Reduced to the best.

Customized Computer Systems

Edition 2013
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Prime Cube® is Premium.

Performance means concentration. It is essential to leave out the irrelevant and only concentrate on things that count. Uncompromisingly we have realized this philosophy with our product brand Prime Cube.

The innovative generation of computers follows an intelligent and highly flexible modular principle – each system is tailored to exactly suit the customers’ requirements. Prime Cube is the visible expression of our technological competence and sums up our long-term experience in the world of computer systems. And it is a prime example of the innovative strength of MSC Tuttlingen with its developers, engineers and designers.

However, Prime Cube not only excels by innovation and performance but also by a unique and strong brand personality reflected in every detail. Knowing what really matters: the precondition for intelligent system solutions.

The developers, engineers and designers of Schubert System Elektronik keep adding new chapters to this success story in order to assist the customers with their future tasks.
Prime Cube.
The best solution for computer-based applications.

Only if your computer system completely relieves you it is the right one. This is the Prime Cube principle. It is our claim to offer you from the start the best solution for your special requirement: Customized Computer Systems. These are high-quality, innovative computer systems which are assembled from the modules of the Prime Cube Modular System to the Full Custom Design for any individual requirement.

With their modern, ergonomic design they set standards in terms of product aesthetics and user-friendliness. Prime Cube is the brand for demanding companies from all industries trusting in German Engineering. The most efficient solution for any computer-based application. Prime Cube. Reduced to the best.
We are Geared to Values. Not to role models.

Prime Cube stands for reliable values resulting from our long-term experience in the world of computer solutions. They motivate and characterize all services from our company and justify our brand promise: Reduced to the best.

**Simplicity**
How complex your requirements may be – the best solution makes everything easier. With efficient, practice-oriented computer systems we dissolve complexity and create performance potentials. In the project phase we relieve you by short distances, fast information and uncomplicated advice.

**High Quality**
German Engineering is the key to the high quality of our systems. Precision, quality and thoroughness determine our work at every step. To ensure at all times that your computer-based applications work exactly the way you thought they would.

**Reliability**
We lay great emphasis on reliability and a long product life-cycle. Fail-safe components immune to interference and the long-term availability of our sturdy units for sustained process safety are our standard. As well as a customer support you can rely on for years.

**Individuality**
From the application of the Prime Cube Modular System to Full Custom Design – we develop our computer systems perfectly tailored to your needs. With comprehensive understanding and an analytic view of the task and its implications. Only by this approach some solution will be the right solution for your requirements.

**Innovation**
As we develop electronic solutions technological innovation is deeply rooted in our tradition and strictly geared towards customer use. Just like the Prime Cube Modular System and the principle to always achieve innovation on the component level. Therefore, you can always participate in the technological potential of your existing system application.

**Design**
Our modern, functional and ergonomic product design sets standards. Units that not only convince by their design but also by their easy and intuitive use. With our products form always follows function. For comfortable use and distinct identity.
Complete Solutions
We develop complete solutions consisting of hardware plus software plus mechanics, precisely tuned to their immediate environment and users. We implement our precisely designed and exactly fitting computer systems and components with the professional know-how of the system integrator. Concentrated competence from task to solution.

Added Value Guarantee
We comprehensively analyze your needs and consider the respective task in its context — thus allowing for solutions with a real added value: more flexibility in the system defaults, more resources for future system adaptations, more cost-efficiency and more time for your own core competence.

Investment Security
Intelligent solutions are sustainable. Our products convince by functional compatibility and user-friendliness as well as by easy maintenance and long-term availability. For all products, we guarantee you five years of supply in terms of form/fit/function. You profit from a quick return on investment, a long and reliable product life-cycle and a competent partner always at hand for you.

Process Safety
Precision and reliability are key to system safety. This is why our solutions are safety-tested and certified. By means of optimized electrical, constructional and thermo-technical measures we meet all requirements and convince by permanent system availability and high functional safety.

All-Round Support
According to the motto “keep it simple” we make things as easy as possible for you: direct and flexible full-service support from the first consultation to the delivery and installation of your system solution. Even years later, you profit from our reliable service and the best future solutions with subsequent system adaptations. We concentrate on the best support so that you can devote yourself to more important tasks.

Best-Solution
Our customers being as manifold as their requirements we need great flexibility developing solutions. Just as offered by the Prime Cube Modular System. You can quite simply use standardized components or have them modified by us. And we develop the best solution for your extraordinary requirement.
Prime Cube Innovation.
HMI-solutions with latest technology.

Operating Scenario
We meet the requirements of future-orientated operating concepts by innovative multi-touch technologies with full support of gesture recognition under Windows 7, Windows 8 and Linux:
- Projected Capacitive Touch (PCT) offers unlimited movement functions
- Analogue-Resistive Multi-Touch (MFo) supports two-handed "confirmed" input activation
- Contact-free gesture recognition of moving direction in three dimensions (HALIoS)

Next Generation CPU
Scalable CPU-performance by modern processors and chip-sets, based on mini-ITX, ATX or SBC-mainboards:
- 4th generation Intel® Core™ i5 / i7 Haswell platform: ideally suited for visualization and control tasks with high graphic and CPU-performance.
- AMD eKabini: preferably for embedded operating and visualization tasks with high requirements to graphics

Industrial Control „Lifestyle“
The new Prime Cube operator panels reflect the look of smart IT lifestyle products. The system concept embodies their characteristic symbiosis of function and design:
- Look & Feel of consumer devices
- Fully embedded level glass front
- Slim, elegant housing
- Widescreen displays in 16:9 format
- Silver nanowire Touch for panel design with narrow frame

Usability & User Experience
Innovative HMs are based on principles to enhance the operation resp. use – therefore it appears logical to us to integrate suitable components in optimum design to achieve the best overall solution:
- Touch sensor technology according to operating concept
- Controller depending on type of sensor with specific parameters
- Modified operating system
- User interface as sample concept for application-specific options
Prime Cube
Product Lines.

