



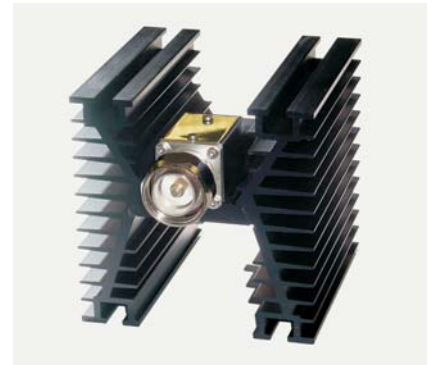
40 YEARS

INSIDE CONNECTIVITY MARKET



Some of the company steps and achievements

● Since 1978

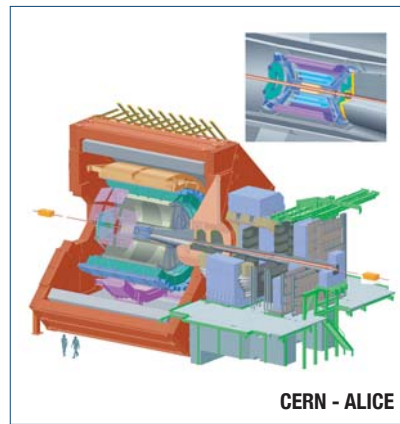
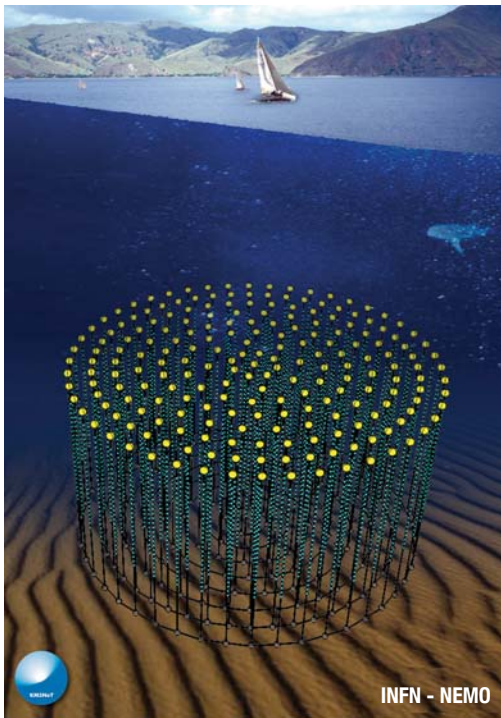


● Since Nineties, solutions with multi-wire products:



From the initial resale activity of connectors and cables, through outsourcing manufacturing of assembled cables, up to designer and manufacturer of special connectors, harnesses, customized solutions used in different application areas.

● Since 1990 supporting several projects of Research Institutes



● Since 2000s



Company History and new Targets

CPE is a family company founded in 1978 and established in Milan, Italy.

The business started as trading company of connectors and cables, addressing defense, and telecommunication.

After few years of activity It has been natural consequence moving from trading company to manufacturing company, pursuing high specialization in harnesses assembly and connector production. As the spirit of CPE ITALIA has always been and still is to be customer «allied», the founder sustained the growth of the company by opening new production sites around the globe.

CPE ITALIA is now a Group of about 400 people with production facilities in Brazil, China, Italy, Mexico, Romania, branch offices in Nord America and India, headquarters in Milan.

