






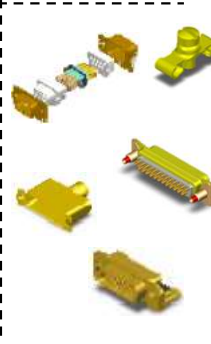



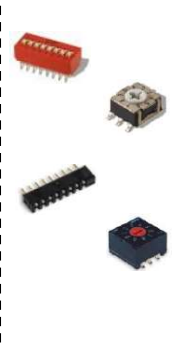








C&K



C&K Product lines

Tact switches	Pushbutton switches	Detect switches	Rotary switches	Key switches	Slide switches	CCM	Hirel products
							
Miniature Tact switches	Navigation switches	Switchlocks switches	DIP switches	Rocker switches	Snap switches	Toggle switches	Modules
							

C&K Application & Customer Overview



Market percentages based on 2014 data.

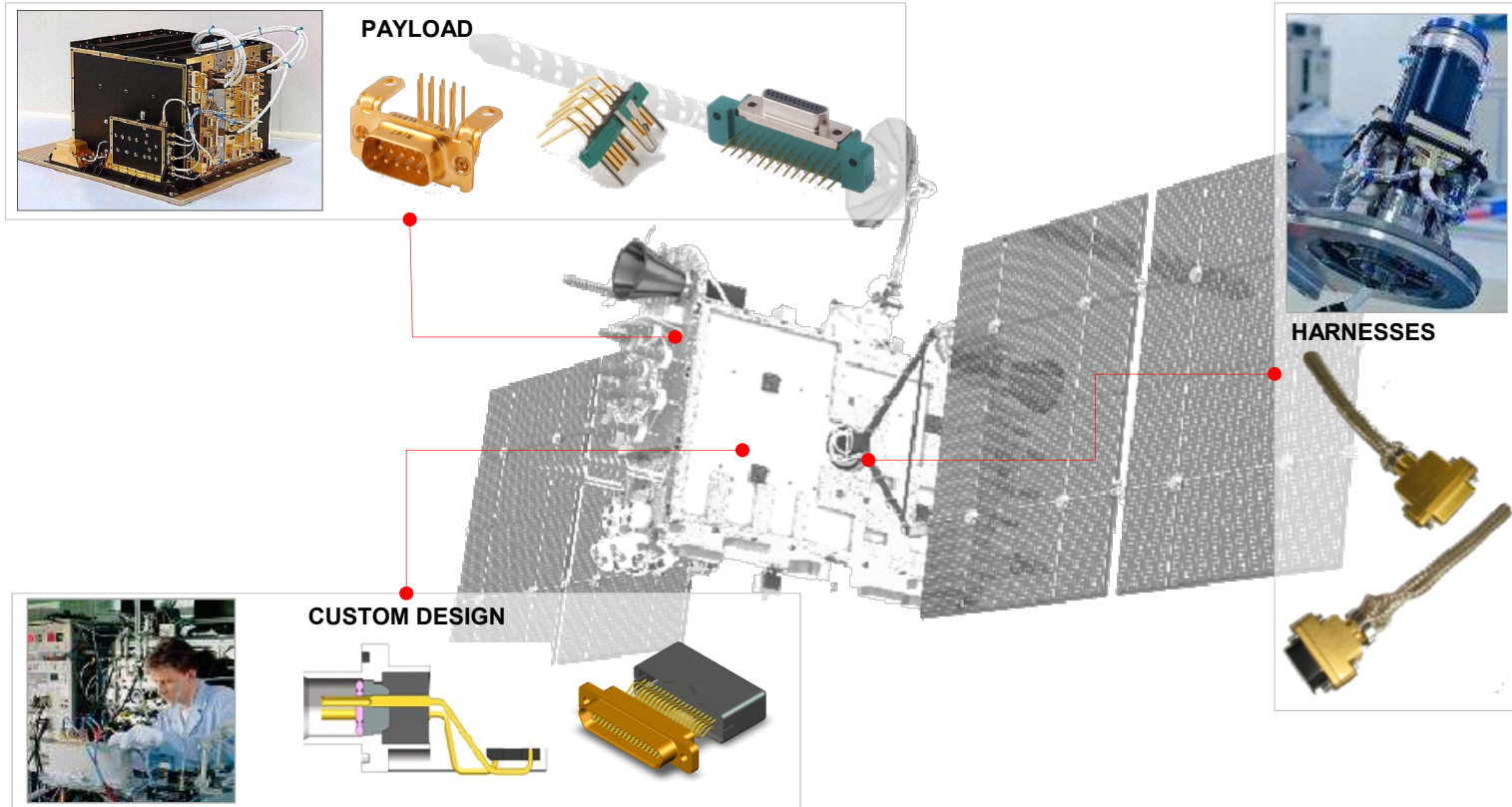
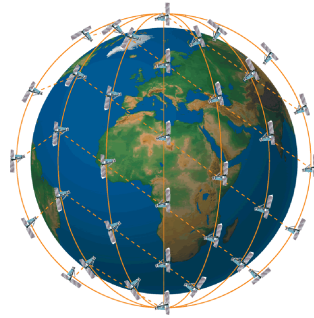


C&K Rectangular Space Grade Connectors
ESA / ESCC
MIL 24308 class M / NASA 311P
Custom designs.

