 Characters max)

Description: Command or RT answer transmitted packet description (80 characters max)

RT Address: RT address in decimal
31 Address is reserved for Broadcast

T/R: Transmit / Receive: (allowed values: 0 or 1)

- 1 if BC to RT receive message request
- 0 if BC to RT transmit message request
- 1 if BC to RT mode command without data following mode command
- 1 if BC to RT mode command without data expected following RT answer
- 1 if BC to RT mode command with data following mode command
- 0 if BC to RT mode command with data expected following RT answer

RT Subaddress:
RT subaddresses 00000 and 11111 are reserved (1553 Standard) for mode code (the two possibilities shall be implemented)
They are represented by xxxxx in the prefilled data sheet

Word Count / Mode code:
length (in decimal format) of the message in word to be sent or received to/from RT
32 corresponds to wordcount 0

WC variable :
Square to mark if the command wordcode is variable

Total length of response :
TM packet length in 16 bit words

TM pkt APID :
APID (in decimal format) of the TM packet associated to command

Fourth word of response :
Value (in decimal format) of the TM packet fourth 16-bit word

Miscellaneous

data specific to each unit, to be provided by the unit supplier for unit implementation aboard the satellite

MECHANICAL CHARACTERISTICS PER UNIT									
Envelope DIMENSIONS in mm:		CoG LOCATION in mm:			MASS in kg				
L:	+/-	CoGx:	+/-		Nominal Mass				
W:	+/-	CoGy:	+/-		Mass Variation				
DIA:	+/-	CoGz:	+/-		Mass Dispersion				
H:	+/-				Maximum Mass				
					Allocated Mass				
INERTIA in m ² .kg									
Ixx:	+/-	Ixy:	+/-						
Iyy:	+/-	Ixz:	+/-						
Izz:	+/-	Iyz:	+/-						
MATERIAL OF HOUSING AND SURFACE FINISH:					Material :				
					Surface coating :				
					Grounding stud :				
NUMBER OF CONTACT POINTS									
CONTACT AREA OF EACH POINT in cm ² :					% of the baseplate area:				
TOTAL CONTACT AREA in cm ² :									
ROUGHNESS OF CONTACT AREA in microns rms:									
EIGENFREQUENCY in Hz					TIGHTENING THICKNESS in mm:				
THERMAL CHARACTERISTICS PER UNIT									
Payload Interface Control Drawings shall define every payload unit coating									
BASEPLATE MATERIAL:		SURFACE PROPERTIES (Precise areas on the mechanical drawing in case of various thermal coatings)							
BASEPLATE THICKNESS in mm:		IR EMISSIVITY:							
SPECIFIC HEAT (J/kg ² K)		SOLAR ABSORPTIVITY (ext. equipt); min(EOL)/max(BOL):							
TEMPERATURE LIMITS (°C)		MIN		MAX					
QUALIFICATION OPERATING TEMPERATURE									
ACCEPTANCE OPERATING TEMPERATURE									
DESIGN OPERATING TEMPERATURE									
DESIGN NON OPERATING TEMPERATURE									
DESIGN START UP TEMPERATURE									
GROUND STORAGE AND TRANSPORT									
TEMPERATURE STABILITY REQUIREMENTS									
SHORT TERM STABILITY (°C/mn) (optional data)									
LONG TERM STABILITY (°C/h) (optional data)									

STAR TRACKER ASSEMBLY INTERFACES - INTERFACE PLANE MECHANICAL FEATURES		
SUPPORT MATERIAL AND SURFACE FINISH		
NUMBER OF CONTACT POINTS		
CONTACT AREA OF EACH POINT in cm ^ 2:		% of the baseplate area:
FLATNESS OF CONTACT AREA in mm:		
ROUGHNESS OF CONTACT AREA in microns rms:		
SQUARES SUPPORT- INTERFACE PLANE MECHANICAL FEATURES		
H02 SQUARE SUPPORT		
SUPPORT MATERIAL AND SURFACE FINISH		
NUMBER OF CONTACT POINTS		
CONTACT AREA OF EACH POINT in cm ^ 2:		% of the baseplate area:
FLATNESS OF CONTACT AREA in mm:		
ROUGHNESS OF CONTACT AREA in microns rms:		
H03 SQUARE SUPPORT		
SUPPORT MATERIAL AND SURFACE FINISH		
NUMBER OF CONTACT POINTS		
CONTACT AREA OF EACH POINT in cm ^ 2:		% of the baseplate area:
FLATNESS OF CONTACT AREA in mm:		
ROUGHNESS OF CONTACT AREA in microns rms:		

[illegible]

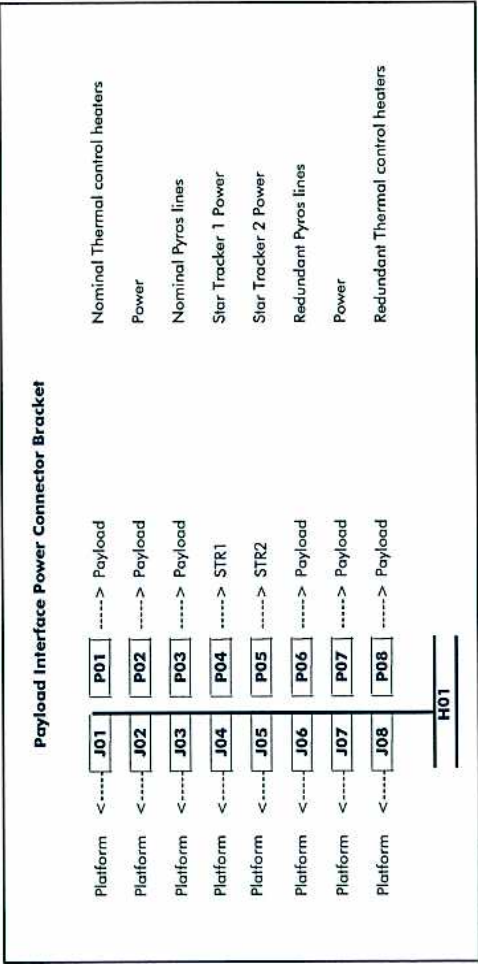
POWER CONSUMPTION PROFILES per PL Unit

For each payload operational mode, power consumption profiles shall be shown below with main assumptions

[illegible]

H01 Bracket : Payload Power Wiring connectors					
Connector Code	Number of pins	Sex (M/F)	Description	Connector ref	Comments
P01	25	M	Nominal Thermal control heaters	DBM-25P	
P02	37	M	Power	DCM-37P	
P03	37	M	Nominal Pyros lines	DCM-37P	
P04	9	M	Star Tracker 1 Power	DEM-9P	
P05	9	M	Star Tracker 2 Power	DEM-9P	
P06	37	M	Redundant Pyros lines	DCM-37P	
P07	37	M	Power	DCM-37P	
P08	25	M	Redundant Thermal control heaters	DBM-25P	
The grounding is done via the connector case					

H01 Bracket : Drawing



Bracket H01 and wiring harness from Platform to this bracket are provided by Alcatel Connectors (P01 to P03 and P06 tyo P08) are provided by Alcatel Wiring Harness from these Connectors to the Payload is made by Payload Supplier. Wiring Harness for STR1 and STR2 are provided by Alcatel