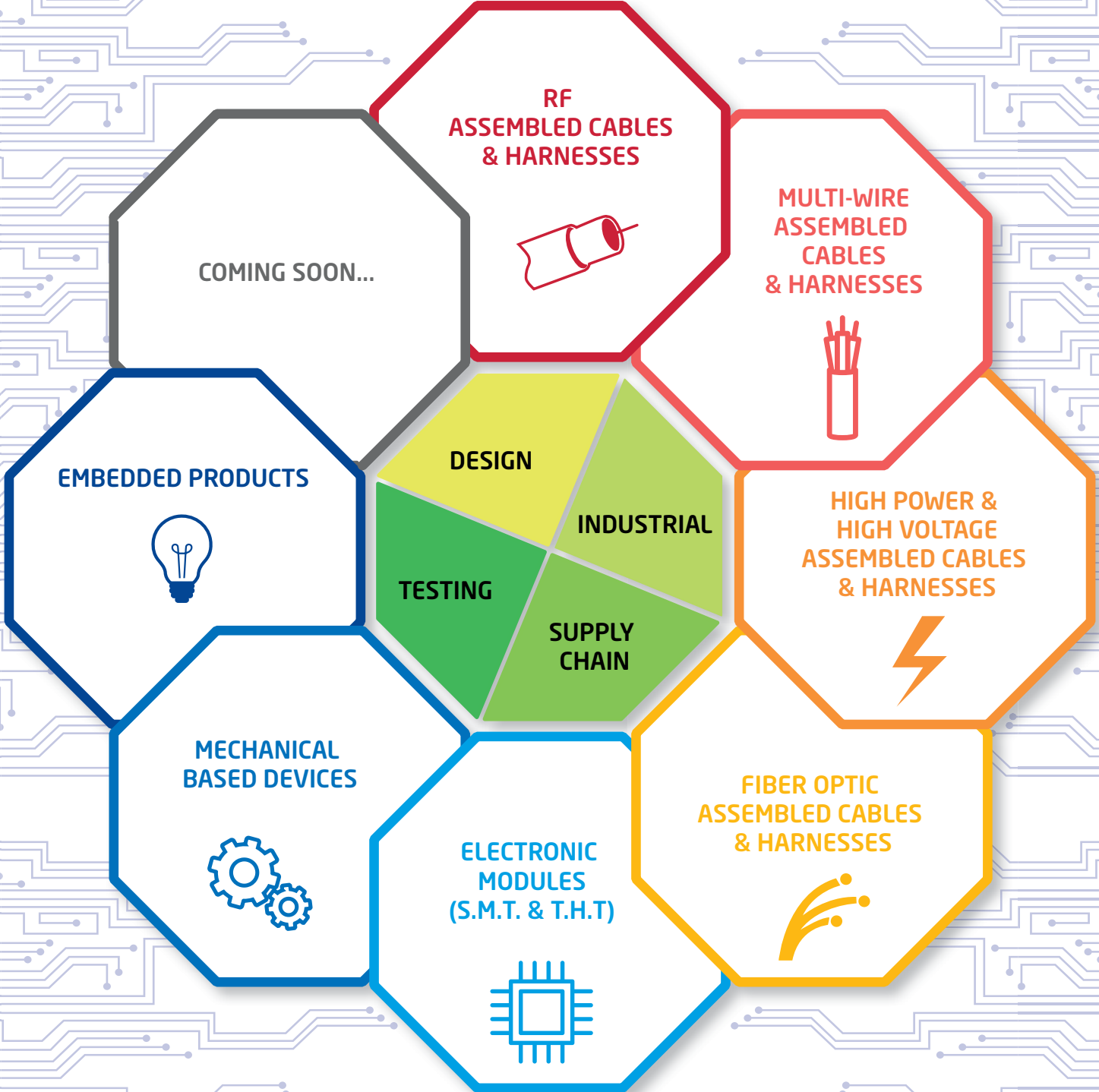
Extensive knowledge in sectors such as Defense, Broadcasting, Communication Infrastructure, Medical, Transportation, Nuclear, Oceanographic Installations.

It is CPE main focus to support any customer need by designing and developing tailored solutions



We like to imagine our behavior and capability results similar to these of the well known
"Tricolor Arrows" pilot team:

| | | |
|--------------------------------|--------|--|
| attentive to the rules | —————> | guide lines, organization and discipline |
| total security as top priority | —————> | quality |
| show for attendance | —————> | innovation and results expected by Customers |





DESIGN

CPE ITALIA GROUP has its own design capability to develop new products as well as customized solutions even when implying a very high level of complexity such as it can be required by Military / Aerospace applications.

Its design Dptm can take advantage of specific tools: CAD 3D / CAD CAE software along with a sophisticated INVENTOR 3D & CST tools, the attitude to maintain a two way dialogue with Users, a complete set of special devices to test prototype technical characteristics and to define its preliminary / theoretical service span (MTBF: mean time between failure).

Also, thanks to specific experience of his Partners, CPE ITALIA Group can offer a very huge range of solutions to the typical connection problems.