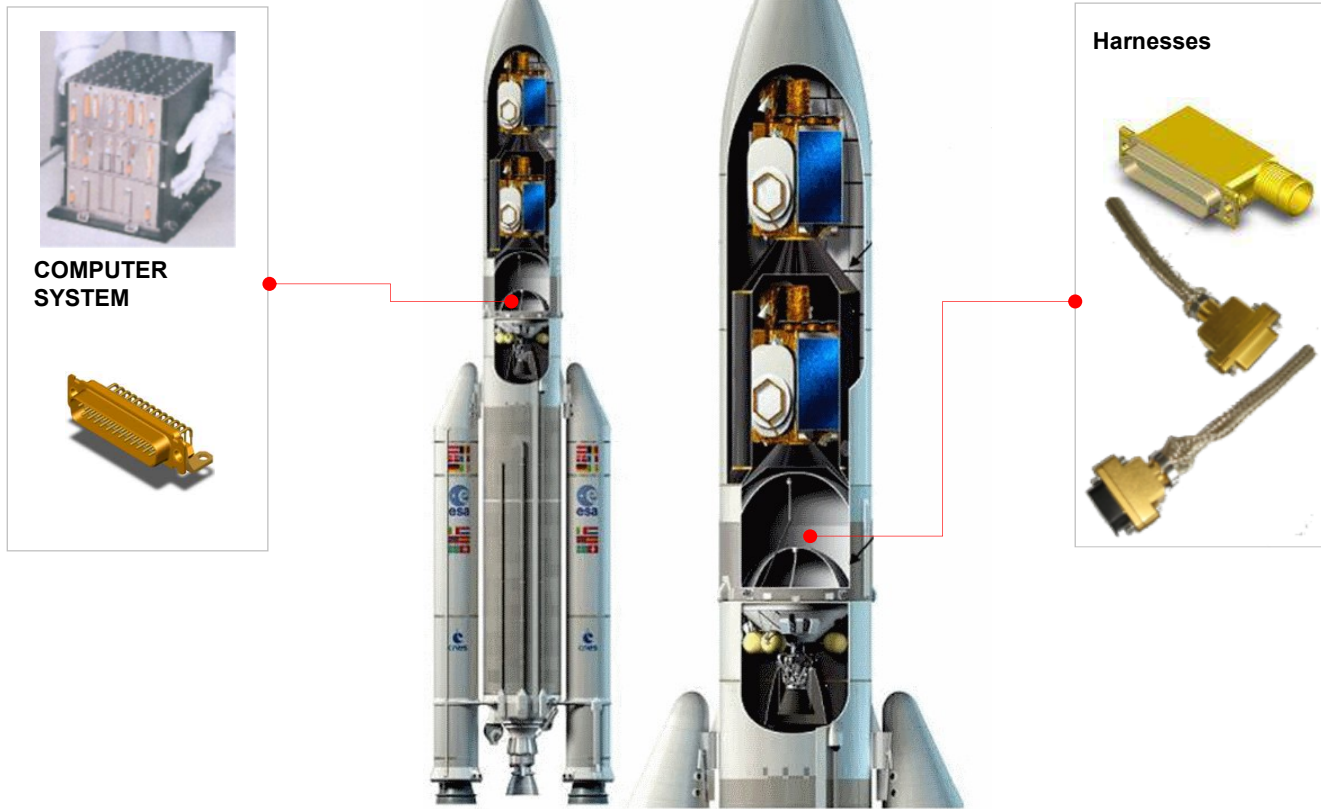


Gilles PARGUEY : EMEA Regional Sales Manager.