Impedance (mΩ) (PL side)	Qwage (AWG) (PL side)	I max PL (mA) (PL side)	V max (V) (PL side)	Payload Functional Description	Payload Functional Identifier	Payload Wiring Identifier	Payload CNC	Connector Code	Pin Number	PROTEUS PF Internal Identifier	PROTEUS Description	PROTEUS Identifier	PROTEUS Signal Type	I max (mA) (PF side)	V max (V) (PF side)	Impedance (mΩ) (PF side)	Qwage (AWG) (PF side)	Fuse in DIU (A)
								.J01	001	THCL14 N		THCL14 N	P TH+	2200	37			
								.J01	002	THCL15 N		THCL15 N	P TH+	2200	37			
								.J01	003	THCL16 N		THCL16 N	P TH+	2200	37			
								.J01	004	THCL17 N		THCL17 N	P TH+	2200	37			
								.J01	005	THCL18 N		THCL18 N	P TH+	2200	37			
								.J01	006	THCL19 N		THCL19 N	P TH+	2200	37			
								.J01	007	THCL20 N		THCL20 N	P TH+	2200	37			
								.J01	008	THCL21 N		THCL21 N	P TH+	2200	37			
								.J01	009	THCL22 N		THCL22 N	P TH+	2200	37			
								.J01	010	THCL23 N		THCL23 N	P TH+	2200	37			
								.J01	011	THCL24 N		THCL24 N	P TH+	2200	37			
								.J01	012	NC		THCL12 N	P TH+	2200	37			
								.J01	013	NC								
								.J01	014	THCL14 N (m)			P TH-	2200	37			
								.J01	015	THCL15 N (m)			P TH-	2200	37			
								.J01	016	THCL16 N (m)			P TH-	2200	37			
								.J01	017	THCL17 N (m)			P TH-	2200	37			
								.J01	018	THCL18 N (m)			P TH-	2200	37			
								.J01	019	THCL19 N (m)			P TH-	2200	37			
								.J01	020	THCL20 N (m)			P TH-	2200	37			
								.J01	021	THCL21 N (m)			P TH-	2200	37			
								.J01	022	THCL22 N (m)			P TH-	2200	37			
								.J01	023	THCL23 N (m)			P TH-	2200	37			
								.J01	024	THCL24 N (m)			P TH-	2200	37			
								.J01	025	THCL4 N (m)			P TH-	2200	37			
								.J02	001	Pwr Bus P/L 1			P BNR+	5000	37			
								.J02	002	Pwr Bus P/L 1			P BNR+	5000	37			
								.J02	003	Pwr Bus P/L 2			P BNR+	5000	37			
								.J02	004	Pwr Bus P/L 3			P BNR+	5000	37			
								.J02	005	Pwr Bus P/L 3			P BNR+	5000	37			
								.J02	006	Pwr Bus P/L 4			P BNR+	5000	37			
								.J02	007	Pwr Bus P/L 4			P BNR+	5000	37			
								.J02	008	Pwr Bus P/L 4			P BNR+	5000	37			
								.J02	009	Pwr Bus P/L 5			P BNR+	5000	37			
								.J02	010	Pwr Bus P/L 5			P BNR+	5000	37			
								.J02	011	Pwr Bus P/L 6			P BNR+	5000	37			
								.J02	012	Pwr Bus P/L 6			P BNR+	5000	37			
								.J02	013	Pwr Bus P/L 7			P BNR+	5000	37			
								.J02	014	Pwr Bus P/L 7			P BNR+	5000	37			
								.J02	015	Pwr Bus P/L 8			P BNR+	5000	37			
								.J02	016	Pwr Bus P/L 8			P BNR+	5000	37			
								.J02	017	NC								
								.J02	018	NC								
								.J02	019	NC								
								.J02	020	Pwr Bus P/L 1 (Rth)			P BNR-	5000	37			
								.J02	021	Pwr Bus P/L 1 (Rth)			P BNR-	5000	37			
								.J02	022	Pwr Bus P/L 2 (Rth)			P BNR-	5000	37			
								.J02	023	Pwr Bus P/L 2 (Rth)			P BNR-	5000	37			
								.J02	024	Pwr Bus P/L 3 (Rth)			P BNR-	5000	37			
								.J02	025	Pwr Bus P/L 3 (Rth)			P BNR-	5000	37			
								.J02	026	Pwr Bus P/L 4 (Rth)			P BNR-	5000	37			
								.J02	027	Pwr Bus P/L 4 (Rth)			P BNR-	5000	37			
								.J02	028	Pwr Bus P/L 5 (Rth)			P BNR-	5000	37			
								.J02	029	Pwr Bus P/L 5 (Rth)			P BNR-	5000	37			
								.J02	030	Pwr Bus P/L 6 (Rth)			P BNR-	5000	37			
								.J02	031	Pwr Bus P/L 6 (Rth)			P BNR-	5000	37			
								.J02	032	Pwr Bus P/L 7 (Rth)			P BNR-	5000	37			
								.J02	033	Pwr Bus P/L 7 (Rth)			P BNR-	5000	37			
								.J02	034	Pwr Bus P/L 8 (Rth)			P BNR-	5000	37			
								.J02	035	Pwr Bus P/L 8 (Rth)			P BNR-	5000	37			
								.J02	036	NC								
								.J02	037	NC								
								.J03	001	Pwr 1 P/L N			PYRO+	5000	37			
								.J03	002	NC								
								.J03	003	Pwr 2 P/L N			PYRO+	5000	37			
								.J03	004	NC								
								.J03	005	Pwr 3 P/L N			PYRO+	5000	37			
								.J03	006	NC								
								.J03	007	Pwr 4 P/L N			PYRO+	5000	37			
								.J03	008	NC								

Impedance (pL side) (pL side)	Gauge (AWG) (P.L. side)	I max PL (mA) (side)	V max (V) (P.L. side)	Payload Functional Identifier	Payload Wiring Identifier	Payload CNC	Connector Code	Pin Number	PROTEUS PF Internal Identifier	PROTEUS Description	PROTEUS Identifier	PROTEUS Signal type	I max (mA) (P.L. side)	V max (V) (P.L. side)	Impedance (koma) (P.L. side)	Gauge (AWG) (P.L. side)	Fuse in DHU (A)
							J03	009	Pyro 5 P/L N			PYRO+	5000	37			
							J03	010	NC								
							J03	011	Pyro 6 P/L N			PYRO+	5000	37			
							J03	012	NC								
							J03	013	Pyro 7 P/L N			PYRO+	5000	37			
							J03	014	NC								
							J03	015	Pyro 8 P/L N			PYRO+	5000	37			
							J03	016	NC								
							J03	017	NC								
							J03	018	NC								
							J03	019	NC								
							J03	020	Pyro 1 P/L N (Rtn)			PYRO-	5000	37			
							J03	021	NC								
							J03	022	Pyro 2 P/L N (Rtn)			PYRO-	5000	37			
							J03	023	NC								
							J03	024	Pyro 3 P/L N (Rtn)			PYRO-	5000	37			
							J03	025	NC								
							J03	026	Pyro 4 P/L N (Rtn)			PYRO-	5000	37			
							J03	027	NC								
							J03	028	Pyro 5 P/L N (Rtn)			PYRO-	5000	37			
							J03	029	NC								
							J03	030	Pyro 6 P/L N (Rtn)			PYRO-	5000	37			
							J03	031	NC								
							J03	032	Pyro 7 P/L N (Rtn)			PYRO-	5000	37			
							J03	033	NC								
							J03	034	Pyro 8 P/L N (Rtn)			PYRO-	5000	37			
							J03	035	NC								
							J03	036	NC								
							J03	037	NC								
							J04	001	P STR+			P STR+	370	53			
							J04	002	Cmd ON		PM STR1_ON_CMD_ORBHADR	HL+	90	29			
							J04	003	Cmd OFF		PM STR1_OFF_CMD_ORBHADR	HL+	90	29			
							J04	004	status		ZT STR1_ONOFF_STATUS_ACO_ORBHADR	DR+					
							J04	005	GND			GND					
							J04	006	Pwr Bus (Rtn)			P BNR-	370				
							J04	007	Cmd ON (Rtn)			HL-	90				
							J04	008	Cmd OFF (Rtn)			HL-	90				
							J04	009	status (Rtn)			DR-					
							J05	001	P STR+			P STR+	370	53			
							J05	002	Cmd ON		PM STR2_ON_CMD_ORBHADR	HL+	90	29			
							J05	003	Cmd OFF		PM STR2_OFF_CMD_ORBHADR	HL+	90	29			
							J05	004	status		ZT STR2_ONOFF_STATUS_ACO_ORBHADR	DR+					
							J05	005	GND			GND					
							J05	006	Pwr Bus (Rtn)			P BNR-	370				
							J05	007	Cmd ON (Rtn)			HL-	90				
							J05	008	Cmd OFF (Rtn)			HL-	90				
							J05	009	status (Rtn)			DR-					
							J06	000	GND			GND					
							J06	001	Pyro 1 P/L R			PYRO+	5000	37			
							J06	002	NC								
							J06	003	Pyro 2 P/L R			PYRO+	5000	37			
							J06	004	NC								
							J06	005	Pyro 3 P/L R			PYRO+	5000	37			
							J06	006	NC								
							J06	007	Pyro 4 P/L R			PYRO+	5000	37			
							J06	008	NC								
							J06	009	Pyro 5 P/L R			PYRO+	5000	37			
							J06	010	NC								
							J06	011	Pyro 6 P/L R			PYRO+	5000	37			
							J06	012	NC								
							J06	013	Pyro 7 P/L R			PYRO+	5000	37			
							J06	014	NC								
							J06	015	Pyro 8 P/L R			PYRO+	5000	37			
							J06	016	NC								
							J06	017	NC								
							J06	018	NC								
							J06	019	NC								
							J06	020	Pyro 1 P/L R (Rtn)			PYRO-	5000	37			
							J06	021	NC								