INDUSTRIAL

The present global production system must take into serious consideration several parameters that are leading to an efficient result, no matter which is the involved commodity sector.

Trained people, appropriate tools and machinery, safety environment, operating instructions are just some of the unavoidable ingredients to obtain good products at a reasonable cost.

But this overall scenario means investments.

CPE ITALIA Group has always been very sensible to this peculiar aspect.

Results have been fully satisfactory in term of quality, of cost but especially in term of safety.



TESTING

The process of measuring products and related performances is foreseen either to certify new prototypes or to verify mass production items.

These operations are performed according to established procedures issued by CPE ITALIA Group Quality Dptm. All facilities / plants are equipped with the necessary tools to verify all items they are releasing.

Testers, analyzers, climatic chambers, etc. are all available for final testing.

Moreover, the Design Lab is equipped with special tools to predict / verify the product behavior, especially when they might operate in some difficult environment (i.e. salty water, under thermal or mechanical shocks, high pressure, polluted air, etc.)

Upon Customer request, CPE ITALIA Group also supplies a test report along with each product (or product lot)

Finally, CPE ITALIA Group is available to provide to Customer a test service on products of other Manufacturers.



SUPPLY CHAIN

This subject is crucial for any company.

Therefore, CPE ITALIA Group has appointed a special team aiming:

- >> to monitor inventories (both, stocks and WIP materials) vs Customer requirements and production plans.
- >> to check Supplier lead times and their punctuality in deliveries.
- >> to take the appropriate actions in case of emergencies in order to assure the continuity of production activity.



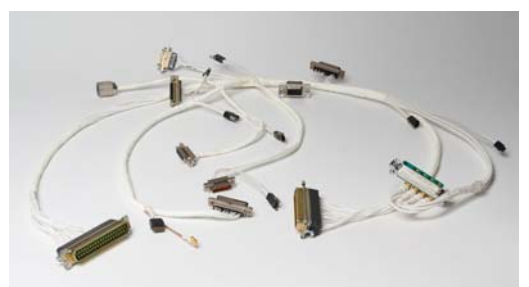
ASSEMBLED CABLES AND HARNESSSES

CPE ITALIA Group with its WW plants manages an high volume of assembled cables and harnessses.

As a leader in custom cabling solutions and by reflecting on its products the company quality commitments, CPE ITALIA Group strive to offer innovative features suitable to solve Customer problems.

They all are based on advanced and quality certified technologies. Its offer of normal and hybrid assembled cables can be categorized in several families among which:

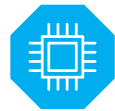
- >> Assembled Coaxial cables & harnessses
- >> Precision RF assembled cables from 0 Ghz to 65 Ghz
- >> Coaxial & precision RF assembled cables both, in phase & matched phase
- >> Wave guides
- >> Semi-rigid assembled cables, straight or bent according to Customer needs
- >> Multi-wire assembled cables
- >> Harnessses with special shape and fastening, implemented on a 1:1 table
- >> Power assembled cables & harnessses
- >> Grounding assembled cables
- >> High voltage assembled cables
- >> Fiber optic assembled cables
- >> Assembled cable & harnessses with IP_{xx} protections
- >> Waterproof cable harnessses up to 500 Bar



Not only assembled cables



CPE ITALIA Group, thanks to its continuous growth, to its experience on electrical /electronic /mechanical subjects and pursuing the ambitious to offer to Customers a unique interface to deal with, has enhanced its product offer with electronic modules, mechanical based devices and embedded assemblies.



ELECTRONIC MODULES

The CPE ITALIA Group has the proven ability to assemble printed circuits in low and high volumes.

SMT, selective welding, specialized manual welding and automated assembly are production methodologies we control to meet our Customer requirements.

The CPE ITALIA Group capability can meet the requested specifications, no matter should they imply pin mounting through hole (PTH), surface mounting Technology (SMT), rigid fine pitch or micro BGA.

Prior its implementation, design is checked to quickly verify that no critical conceptual details would prevent an efficient production process.

CPE ITALIA Group applies own severe testing and inspection tools, such as 100% automated and visual inspection, flying probe / TIC, the functional tests and the environmental stress tests to ensure the final outcome.

Our engineer team has the experience to help Customer in fine-tuning its proposed design and to guarantee high quality production results.