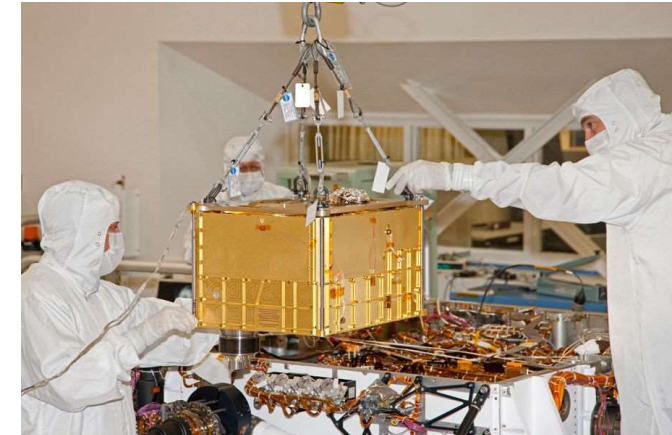
Satellites Market



Launchers Market

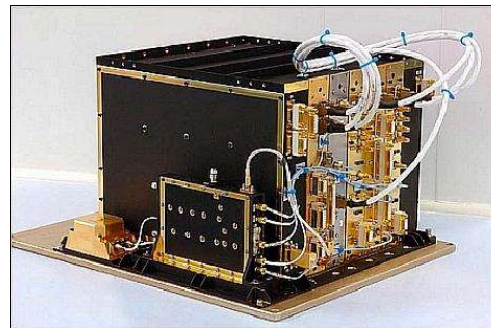


Launchers

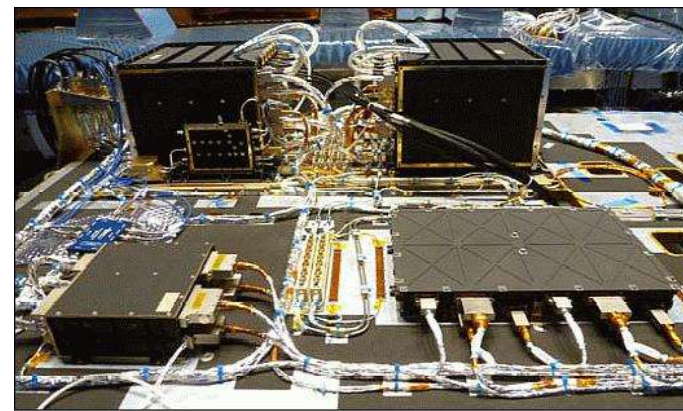


Rectangular Connectors End Usage.

Solar generators
Power equipment
Electrical, RF and microwave equipment
Guidance, navigation and control systems
On-board digital processors
Sensors and actuators
Optical, radar and navigation payload
...

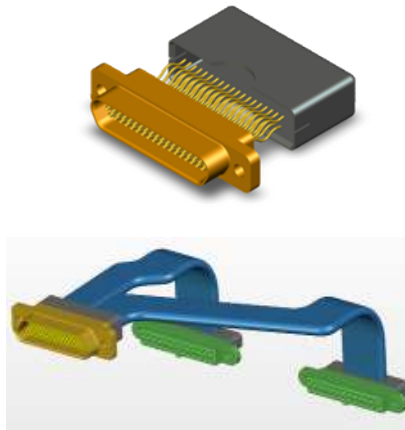


Rectangular Connectors End Usage.