Impedance (nom) (P.L side)	Gauge (AWG) (P.L side)	I max (mA) (P.L side)	V max (V) (P.L side)	Payload Functional Description	Payload Functional Identifier	Payload Wiring Identifier	Payload CNC	Connector Code	Pin Number	PROTEUS PF Internal Identifier	PROTEUS Description	PROTEUS Identifier	PROTEUS Signal Type	I max (mA) (P.L side)	V max (V) (P.L side)	Impedance (nom) (P.L side)	Gauge (AWG) (P.L side)	Rate in JHU (P.L side)
								.J06	022	Pwr 2 P.L. R (Rtn)			PYRO-	5000	37			
								.J06	023	NC			PYRO-	5000	37			
								.J06	024	Pwr 3 P.L. R (Rtn)			PYRO-	5000	37			
								.J06	025	NC			PYRO-	5000	37			
								.J06	026	Pwr 4 P.L. R (Rtn)			PYRO-	5000	37			
								.J06	027	NC			PYRO-	5000	37			
								.J06	028	Pwr 5 P.L. R (Rtn)			PYRO-	5000	37			
								.J06	029	NC			PYRO-	5000	37			
								.J06	030	Pwr 6 P.L. R (Rtn)			PYRO-	5000	37			
								.J06	031	NC			PYRO-	5000	37			
								.J06	032	Pwr 7 P.L. R (Rtn)			PYRO-	5000	37			
								.J06	033	NC			PYRO-	5000	37			
								.J06	034	Pwr 8 P.L. R (Rtn)			PYRO-	5000	37			
								.J06	035	NC								
								.J06	036	NC								
								.J06	037	NC								
								.J07	001	Pwr Bus P.L. 9			P BNR+	5000	37			
								.J07	002	Pwr Bus P.L. 9			P BNR+	5000	37			
								.J07	003	Pwr Bus P.L. 10			P BNR+	5000	37			
								.J07	004	Pwr Bus P.L. 10			P BNR+	5000	37			
								.J07	005	Pwr Bus P.L. 11			P BNR+	5000	37			
								.J07	006	Pwr Bus P.L. 11			P BNR+	5000	37			
								.J07	007	Pwr Bus P.L. 12			P BNR+	5000	37			
								.J07	008	Pwr Bus P.L. 12			P BNR+	5000	37			
								.J07	009	Pwr Bus P.L. 13			P BNR+	5000	37			
								.J07	010	Pwr Bus P.L. 13			P BNR+	5000	37			
								.J07	011	Pwr Bus P.L. 14			P BNR+	5000	37			
								.J07	012	Pwr Bus P.L. 14			P BNR+	5000	37			
								.J07	013	Pwr Bus P.L. 15			P BNR+	5000	37			
								.J07	014	Pwr Bus P.L. 15			P BNR+	5000	37			
								.J07	015	Pwr Bus P.L. 16			P BNR+	5000	37			
								.J07	016	Pwr Bus P.L. 16			P BNR+	5000	37			
								.J07	017	NC								
								.J07	018	NC								
								.J07	019	NC								
								.J07	020	Pwr Bus P.L. 9 (Rtn)			P BNR-	5000	37			
								.J07	021	Pwr Bus P.L. 9 (Rtn)			P BNR-	5000	37			
								.J07	022	Pwr Bus P.L. 10 (Rtn)			P BNR-	5000	37			
								.J07	023	Pwr Bus P.L. 10 (Rtn)			P BNR-	5000	37			
								.J07	024	Pwr Bus P.L. 11 (Rtn)			P BNR-	5000	37			
								.J07	025	Pwr Bus P.L. 11 (Rtn)			P BNR-	5000	37			
								.J07	026	Pwr Bus P.L. 12 (Rtn)			P BNR-	5000	37			
								.J07	027	Pwr Bus P.L. 12 (Rtn)			P BNR-	5000	37			
								.J07	028	Pwr Bus P.L. 13 (Rtn)			P BNR-	5000	37			
								.J07	029	Pwr Bus P.L. 13 (Rtn)			P BNR-	5000	37			
								.J07	030	Pwr Bus P.L. 14 (Rtn)			P BNR-	5000	37			
								.J07	031	Pwr Bus P.L. 14 (Rtn)			P BNR-	5000	37			
								.J07	032	Pwr Bus P.L. 15 (Rtn)			P BNR-	5000	37			
								.J07	033	Pwr Bus P.L. 15 (Rtn)			P BNR-	5000	37			
								.J07	034	Pwr Bus P.L. 16 (Rtn)			P BNR-	5000	37			
								.J07	035	Pwr Bus P.L. 16 (Rtn)			P BNR-	5000	37			
								.J07	036	NC								
								.J07	037	NC								
								.J08	001	THCL14 R		THCL14 R	P TH+	2200	37			
								.J08	002	THCL16 R		THCL16 R	P TH+	2200	37			
								.J08	003	THCL16 R		THCL16 R	P TH+	2200	37			
								.J08	004	THCL17 R		THCL17 R	P TH+	2200	37			
								.J08	005	THCL18 R		THCL18 R	P TH+	2200	37			
								.J08	006	THCL19 R		THCL19 R	P TH+	2200	37			
								.J08	007	THCL20 R		THCL20 R	P TH+	2200	37			
								.J08	008	THCL21 R		THCL21 R	P TH+	2200	37			
								.J08	009	THCL1 R		THCL1 R	P TH+	2200	37			
								.J08	010	THCL2 R		THCL2 R	P TH+	2200	37			
								.J08	011	THCL3 R		THCL3 R	P TH+	2200	37			
								.J08	012	THCL4 R		THCL4 R	P TH+	2200	37			
								.J08	013	NC								
								.J08	014	THCL14 R (rn)			P TH-	2200	37			
								.J08	015	THCL15 R (rn)			P TH-	2200	37			
								.J08	016	THCL16 R (rn)			P TH-	2200	37			
								.J08	017	THCL17 R (rn)			P TH-	2200	37			

Impedance (norm) (PL side)	Impedance (AWG) (PL side)	I max (mA) (PL side)	V max (V) (PL side)	Payload Functional Description	Payload Functional Identifier	Payload Wiring Identifier	Payload CMC	Connector Code	Pin Number	PROTEUS PF Internal Identifier	PROTEUS Description	PROTEUS Identifier	PROTEUS Signal type	I max (mA) (PF side)	V max (V) (PF side)	Impedance (norm) (PF side)	Impedance (AWG) (PF side)	Fuse in DHU (A)
								J08	018	THC L18 R (m)			P TH-	2200	37			
								J08	019	THC L19 R (m)			P TH-	2200	37			
								J08	020	THC L20 R (m)			P TH-	2200	37			
								J08	021	THC L21 R (m)			P TH-	2200	37			
								J08	022	THC L1 R (m)			P TH-	2200	37			
								J08	023	THC L2 R (m)			P TH-	2200	37			
								J08	024	THC L3 R (m)			P TH-	2200	37			