Final production will be obtained by using our equipments and / or the machinery of our strategic, qualified Partners.





MECHANICAL BASED DEVICE

Connector main characteristics rely on the capability to convey signals, wave or electrical levels.

Appropriate electrical components allow the achievement of the desired results.

However, a mechanical structure must be foreseen to contain these components, to protect them, to reach an optimization of their functionality and layout.

CPE ITALIA Group is holding this knowledge in its design group and it has invested in the necessary tools and machinery to produce them on in its own.

>> Coaxial connectors.

Since 2004 CPE ITALIA Group designs and manufactures coaxial connectors to offer products with standard interface, excellent technical characteristics and at a quite winning price.

The design team uses an advanced «CST» software tool to analyze the connector performances and by mean of a fitted lab it implements the related prototypes.

This same software tool allows to define the mechanical shape of the outside connector cover depending upon the desired electrical parameters to be obtained (transmission linearity – power loss – signal integrity, etc). Useless to say that human interventions based on measurement values, experience, additional safety values are not only admitted but quite often effective.

>> Multi-way connectors.

Starting from 2009 CPE ITALIA GROUP has undertaken the design and manufacturing of customized multi-way connectors to be used on specific applications.

Our design and engineering team uses the latest 3D technology to quickly develop solutions, related drawings and prototypes.

For connectors to be used under critical conditions, additional checks are foreseen.

The most significant comes from the vibration test results since the “shell” in which contacts are sealed is made by different materials such as metal, plastic, silicone based products.

>> Mechanical structure.

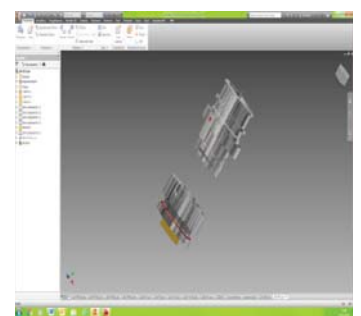
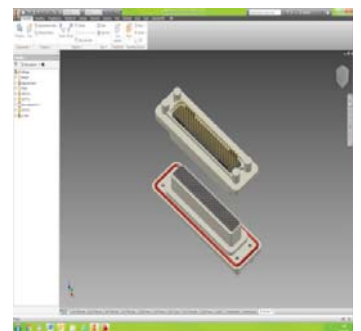
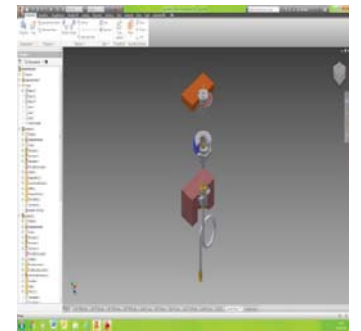
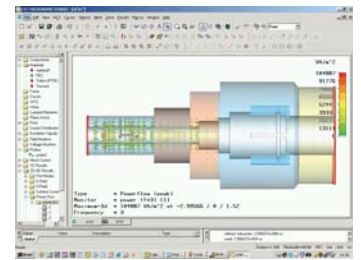
This mechanical structures often appears to be a cage or a cover or a rack and it might be considered as trivial part of some very complex device.

Starting from 2010 CPE ITALIA Group has decided to operate on this field.

Considering that it is not just a cover or else but a real support to maintain unaltered electrical characteristics (i.e. - insulation –magnetic field – impedance value - etc) and to safeguard the whole component operating in some harsh environmental conditions, the care with which it must be designed becomes extremely important.

Two additional considerations:

- >> Machinery to produce them are very special and they need appropriate drawings and special set-up attention.
- >> Dimensions and surface treatment of the obtained products are tested. Moreover, the prototypes developed by CPE ITALIA Group are also submitted to special tests when fully populated.





ABOUT CPE ITALIA GROUP MACHINING SHOP

This recently (2012) set-up department has been conceived to produce individual parts of components and assemblies whose peculiarities do not allow to easily find external qualified suppliers

Since that time, several machines have been made operational, thus allowing an effective production planning. (aside, pictures of few of them).

The selection of these equipments has been very cautious due to the expected and needed technical characteristics of the manufactured sub-components:

- >> Dimensions
- >> Shape
- >> Pitches
- >> Angles
- >> Etc.