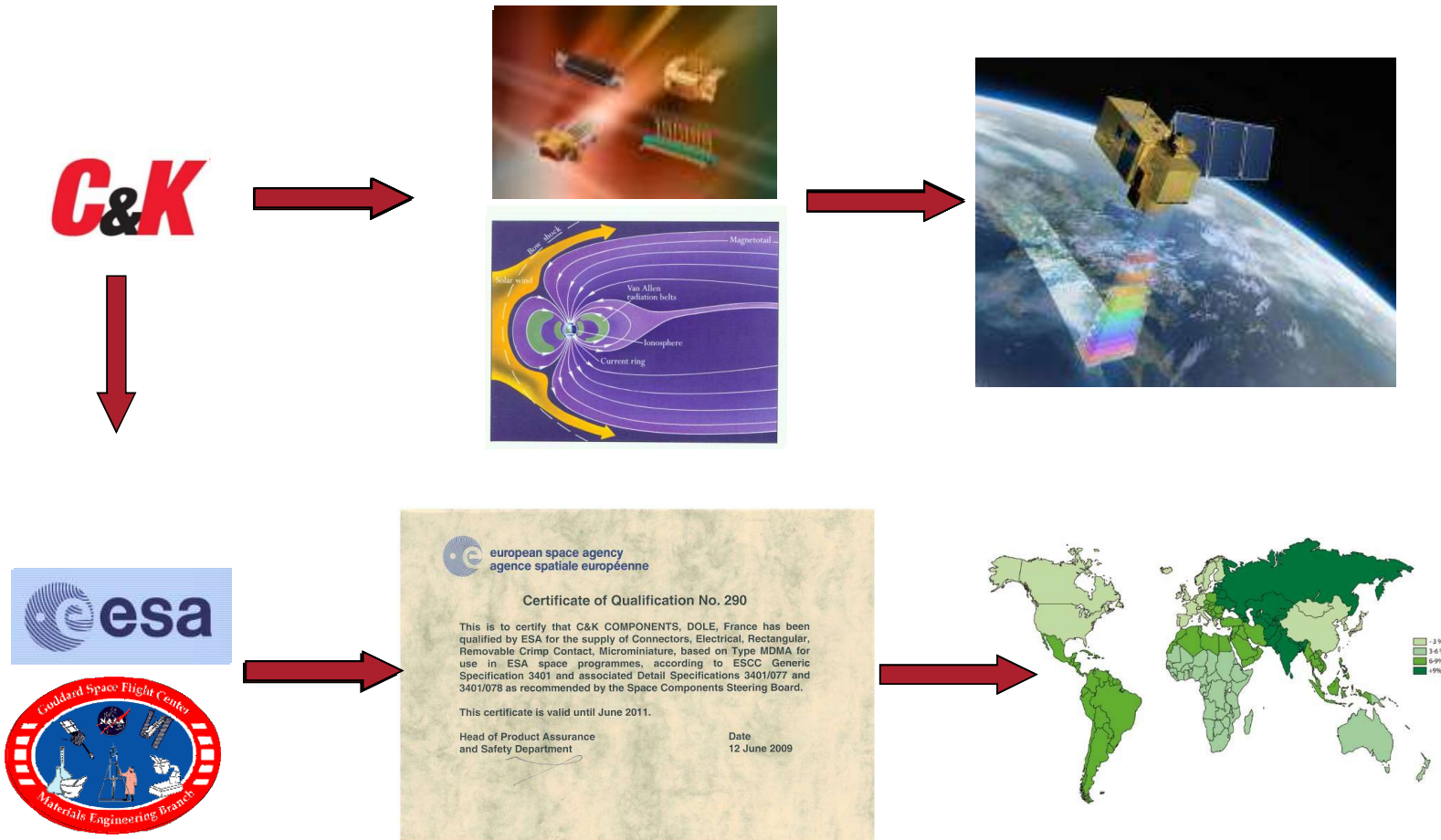


Custom Designs. (CDRI)

In House design development under request.



The way C&K do business in the Hirel world



HI REL : Key Partners :

Main customers and Distributors *(more than 240 Customers WW):*

EUROPE:

AIRBUS DS – THALES – OHB - ALTER - TESAT – RUAG – SAFT.....

INDIA:

ISRO - SAC – SOLECTRON – ASTRA MICROWAVE.....

ASIA:

NEC – MITSUBISHI – CHINA Space Institutes....

USA:

LORAL – BOEING - ITHACO – MDA – NORTHROP GRUMMAN

RUSSIA:

ISS RESHETNEV – NPO LAVOCHKINA



Frequency Electronics, Inc.



NEC TOSHIBA Space Systems, Ltd.

HI REL : Key Partners :

Space Agencies :

EUROPE:

ESA (European Space Agency) - CNES (France)

INDIA:

ISRO (Indian Space Research Organisation)

USA:

NASA (National Aeronautics and Space Administration)

MIL (US Department of defense)

CHINA:

CNSA (China National Space Administration)

JAPAN:

NASDA (National Space Development Agency)

JAXA (Japan Aerospace Exploration Agency)

RUSSIA:

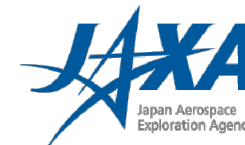
RKA (Russian Space Agency)



French space agency CNES



РОСКОСМОС



Japan Aerospace
Exploration Agency

AIRBUS Defence & Space – Master Supplier



Airbus Defence and Space
Anchorage Road, Portsmouth, Hampshire,
PO3 5PL, UK

C & K COMPONENTS SAS
Arlington Square, Batiment B
2, Boulevard Michaël Faraday - Serris
Marne la Vallée
Cedex 4 77716
France

For the attention of:
Gilles Parguey
gilles.parguey@coactive-tech.com

Ref:jrh/DH/100414/C&K

30 June 2014

Supplier Evaluation Review 2013 - C & K

COMPONENTS SAS

Dear Mr. Parguey,

Every year Airbus Defence & Space conducts a formal supplier evaluation review, and in the scope of this Supplier Evaluation & Development (SED) process, we are pleased to share with you the evaluation of your 2013 performance. The attachment shows the summary of the results for the items supplied during this period.

The review itself is summarised across 5 key parameters (Logistics; Commercial; Technical; Customer Support; Quality) each regarded with equal importance.

As an indication, a rating of A denotes a consistently high level of achievement; B a wholly acceptable performance; C general compliance with some shortfalls in performance requiring improvement; D denoting an operation in need of significant improvement to meet Astrium requirements. Although it is noted that we have raised the threshold value slightly for 'B,' the performance indication remains valid, focusing on the areas in need of improvement and reflecting the aim for continuous improvement. This year the overall performance alphabetic rating (Global results) is set to equal the lowest of the ratings of the measured criteria, serving to correctly highlight any need, or opportunity, for improvement.

The evaluation is provided as feedback for positive use as a tool for improvement and development, highlighting areas both of strength to be built upon, and weakness to be targeted for action.

Once more a year of commendable performance for C & K, showing a further consolidation with overall score increasing again, and deservedly achieving the 'Master Supplier' A rating. The Logistics rating has improved to near-perfection, and Commercial Technical and Customer support evaluations have all been noted as sustained 'A's at a good level. The rating in quality, too, has improved from last year's 12.7 to this year's 16.1 - assuring C & K of 'A' in this category, and therefore the overall 'Master Supplier' status. We look forward to a further year of excellence, and true supply partnership. As always, Dick Holland and Sébastien Calvet, as your responsible Commodity Manager and Quality Survey Leader, will continue to work closely with you to develop any action plans to support further improvements.