[illegible]

Pin description on HQ2

Die Beschreibung von MIN3

H3 Breakout - Payload Interface TM/TTC connectors Pin Description																														
Port	Port	Port	Transducer	Unit	Freq Range (kHz)	Impedance	Output (Vrms)	Line P.	V max	Physical Functions Description	Physical Functions Identifier	Revised Wiring Identifier	Connector Code	Pin Number	CONDT PF Internal Identifier	CONDT Signal Type	Line P.	V max	Impedance	Output (Vrms)	Freq Range (kHz)	Impedance	CONDT Description	PROTECTOR Identifier	BCP	ET	Op	MA	CS	
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
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J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
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J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
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J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28	J29	J30	J31
J01	J02	J03	J04	J05	J06	J07	J08	J09	J10	J11	J12	J13	J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28			

102 Bracket Payload Interface TMTC connectors Pin Description

FOR Filter Value Min. Value	FOR Filter Value Max. Value	Transfer Pin Name	Load	First Wiring (Only) (Pin, side)	Impedance (Pin, side)	Group (MHz) (Pin, side)	Line P. (mA)	V max (V)	Payload Functional Description	Payload Functional Description	Payload Wiring Identifier	Physical CNC	Connector Code	The Interface	CORC Pin Internal Description	CORC Signal (V)	I max (mA)	V max (V)	Imp- edance (Pin, side)	Group (Pin, side)	First Wiring (Only) (Pin, side)	CORC Description	PROTEUS Identifier	BOF	ET	Op	UA	OR
													J11	042	TH 20	TH11	1	15	2370C-A	TH 08 ET11	21 PROT AN 04 M A50, 080-A400	50204	1	1	3	0000		
													J11	041	TH 20 (Rev)	TH11	1	15	2370C-A	TH 08 ET11	21 PROT AN 04 M A50, 080-A400	50204	1	1	3	0000		
													J11	042	TH 21	TH11	1	15	2370C-A	TH 08 ET11	21 PROT AN 04 M A50, 080-A400	50204	1	1	3	0000		
													J11	043	TH 22 (Rev)	TH11	1	15	2370C-A	TH 08 ET11	21 PROT AN 04 M A50, 080-A400	50204	1	1	3	0000		
													J11	045	TH 23 (Rev)	TH11	1	15	2370C-A	TH 08 ET11	21 PROT AN 04 M A50, 080-A400	50204	1	1	3	0000		
													J11	046	TH 24	TH11	1	15	2370C-A	TH 08 ET11	21 PROT AN 04 M A50, 080-A400	50204	1	1	3	0000		
													J11	047	TH 25	TH11	1	15	2370C-A	TH 08 ET11	21 PROT AN 04 M A50, 080-A400	50204	1	1	3	0000		
													J11	048	TH 26	TH11	1	15	2370C-A	TH 08 ET11	21 PROT AN 04 M A50, 080-A400	50204	1	1	3	0000		
													J11	049	TH 27	TH11	1	15	2370C-A	TH 08 ET11	21 PROT AN 04 M A50, 080-A400	50204	1	1	3	0000		
													J12	001	AN 01	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	002	AN 02	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	003	AN 03	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	004	AN 04	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	005	AN 05	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	006	AN 06	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	007	AN 07	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	008	AN 08	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	009	AN 09	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	010	AN 10	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	011	AN 11	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	012	AN 12	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	013	AN 13	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	014	AN 14	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	015	AN 15	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	016	AN 16	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	017	AN 17	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	018	AN 18	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	019	AN 19	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	020	AN 20	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	021	AN 21	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	022	AN 22	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	023	AN 23	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	024	AN 24	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	025	AN 25	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	026	AN 26	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	027	AN 27	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	028	AN 28	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	029	AN 29	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	030	AN 30	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	031	AN 31	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	032	AN 32	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	033	AN 33	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	034	AN 34	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	035	AN 35	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	036	AN 36	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	037	AN 37	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	038	AN 38	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	039	AN 39	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	040	AN 40	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	041	AN 41	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	042	AN 42	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	043	AN 43	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	044	AN 44	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	045	AN 45	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	046	AN 46	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	047	AN 47	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	048	AN 48	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	049	AN 49	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	050	AN 50	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	051	AN 51	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	052	AN 52	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	053	AN 53	AN1	1	5.5	2370C-A	AN P 05 ET1	21 PROT AN 01 M A50, 080-A400	50204	1	1	3	0000		
													J12	054	AN 54	AN1	1	5.5	2									

H03 Bracket : Payload interface TM/TTC connectors					
Connector Code	Number of pins	Sex (M/F)	Description	Connector ref	Comments
J01	50	M	Redundant High Level Command	DDM-50P	
J02	50	F	Redundant Serial acquisition 16 bits	DDM-50S	
J03	37	M	Redundant Serial command 16 bits	DCM-37P	
J04	25	M	Redundant Low Level Command	DBM-25P	
J05	9	F	Redundant 1553	DEM-9S	
J06	9	M	Redundant Pulse Per second (PPS)	DEM-9P	
J07	9	F	Redundant Digital Bilevel	DEM-9S	
J08	26	M	Redundant Star tracker Acquisition & Command	DAMA 26P	
J09	25	F	Redundant Digital Relay	DBM-25S	
J10	37	F	Redundant Thermistors for thermal control and monitoring margin	DCM-37S	
J11	50	F	Redundant Thermistors for monitoring	DDM-50S	
J12	50	F	Redundant Analog acquisition	DDM-50S	

H03 Bracket : Drawing

H03 Payload Interface Redundant TM/TC Connector Bracket				
Payload	<---J01	P01 ----->	Platform	Redundant High Level
Payload	<---J02	P02 ----->	Platform	Redundant Serial acquisition 16 bits
Payload	<---J03	P03 ----->	Platform	Redundant Serial command 16 bits
Payload	<---J04	P04 ----->	Platform	Redundant Low Level
Payload	<---J05	P05 ----->	Platform	Redundant 1553
Payload	<---J06	P06 ----->	Platform	Redundant Pulse Per second (PPS)
Payload	<---J07	P07 ----->	Platform	Redundant Digital Bilevel
STR2	<---J08	P08 ----->	Platform	Redundant Star tracker Acq. & Com.
Payload	<---J09	P09 ----->	Platform	Redundant Digital Relay
Payload	<---J10	P10 ----->	Platform	Redundant Thermistors for PF Active thermal control
Payload	<---J11	P11 ----->	Platform	Redundant Thermistors for monitoring
Payload	<---J12	P12 ----->	Platform	Redundant Analog acquisition

H03

Bracket H03 is provided by Payload Supplier.
Wiring harness from Platform to this bracket is provided by Alcatel Connectors (J01 to J07 and J09 to J12) are provided by Alcatel
Wiring Harness from these Connectors to the Payload is made by Payload Supplier.
Wiring Harness for STR2 is provided by Alcatel

[illegible]