Out-coming items are all checked and measured according to engineering drawings; galvanic treatments are inspected as well.





EMBEDDED PRODUCTS

As the word itself implies, an “embedded product” is the association of functionalities (mechanical, electrical, electronic and up to software) able to develop their specific actions and to generate a peculiar service in within a much more greater system.

Customer requirements, no matter if operating in Military or Industrial environments, but all concerned with life cycle of products, have pushed CPE ITALIA Group up to acquire a solid and global knowledge of embedded systems with all its requisites, specifications and applicable regulations.

Procedure steps must be (and they are) quite simple and clear:

- >> Two way dialogue with Customers starting from the purpose of the product and the environmental characteristics
- >> Preliminary Design with some severe checks on: feasibility, reliability, serviceability
- >> Session with Customer to verify theoretical parameters and with an open mind to changes and/or modifications
- >> Implementation of prototype along with its complete documentation
- >> Final Customer approval

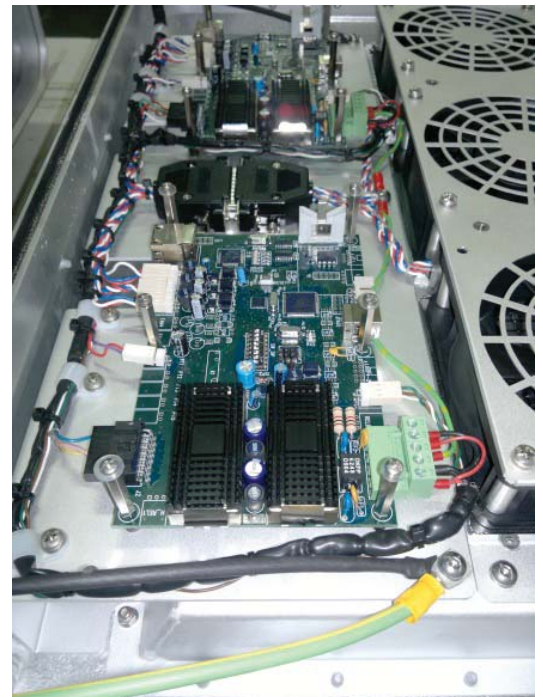
CPE ITALIA Group, having developed several capabilities and having invested in new technological machinery (highlighted in other page of this document) can offer an overall service assisting Customers from the specifications of a product up to its production and testing.

Starting from its consolidated skill in design activity and by using advanced tools such as CAD 3D and CAD CAE for mechanical and electronic systems respectively, CPE ITALIA Group designs and produces personalized products for a variety of applications ranging from military to transportation, from telecommunication to medical, from aerospace to broadcasting market segments.

The today experience tends to use electronic circuits whenever possible due to its reliability, flexibility, easy-to-use, testability v/s other components (especially mechanical ones)

CPE ITALIA Group offers an advanced and a very reliable PCB range as well as Embedded Solutions that can be conceived for a variety of applications.

Because of its gathered experience and by relying on an very flexible structure CPE ITALIA Group by constantly assuring assistance, cooperation and availability can become a valuable partner to Customers in developing a whole Embedded Product.



Customer satisfaction and success will be our greatest reward.

JUST BELOW, THE IMAGES OF SOME PRODUCTS DESIGNED BY CPE ITALIA GROUP:





CPE ITALIA IS USING VARIOUS CONTACT TYPES TO MANUFACTURE ITS CONNECTORS. THE PICTURES BELOW SHOW THE CONTACTS TYPES PRODUCED BY CPE ITALIA AND USED ON ITS PRODUCTS.



STANDARD CONTACTS

Contacts for coaxial connectors or according to Mil-C-30929.



LAMELLA CONTACTS

Lamella contacts are grooved connection based upon one or more stamped lamination bands. Each lamella individual piece provides a plurality of contact points, thus ensuring a very high contact reliability along with excellent conductivity properties.



HYPERBOLOID CONTACTS

This technology comes from some military application for which harsh environments must not affect device security and reliability. Contact sleeve shape are then conceived in such a way to roll up the pin by means of a multi-wire springy cage having an hyperboloid shape that assures a number of contacts even when the device is under shock or vibration stress.