Airbus Defence and Space
Anchorage Road, Portsmouth, Hampshire,
PO3 5PL, UK

To improve the criteria scorings still further for the future, we are continuing to work on identifying any appropriate actions which we could discuss during a more detailed debrief of this year's SED result and for which we will shortly contact you to arrange a mutually convenient date and time.

Please accept our assurance that this assessment is maintained in the strictest confidence at Airbus Group level.

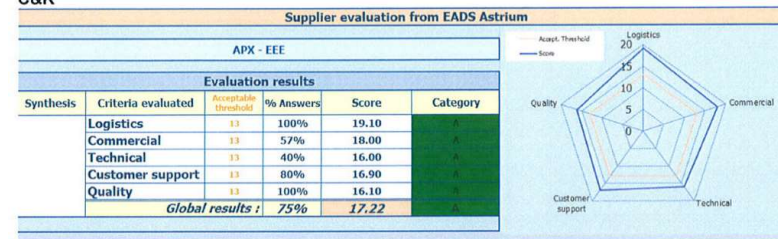
Any issues resulting from this evaluation should be addressed to the Commodity Manager, Mr. Dick Holland, Tel: +44 23 9270 5922 in the first instance.

Yours sincerely,

Mr. Christian Carlotti
Head of Strategy, Partnership and Supply Management
Parts, Materials and Processes

Dr. Achim Köder
Manager EEE Purchasing (Tesa)

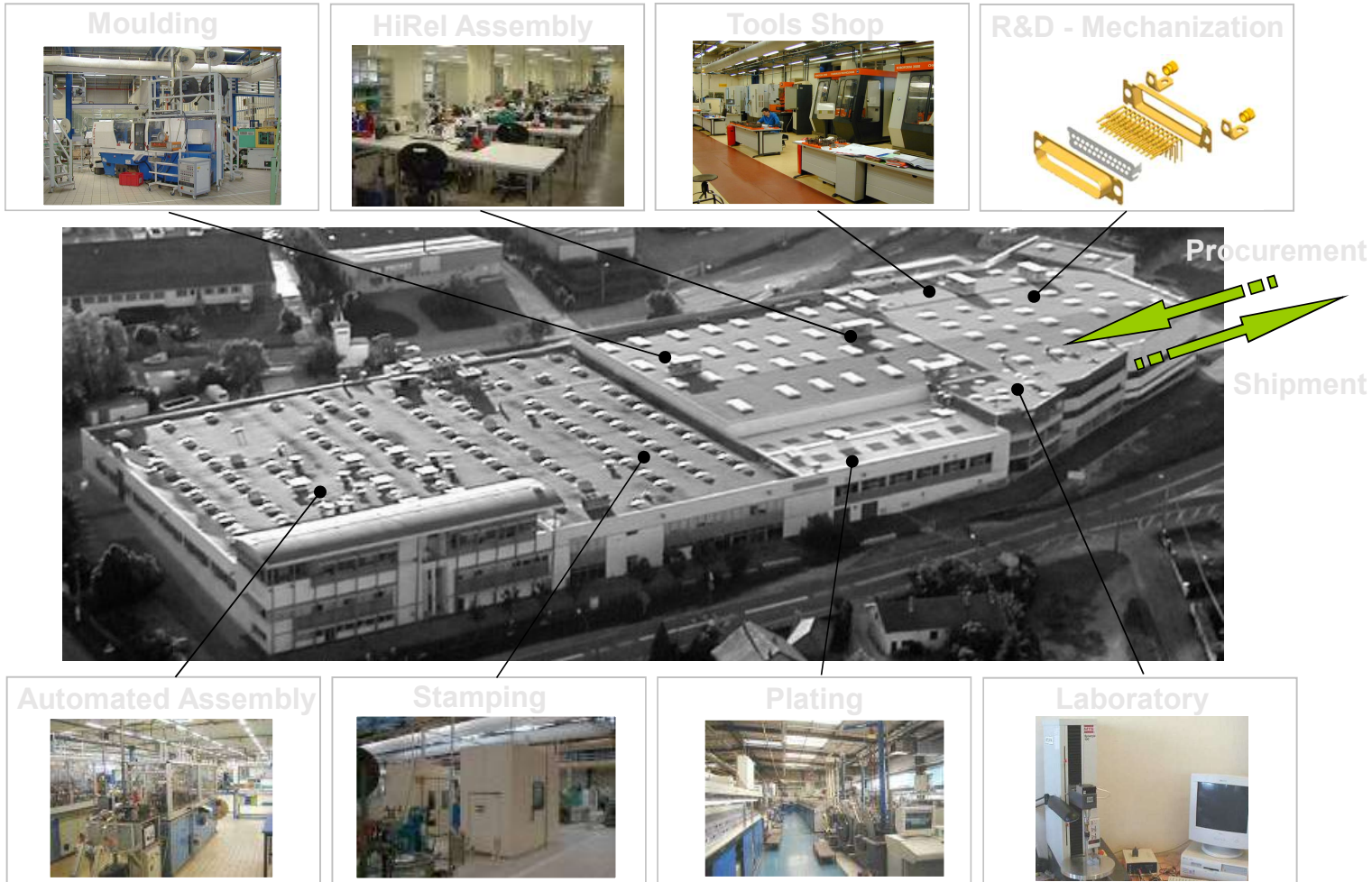
C&K



C&K : EADS / ADS Master Supplier in 2007, 2008, 2010, 2013, 2014, 2015, 2016...