M3 Bracket - Payload Interferer TWTG connections Pin Description												
FOR Type Value	FOR Min Value	FOR Max Value	Transmit Function Name	Unit	Free Range (Hz) or BE Rate (bits/s)	Impedance (ohms)	Output (VPP) (% duty)	I max P ₁ (mW)	V max (V)	Pin Description	Connector Code	Pin Number
Payload Functional Description												
Payload Wiring Identifier												
Payload Functional Identifier												
Payload Interferer Description												
Payload Interferer Description												
A01	008	008	NC							NC	A01	008
A01	009	009	CS 0.1							MA 18 E	A01	009
A01	010	010	CS 0.1 D							MA 18 E	A01	010
A01	011	011	CS 0.1 C							MA 18 E	A01	011
A01	012	012	CS 0.1 C							MA 18 E	A01	012
A01	013	013	CS 0.1 E							MA 18 E	A01	013
A01	014	014	NC								A01	014
A01	015	015	NC								A01	015
A01	016	016	CS 0.1 C							MA 18 E	A01	016
A01	017	017	CS 0.1 C							MA 18 E	A01	017
A01	018	018	CS 0.1 C							MA 18 E	A01	018
A01	019	019	CS 0.1 C							MA 18 E	A01	019
A01	020	020	CS 0.1 C							MA 18 E	A01	020
A01	021	021	CS 0.1 C							MA 18 E	A01	021
A01	022	022	CS 0.1 C							MA 18 E	A01	022
A01	023	023	CS 0.1 C							MA 18 E	A01	023
A01	024	024	CS 0.1 C							MA 18 E	A01	024
A01	025	025	CS 0.1 C							MA 18 E	A01	025
A01	026	026	CS 0.1 C							MA 18 E	A01	026
A01	027	027	CS 0.1 C							MA 18 E	A01	027
A01	028	028	CS 0.1 C							MA 18 E	A01	028
A01	029	029	CS 0.1 C							MA 18 E	A01	029
A01	030	030	CS 0.1 C							MA 18 E	A01	030
A01	031	031	CS 0.1 C							MA 18 E	A01	031
A01	032	032	CS 0.1 C							MA 18 E	A01	032
A01	033	033	CS 0.1 C							MA 18 E	A01	033
A01	034	034	CS 0.1 C							MA 18 E	A01	034
A01	035	035	CS 0.1 C							MA 18 E	A01	035
A01	036	036	CS 0.1 C							MA 18 E	A01	036
A01	037	037	CS 0.1 C							MA 18 E	A01	037
A01	038	038	CS 0.1 C							MA 18 E	A01	038
A01	039	039	CS 0.1 C							MA 18 E	A01	039
A01	040	040	CS 0.1 C							MA 18 E	A01	040
A01	041	041	NC								A01	041
A01	042	042	NC								A01	042
A01	043	043	NC								A01	043
A01	044	044	NC								A01	044
A01	045	045	NC								A01	045
A01	046	046	NC								A01	046
A01	047	047	NC								A01	047
A01	048	048	NC								A01	048
A01	049	049	NC								A01	049
A01	050	050	NC								A01	050
A01	051	051	NC								A01	051
A01	052	052	NC								A01	052
A01	053	053	NC								A01	053

H03 Bracket : Payload Interface TMUTC connectors Pin Description

[illegible]

[illegible]

H20 Bracket : Payload STA CTA Wiring connector					
Connector Code	Number of pins	Sex (M/F)	Description	Connector ref	Comments
P05	15	M	STA Active Thermal Control heaters & thermistors	DEMA-15P	HD

H20 Bracket : Drawing



Bracket H20 (STA part) and wiring harness from STA CTA to this bracket are provided by Alcatel
Connector P05 is provided by Payload Supplier.
Wiring Harness from this Connector to the H01, H02 abd H03 Brackets (towards payload) is made by Payload Supplier.

H20 Bracket : Payload STA CTA Wiring Pin Description

Unit	Impedance (Kohms) (PL side)	Gauge (AWG) (PL side)	Payload Wiring Identifier	Payload CNC	Connector Code	Pin Number	Equipment Internal Identifier	Equipment Supplier Description	PROTEUS Identifier	Signal type	I max (mA)	V max (V)	Impe- dance (Kohms)	Gauge (AGW)	Fuse in DHU (A)	Freq Range (kHz) or Bit Rate (kbit/s)
STR					J05	001	Temp THC 14a	Thermal sensor 14 a	T1LINE14	TH1+	1	15				
STR					J05	002	Temp THC 14a (rtn)	Thermal sensor 14 a (rtn)		TH1-						
STR					J05	003	Temp THC14c	Thermal sensor 14 c	T3LINE14	TH1+	1	15				
STR					J05	004	Temp THC 14c (rtn)	Thermal sensor 14 c (rtn)		TH1-						
STR					J05	005	NC									
STR					J05	006	NC									
STR					J05	007	THC L14 N	Heater N 14	THC L14 N	P_TH+	2200	37				
STR					J05	008	THC L14 N (rtn)	Heater N 14 (rtn)		P_TH-						
STR					J05	009	Temp THC 14b	Thermal sensor 14 b	T2LINE14	TH1+	1	15				
STR					J05	010	Temp THC 14b (rtn)	Thermal sensor 14 b (rtn)		TH1-						
STR					J05	011	NC									
STR					J05	012	NC									
STR					J05	013	THC L14 R	Heater R 14	THC L14 R	P_TH+	2200	37				
STR					J05	014	THC L14 R (rtn)	Heater R 14 (rtn)		P_TH-						
STR					J05	015	NC									

1553 Bus

Classification of messages according to subaddress number	Command or packet name	Description	RT address	T/R for RT to receive; 1 for RT to transmit	RT Sub address	Mode Code Word Count	variable Word Count	Total Length of response (16 bits word) if any	TM pkt APID if any	4th word of response (if any)	pkt frequency (Hz) or A (asynchr)	Comment
COM_SUBA_0		Reserved for BC to RT commands as follows:	0	0	0							
	(not used)	Dynamic bus control		1	0	00000						Not implemented
	SYNCHRONIZE	Synchronize		1	0	00001						
	TRANS_STAT_WORD	Transmit status word		1	0	00010						
	INIT_SELF_TEST	Initiate self test		1	0	00011						
	(not used)	Transmitter shut down		1	0	00100						
	(not used)	Override transmitter shutdown		1	0	00101						Not implemented
	INH TERM TAGBIT	Inhibit terminal flag bit		1	0	00110						
	OVER IN T TAGBIT	Override inhibit terminal flag bit		1	0	00111						
	RESET RT	Reset remote terminal		1	0	01000						
	TRANS_VECT_WRD	Transmit vector word		0	0	10000						
	SYNCH W DATA WRD	Synchronize with data word		0	0	10001						
	TRANS_LAST_COM	Transmit last command		1	0	10010						
	TRANS_BIT_WRD	Transmit bit word		1	0	10011						
	(not used)	Selected transmitter shutdown		0	0	10100						
	(not used)	Override selected transmitter shutdown		0	0	10101						Not implemented
COM_TBD_1	BROADCAST_SHUTDOWN	ShutDown of all transmitters	11111	1	0	00100						TBD by equipment supplier
COM_TBD_2				1	2							TBD by equipment supplier
COM_TBD_3				1	3							TBD by equipment supplier
COM_TBD_4				1	4							TBD by equipment supplier
COM_TBD_5				1	5							TBD by equipment supplier
COM_TBD_6				1	6							TBD by equipment supplier
COM_TBD_7				1	7							TBD by equipment supplier
COM_TBD_8				1	8							TBD by equipment supplier
COM_TBD_9				1	9							TBD by equipment supplier