SILK SPRING CONTACTS

The silk contact offers the highest number of contact surfaces. The spring wires are mounted individually and joined optimally to a turned carrier. The individual spring wires contact and cushion each other.



LOAD SPRING CONTACTS

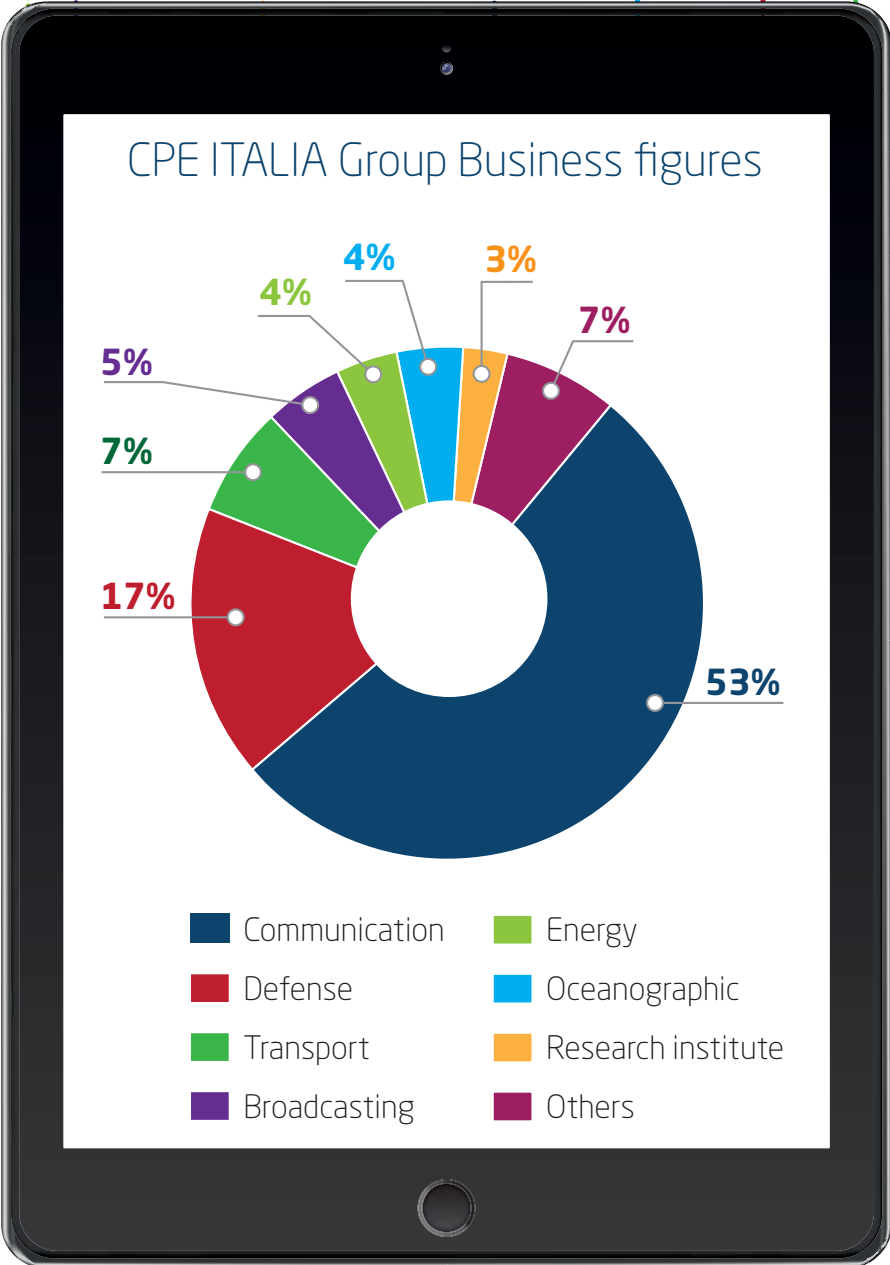
Load spring contacts are designed to mate with either gold plated PCB pads or with flat contacts in docking/cradle applications. It allows charging function, data transfer or programming interface to a portable device.



CONTACTS FOR MICRO E NANO CONNECTORS

The twist pin contacts is use to realized Micro-D & Nano-D connectors according to Mil-C-83516 & Mil-C-32139. This contact is ideal for aerospace, military and medical.







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