Dole Manufacturing Plant Details.



Dole Internal Laboratory

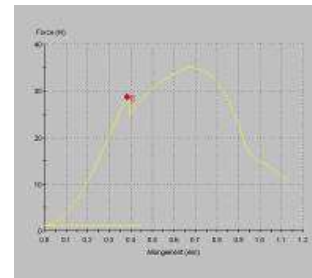
Temps



Forces deflection



LAB Report and LAT. Cross sections



Shocks



Vibration



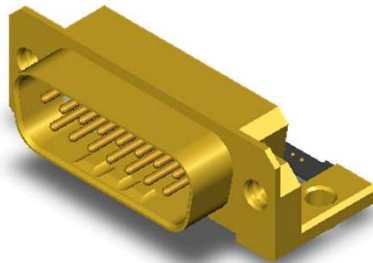
Salt bath




*Life cycles
Mating / Unmating*



-
- ***C&K Space Grade Rectangular Connectors***
 - ***C&K Available new Products***
 - ***New products under development***




C&K : ESCC / ESA qualified products.




ESCC QUALIFIED PARTS LIST

REPO05

Updated 15 April 2014



Document Custodian: European Space Agency - see <http://spacecomponents.org>

Types covered by similarity:		Remarks:				
Procurement Specifications		Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic ESCC 3401		C&K COMPONENTS Dole France	Qualification	CNES	Feb 1981	
Detail ESCC 3401/001			Extension	CNES	Jun 1983	
3401/004			Extension	CNES	Sep 1986	
3401/022			Extension	CNES	Oct 1988	
3401/040			Extension	CNES	Jun 1989	
3401/072			Extension	CNES	Sep 1991	
3401/080			Extension	CNES	Apr 1994	
Characteristics:			Shell Size: E, A, B, C, D, F	Extension	CNES	Jan 1997
Range of Contacts:			9, 15, 25, 37 and 50 size 20 contacts for standard density layout 3693 to 6968, 5983 to 47603 combined contact arrangements 15, 26, 44, 62, 78 and 104 size 22 contacts for high density layout	Extension	CNES	Jan 2000
Mounting Type:			Blank: standard mounting holes; Y: floating mount; E: captive nuts	Extension	CNES	Apr 2003
Range of Connectors:	3401/001: Variants 01 & 02	Extension	CNES	Aug 2005		
Range of Contacts:	3401/004: Variants 01 to 25; 3401/022: 01 to 95; 3401/040: 01 to 17; 3401/080: 01 3401/072: Variants 01 to 14, 25 to 39, 46 to 55, 61 to 65, 72, 75, 76 to 80	Extension	CNES	Aug 2007		
Termination contacts: solder bucket, straight PCB, 90° PCB		Extension	CNES	Sep 2009		
Gold-plated non-magnetic coating		Extension	CNES	Aug 2011		
Coaxial contact arrangements: 3401/004 variants 01 to 25; Power contact arrangements: 3401/040 variants 01 to 17		Extension	CNES	Aug 2013		
Operating Temperature Range (°C): -55 to +125						
		CONNECTORS, ELECTRICAL, SOLDER AND WIRE WRAP CONTACTS, RECTANGULAR RECEPTACLE AND PLUG, BASED ON TYPE D*M	Current Validity of Qualification		Page	
			Certificate	Valid Until	02-01	
			71 P	September 2015	001-1	

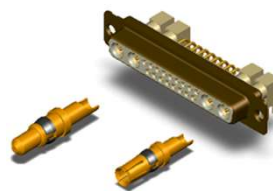
Types covered by similarity:		Remarks:				
Procurement Specifications		Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic ESCC 3401		C&K COMPONENTS Dole France	Qualification	CNES	Feb 1981	
Detail ESCC 3401/002			Extension	CNES	Jun 1983	
3401/005			Extension	CNES	Sep 1986	
3401/020			Extension	CNES	Oct 1988	
3401/021			Extension	CNES	Jun 1989	
Characteristics:			Complete range defined in the corresponding Detail Specifications are qualified Shell Size: E, A, B, C, D, F	Extension	CNES	Sep 1991
Range of Connectors:			3401/002: variants 01 and 02	Extension	CNES	Apr 1994
Range of Contacts:			9, 15, 25, 37 and 50 size 20P contacts for standard density layout ** Accepts wire sizes: AWG # 20 to 24 (standard bucket: variants 01 and 02) per 3401/005	Extension	CNES	Jan 1997
3401/005: variants 01 to 08			AWG # 26 and 28 (reduced bucket: variants 03 and 04) per 3401/005	Extension	CNES	Jan 2000
3401/021: variants 01 & 02			AWG # 18 and 20 (large bucket: variants 01 to 05) per 3401/005	Extension	CNES	Apr 2003
3401/022: variants 01 & 02	15, 26, 44, 62, 78 and 104 size 22** contacts for high density layout ** Accepts wire sizes AWG # 22 to 26 (standard bucket: variants 07 to 08) per 3401/005	Extension	CNES	Aug 2005		
Mounting Type: Blank: standard mounting holes; Y: floating mount; E: captive nuts		Extension	CNES	Aug 2007		
Gold-plated non-magnetic coating		Extension	CNES	Sep 2009		
Connector Saver: For usage with above connector range		Extension	CNES	Aug 2011		
Operating Temperature Range (°C): -55 to +125		Extension	CNES	Aug 2013		
		CONNECTORS, ELECTRICAL, CRIMP CONTACTS, RECTANGULAR RECEPTACLE AND PLUG, BASED ON TYPE D*MA	Current Validity of Qualification		Page	
			Certificate	Valid Until	02-02	
			72 P	September 2015	001-1	