1553 Bus

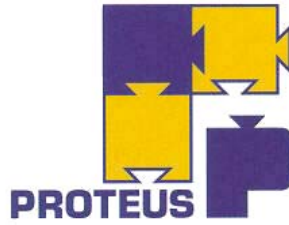
Classification of messages according to subaddress number	Command or packet name	Description	RT address	T/R (0 for RT to receive; 1 for RT to transmit)	RT Sub address	Mode Code Word Count	variable Word Count	Total Length of response (16 bits word) if any	TM pkt APID if any	4th word of response (if any)	pkt frequency (Hz) or A (asynchr)	Comment
COM_TBD_10				1	10							TBD by equipment supplier
COM_TBD_11				1	11							TBD by equipment supplier
COM_TBD_12				1	12							TBD by equipment supplier
COM_TBD_13				1	13							
COM_TBD_14				1	14							
COM_TBD_15				1	15							TBD by equipment supplier
COM_TBD_16		Time Distribution delivery	31	1	16							
		Week number				001						
		Seconds of week (MSW)				010						
		Fraction of second (LSW)				011						
		Fraction of second (MSW)				100						
		Fraction of second (LSW)				101						
COM_TBD_17				1	17							TBD by equipment supplier
COM_TBD_18				1	18							TBD by equipment supplier
COM_TBD_19				1	19							TBD by equipment supplier
COM_TBD_20				1	20							TBD by equipment supplier
COM_TBD_21				1	21							TBD by equipment supplier
COM_TBD_22				1	22							TBD by equipment supplier
COM_TBD_23				1	23							TBD by equipment supplier
COM_TBD_24				1	24							TBD by equipment supplier
COM_TBD_25				1	25							TBD by equipment supplier
COM_TBD_26				1	26							TBD by equipment supplier
COM_TBD_27				1	27							TBD by equipment supplier
COM_TBD_28				1	28							TBD by equipment supplier
COM_TBD_29				1	29							TBD by equipment supplier
BROADCAST_DATE	BROADCAST_DATE	Date Broadcast message	11111	1	30		5				5	
COM_TBD_31		Reserved for BC to RT commands		1	31							
PACKET_SUBA_0		Reserved		0	0							Reserved
PACKET_SUBA_1	PACKET_TBD_1			0	1							TBD by equipment supplier
PACKET_SUBA_2	PACKET_TBD_2			0	2							TBD by equipment supplier
PACKET_SUBA_3	PACKET_TBD_3			0	3							TBD by equipment supplier
PACKET_SUBA_4	PACKET_TBD_4			0	4							TBD by equipment supplier
PACKET_SUBA_5	PACKET_TBD_5			0	5							TBD by equipment supplier
PACKET_SUBA_6	PACKET_TBD_6			0	6							TBD by equipment supplier
PACKET_SUBA_7	PACKET_TBD_7			0	7							TBD by equipment supplier
PACKET_SUBA_8	PACKET_TBD_8			0	8							TBD by equipment supplier
PACKET_SUBA_9	PACKET_TBD_9			0	9							TBD by equipment supplier
PACKET_SUBA_10	PACKET_TBD_10			0	10							TBD by equipment supplier

1553 Bus

Classification of messages according to subaddress number	Command or packet name	Description	RT address	T/R for RT to receive; 1 for RT to transmit	RT Sub address	Mode Code Word Count	variable Word Count	Total Length of response (16 bits word) if any	TM pkt APID if any	4th word of response (if any)	pkt frequency (Hz) or A (asynchr)	Comment
PACKET SUBA 11	PACKET_TBD_11			0	11							TBD by equipment supplier
PACKET SUBA 12	PACKET_TBD_12			0	12							TBD by equipment supplier
PACKET SUBA 13	PACKET_TBD_13			0	13							TBD by equipment supplier
PACKET SUBA 14	PACKET_TBD_14			0	14							TBD by equipment supplier
PACKET SUBA 15		Reserved		0	15							Reserved
PACKET SUBA 16		Reserved		0	16							Reserved
PACKET SUBA 17		Reserved		0	17							Reserved
PACKET SUBA 18		Reserved		0	18							Reserved
PACKET SUBA 19		Reserved		0	19							Reserved
PACKET SUBA 20		Reserved		0	20							Reserved
PACKET SUBA 21		Reserved		0	21							Reserved
PACKET SUBA 22		Reserved		0	22							Reserved
PACKET SUBA 23		Reserved		0	23							Reserved
PACKET SUBA 24		Reserved		0	24							Reserved
PACKET SUBA 25		Reserved		0	25							Reserved
PACKET SUBA 26		Reserved		0	26							Reserved
PACKET SUBA 27		Reserved		0	27							Reserved
PACKET SUBA 28		Reserved		0	28							Reserved
PACKET SUBA 29		Reserved		0	29							Reserved
PACKET SUBA 30		Reserved	1111	0	30							Reserved
PACKET SUBA 31		Reserved		0	31							Reserved

Miscellaneous

TBD by equipment supplier
(specific to each equipment: accommodation constraints, environment susceptibilities, etc)



APPENDIX – C

STANDARD STA IDS

Title	CALIPSO Star Trackers Assembly	Reference	PRO-LBP-O-IC-3060-ASP
Issue	1	Issue Date	18/02/2003
Revision	0	Revision Date	
Authors	Christophe DUPLAY		
Product code			
Issue / Revision	Change notice summary / Applicability		
1 / 0	ORIGINE		

Use ALT-RETURN for add a line in a same cell.

Mechanical architect :	Thermal architect :	Electrical architect :	Command/Control architect :	
Technical Manager :	Procurement manager :	Configuration manager :	Quality manager :	Payload manager :

[illegible]

MECHANICAL CHARACTERISTICS

Envelope DIMENSIONS in mm:				C.G LOCATION in mm:				MASS in kg	
L	474,00	+/-		5,00 CGx :		0,00	+/-	5,00 Nominal Mass	
W	466,00	+/-		5,00 CGy:		4,00	+/-	5,00 Mass Variation	
DI A:		+/-		CGz:	- 179,00		+/-	5,00 Mass Dispersion	
H:	377,00	+/-		5,00				Max imum Mass	
								Allocated Mass	
Nominal inertia provided in STA reference frame axes									
INERTIA in m^2.kg									
I x x :		0,6	+/-	0,05	I x y:	0		+/-	
I yy:		0,6	+/-	0,05	I x z:	0		+/-	
I zz:		0,2	+/-	0,05	I yz:	0		+/-	
MATERIAL OF HOUSING AND SURFACE FINISH:				Housing material : aluminum honeycomb with carb on face sheets (CTE < 2 . 10 ⁻⁶ /m/°)					
NUMBER OF CONTACT POINTS				8	Contact points material: PERMAGLASS ME 730				
CONTACT AREA OF EACH POINT in cm^2:				0,26	5% of the baseplate area:				
FLATNESS OF CONTACT AREA in mm:				0,10					
ROUGHNESS OF CONTACT AREA in microns rms:				3,20					
EIGENFREQUENCY in Hz				> 150 Hz		TIGHTENING THICKNESS in mm:		19 (see annex ed sk etch)	

THERMAL CHARACTERISTICS

For radiative part of the thermal sizing, the following datas shall be considered

Cf ICD Drawing: drawings with all the dimensions define every STA coating.