C&K : ESCC / ESA qualified products.

D*Sub.



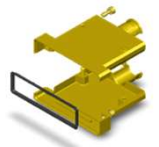
9 to 104 Way
3401 - 001
3401 - 002



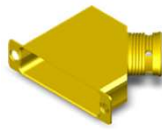
Coax / Power Contacts
3401 - 004
3401 - 040



Savers Combo
3401 - 080



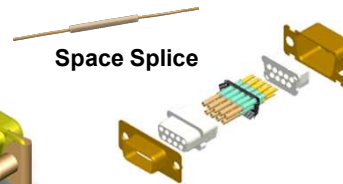
D Sub Backshells
3401 - 022



Antist. Dust Cap
3401 - 022



Fast Locking
3401-085



Space Splice

D*J Filtered

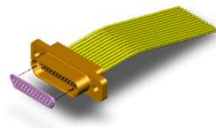
ESA Specification Number

- 3401-001 : D*M
- 3401-002 : D*MA
- 3401-004 : Coax D*M
- 3401-005 : D*MA Crimp cts
- 3401-020 : Savers connectors
- 3401-021 : Savers contacts
- 3401-022 /072 : Accessories
- 3401-040 : Power cts D*M
- 3401-080 : Combo Savers
- 3401-085 : Fast Locking
- EPPL II : D*J Filter / Space Splice

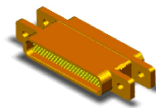
MDM.



Connectors
3401-029



MDMA (Crimpable)
3401 - 077
3401 - 078



Low EMC Savers
3401 - 041

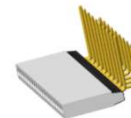


Accessories

- 3401-029 : MDM Connectors
- 3401-032 : MDM Accessories
- 3401-041 : MDM Savers connect
- 3401-077 : MDMA Connectors
- 3401-078 : MDMA Contacts
- 3401-087: MicroD backshells

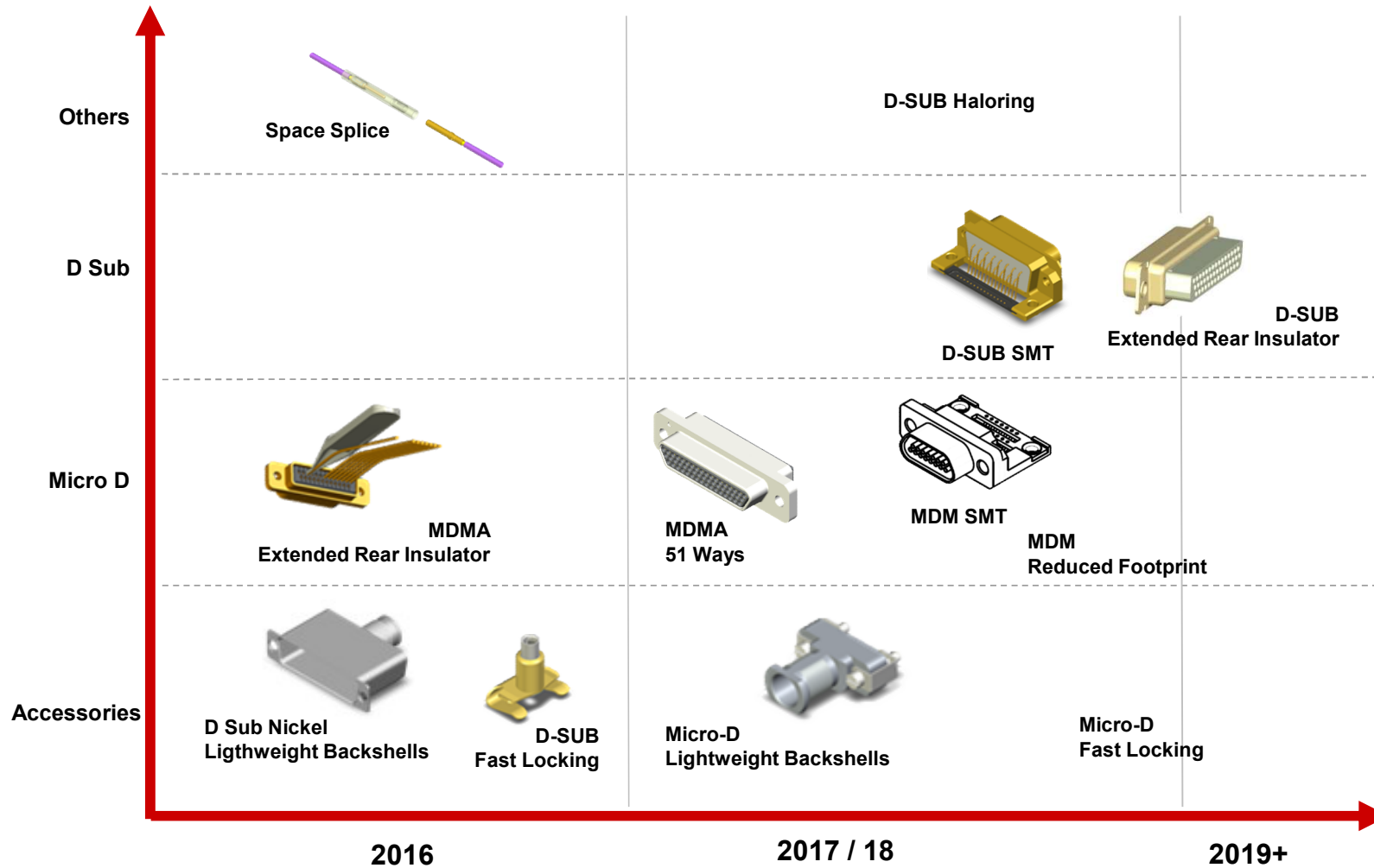
MTB 1.