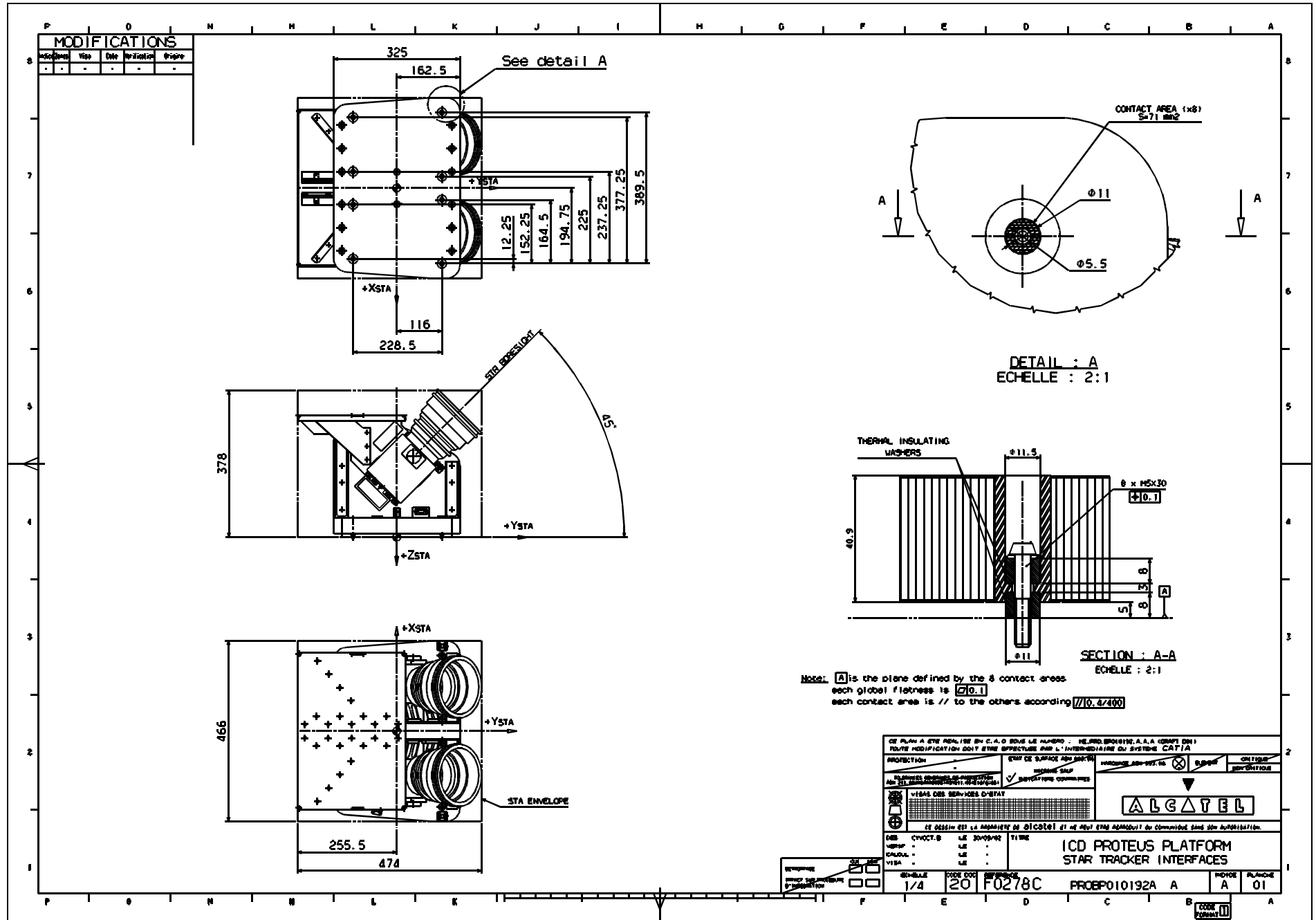
The following table completes the drawings

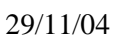
Coating area	Coating type	Thermal-optical features			Temperatures limits (°C)			
		eir	amin (BOL)	amax (EOL)	op.	mode	non-op.	mode
					Tmin	Tmax	Tmin	Tmax
	MLI	0,77	0,32	0,49	adiabatic equilibrium with environment			
	Radiative Area (SSM)	0,76	0,10	0,16	-15,00	30,00	-40,00	30,00

For conductive part, the following datas shall be considered

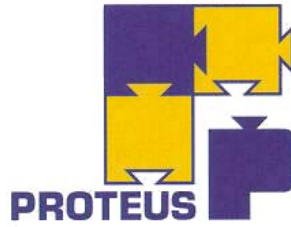
Global thermal conductive coupling 0.04 W/°C (0.005 W/°C per contact points)

Type	Thermal-optical features			Temperatures limits (°C)			
	eir	amin (BOL)	amax (EOL)	op.	mode	non-op.	mode
				Tmin	Tmax	Tmin	Tmax
STA structure	NA	NA	NA	-15,00	30,00	-40,00	30,00





END OF APPENDIX



APPENDIX – D

STA USER'S MANUAL

(this model correspond to a STA flight model equipped with mechanical breadboard of 2 STRs

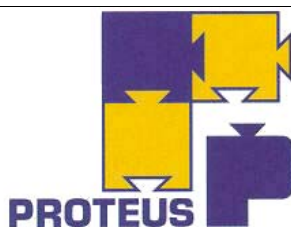
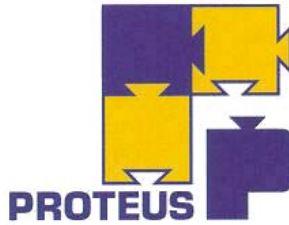


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1. SCOPE

The present document describes the Star Tracker Support Assembly (STA) mass model and its integration procedure.

2. APPLICABLE DOCUMENTATION

2.1 PROJECT SPECIFIC DOCUMENTATION

NA

2.2 GENERAL DOCUMENTATION

NA

2.3 ACRONYMS

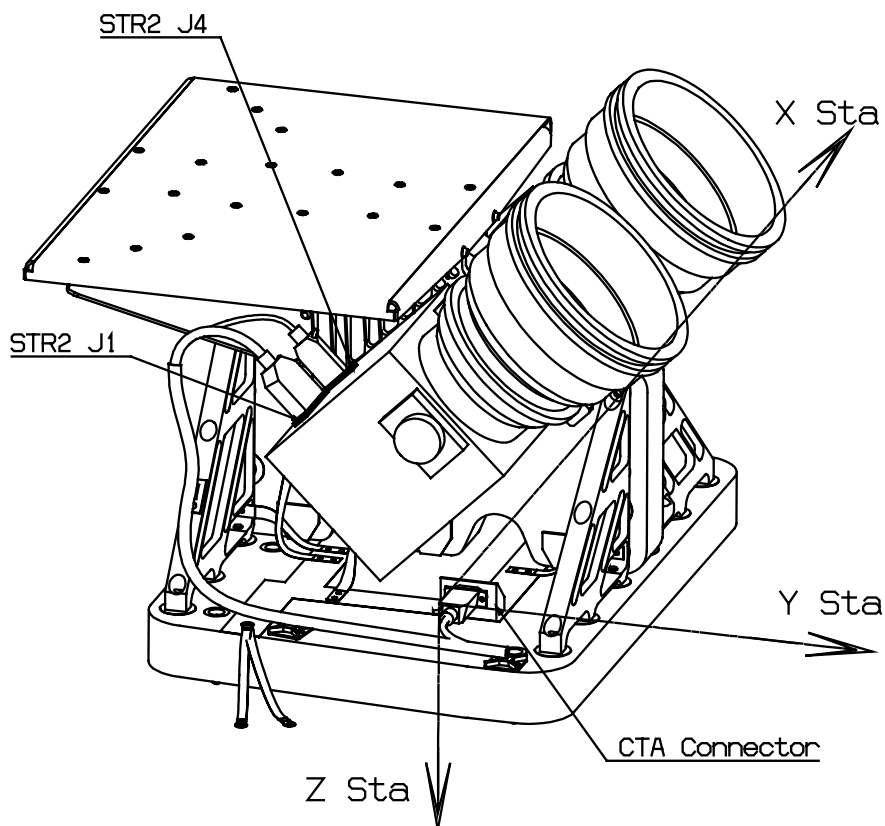
CTA: Active Thermal Control
STB : Requirement specification
N/A : not applicable
Nida : Honeycomb
STR : Star Tracker
STA : Star Tracker Assembly
TML : Total Mass Loss
CVCN : Collected Volatile Condensable Material
PL : Payload

3. STA MASS MODEL

3.1 STA GENERAL DESCRIPTION

STA is composed of 2 STR mass model and the STA flight carbon structure.

The structure is composed of the primary structure, the structure grounding, the thermal control connector mounting on its bracket (H20).