Connectors / Harnesses Up to 81 ways
3401-031

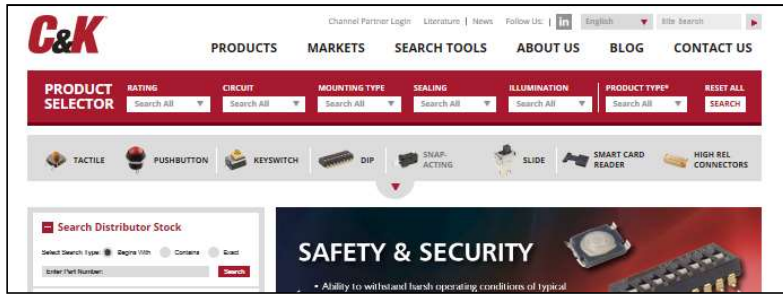


- 3401-031 : MTB1 Connectors

Hirel Product Roadmap



C&K Web Site : www.ckswitches.com



High Rel.Connectors

Choose product type

SERIES	DESCRIPTION
Space Splice	One way connector for linking 2 wires with removable contacts. Using D*MA composite contact technology Low residual magnetism Low residual engaging High radiation and temperature resistance (PEEK material)
D*M Standard Density	Compliant to ESA/ESCC 3401-001 Specification Multiple contacts configuration: Solder Cup, 90° bent, Straight PC, Wire-wrap Available from 9 to 50 ways Contacts installed in factory
D*M High Density	Compliant to ESA/ESCC 3401-001 Specification Multiple contacts configuration: solder cup, 90° bent and straight PCB contact Available from 15 to 100 ways Contacts installed in factory
D*M High Density 104 Contacts	Compliant to ESA/ESCC 3401-001 Specification Solderable PCB terminations Available with or without brackets High density layouts
D*MA	Compliant to ESA/ESCC 3401-002 and 3401-005 Specifications Removable contacts technology Standard and high density available (from 9 to 104 ways)
D-Sub Savers	Compliant to ESA/ESCC 3401-030 and 3401-021 Specifications Savers for D*MA and D*M connectors Standard and High density available (all sizes from 9 to 104 ways)
D*M - Coaxial and Power Contacts	Compliant to ESA/ESCC 3401-004 and 3401-040 Specifications Coaxial contact up to 15GHz Power Contacts from 10 to 40 A Solder or crimp Straight or 90° PCB termination

Download Catalogue data

3401-001 D*M Standard Density

<p>Features/Benefits</p> <ul style="list-style-type: none"> ▪ D*Sub Connector Type ▪ Contacts installed in factory ▪ Multiple contacts configuration: Solder Cup, 90° bent, Straight PC, Wire-wrap ▪ From 9 to 50 ways 	<p>Typical Applications</p> <ul style="list-style-type: none"> ▪ Payloads PCB ▪ Launchers ▪ PCB Test
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Connectors with solder type or wire-wrap type termination contacts size 20 inserted into one-piece insulators.

Termination types available:
- Solder Bucket terminations
- Straight PCB solder terminations

C&K Hirel Catalogue Available



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Many thanks for your attention

gilles.parguey@ckswitches.com