TOTAL MASS : TBD maximum calculated mass

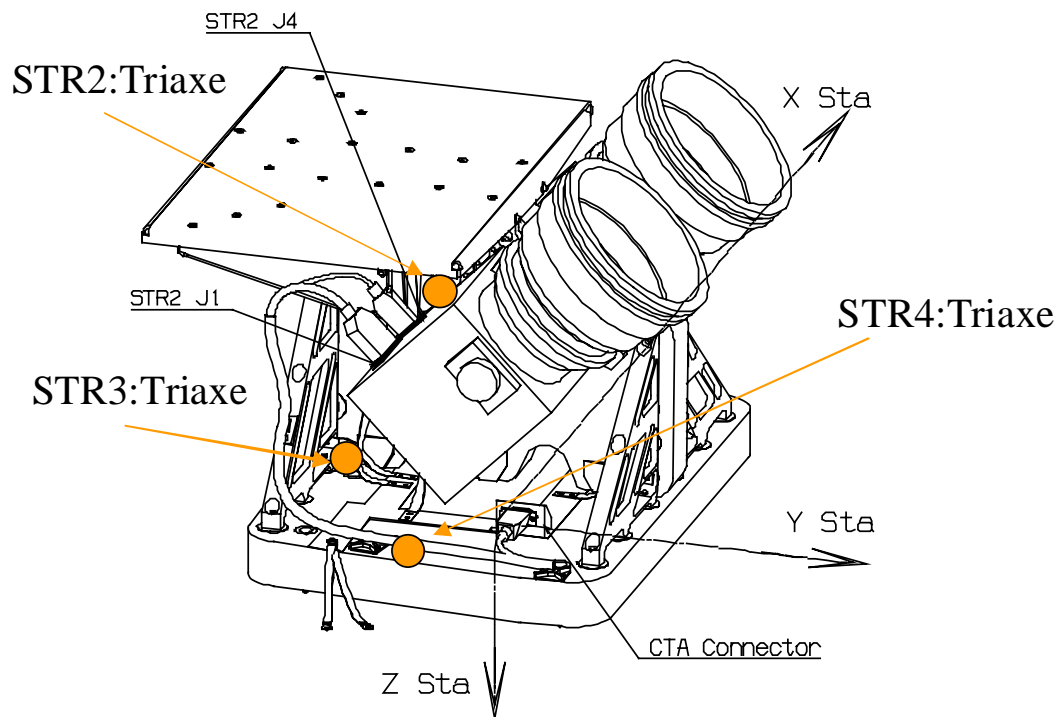
3.2 MASS MODEL REPRESENTATIVITY

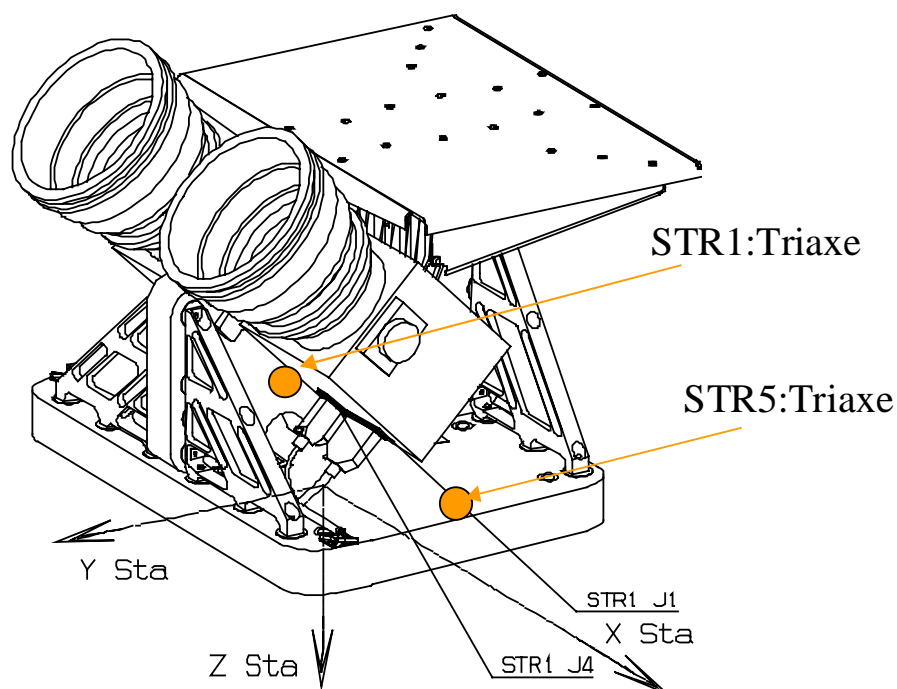
The STA mass model is structurally flight representative with STR mass models.

- Mass
- COG and Inertia
- First modal frequency and first structural mode: 142 Hz, lateral oscillation.
- Geometrical interface
- Fixation component (insulating washers)
- Electrical connectors (with savers for STR connector and screw lock).

4. STA MASS MODEL INSTRUMENTATION

ALCATEL needs 5 accelerometers located as shown on the figures hereafter:





Nota : For commodity reasons, the STR's shown on the figure are the flight CAD representation.

Sensor	Type	Location	Orientation
ST1	3 axes compatible with Sine and acoustic Test frequency range..	On STA structure As close as possible from STR1 attachment point	Parallel to STA Frame
ST2	3 axes compatible with Sine and acoustic Test frequency range..	On STA structure As close as possible from STR2 attachment point	Parallel to STA Frame
ST3	3 axes compatible with Sine and acoustic Test frequency range.	On STA baseplate As close as possible vertical panel.	Parallel to STA Frame
ST4	3 axes compatible with Sine and acoustic Test frequency range.	On STA baseplate On +X STA axis close to the baseplate border	Parallel to STA Frame
ST5	3 axes compatible with Sine and acoustic Test frequency range.	On STA baseplate On - X STA axis close to the baseplate border	Parallel to STA Frame

5. STA MASS MODEL INTEGRATION PROCEDURE

5.1 STA MASS MODEL INTEGRATION ON PAYLOAD

See Annexe figure 1

The M5 titanium screws are provided by Payload supplier. The mini tension required is defined in PL-3.4.6-1.

The tightenig torque TBD is given by Payload supplier

The thermal washers (16 units+ 16 spare) are provided, by Alcate l(rep STA01).

The aluminium washer (10 units) are provided, by Alcatel (rep 344).

The onduflex washer (10 units) are provided, by Alcatel (rep 324).

5.2 TIGHTENING PROCEDURE WITH THERMAL WASHERS:

First the torque is applied to each screw.

After 30 minutes the torque shall be applied a second time.

After 48 hours the torque shall applied a third time.

5.3 ELECTRICAL CONNECTION & HARNESS ROUTING

See annexe figure 2 :

Savers are accommodated on STR connectors in order to not damage the STR cable.

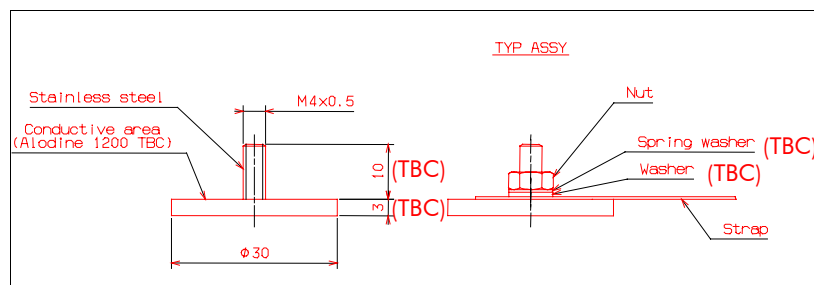
The material of STR female connectors screw-locks is gilded brass.

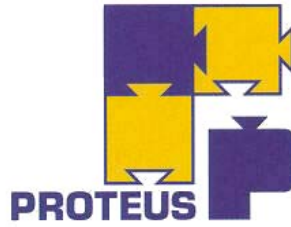
The material of H20 female connectors screw-locks is inox female connectors screw-locks.

The tightening torque of connector screw-lock is : 0.33 N.m.

5.4 STA GROUNDING ON PL

The ground braids are mounted on the payload. The PL supplier shall connect the 2 ground braids with the 2 dedicated stud as shown in next figure.

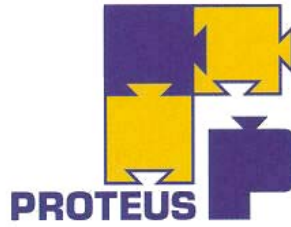




ANNEX







END OF APPENDIX