Prime Cube A-Line.
The best solution for the attached panel PC.
The panels of this model series are designed for use in process-oriented environments. Independent of the control cabinets they can be installed precisely where they are needed as operator stations.

The best PC and terminal solution in lifestyle.
Our industrial alternatives in the look & feel of smartphone products. The panels excel by their innovative user interface, hygiene-compliant housing and elegant look allowing for harmonic integration into any machine environment.

Prime Cube E-Line.
The best solution for the built-in panel PC.
The E-Line products are especially designed for integration into all kinds of fronts or panels. The perfect mounting technology and the swiveling computer housing guarantee a high degree of flexibility for the panel installation.

Prime Cube B-Line.
The best solution for the box PC.
The systems primarily used as so-called “control cabinet PCs” offer a multitude of configuration options. The position-independent installation and versatile extensions allow for a wide range of applications.

- Mounting via flange on rear side
- Adaptation to all support arm/pedestal systems
- Angled position for ergonomic handling
- Quick adaptation of the device system to operating requirements
- The front plate layout allows to provide for special interface functions (e.g. USB, RFID) under protected IP65-cover
- Application-specific arrangement through integration of additional operating elements (e.g. buttons, emergency switches) which can be laid out individually
- High-quality stainless steel housing without bea-
dings or edges
- Ideally suited for complete encapsulation of housing acc. protection class IP65
- Available as GMP-compliant hygiene model, perfect for clean room applications (food and pharmaceutical industry)
- Cable connection in protected area, simple cable installation
- Service access supports the integrationfriendliness with front extensions or in a service case
Usability in industrial style.

- Fully embedded level glass front with single-pane safety glass for increased shock and impact strength
- Widescreen displays (16:9), also in upright “portrait format”
- Multi-touch capable capacitive touch screen (PCT) incl. LED backlighting
- Energy-efficient design
- Fanless CPU and system cooling
- Computer performance and the combination of different storage media allow for a highly flexible system adaptation
- All connections such as power supply, fieldbus and Ethernet are fed through the support arm resp. foot
- Special functions can be accessed by additional capacitive control elements via fieldbus. They can take on different RGB colors and depending on the process picture they are dimmable as active or inactive
- Further control elements or electromechanical buttons can be integrated into the glass front
- Alternative system design as PC or terminal variant
- High-quality gap-free aluminum housing
- GMP-compliant hygienic housing shape allows for easy cleaning
- Easy adaptation of the A-Line devices to all support arm or stand devices resp. of the E-Line devices into all front panels and consoles
- Encapsulated housing with protection class IP65 all round
Prime Cube E-Line.
Functionality by clever integration.

- New mounting technology allows for easy panel installation
- Due to the clever quick-fix-mounting no borings are required in control cabinets, front panels and consoles
- Type-specific shaping of cooling elements depending on computer performance
- Swift-lock-concept allows for swivel-mounted installation of computer housing (cooling element)
- Service-friendly direct access to all major system components
- Compatible design of scalable computer platforms
- Fanless system cooling, consistently in all CPU performance classes
- Type-specific power supply components for energy-efficient supply
- Modern profile for independent identity in customer’s corporate design
- Luminous TFT-displays support the ease of use by optimum viewing angle, clear readability and easy usability of touch screen
Prime Cube B-Line.
Configuration in flexible design.

- All current interfaces available, such as Ethernet, USB, COM, CAN, etc.
- Versatile options for expansion, e.g. by PCI-/PCI-Express slots, by I/O channels and fieldbus interface
- MRAM-extension for remanent data

- Selection of computer platforms, exactly customized to the application
- Scalable computer performance, from energy-efficient Atom processors to performant i5 / i7 3rd generation processors
- Specifically selected modules and cable-reduced setup for high system stability

- HDD and SDD as well as mSATA and CF-memory possible, different storage media can be combined on one system
- Storage media replaceable from outside, hotswappable, hard disks also RAID capable
- Modern, industrial system design
- Functionally shaped cooling elements for quick and efficient heat dissipation
- Optimized air circulation for performant continuous operation
- Position-independent mounting for vertical or horizontal installation
Prime Cube Customizing.
With the best strategy to your solution.

Customizing stands for adaptation or individual solution. In principle almost anything is possible. The ends to be achieved always determine the means to be selected: Reduced to the best. You will not just obtain a product from us – we think in terms of solutions. We consider all relevant criteria, give advice in systems analysis and define the most efficient implementation with you.

Whatever you need: Our flexible product range is certainly the direct way to the best solution, both for simple, smaller projects and for high-end specifications. Especially for a variety of requirements in process-oriented applications Prime Cube offers a multi-stage customizing principle with respective performance categories.

Based on the wide selection of components from the modular box of building blocks the system solution which ideally meets your requirements can be configured. The standards already cover a large part of your expectations. But you need additional features. Then we develop the suitable technical supplement for you.

Profit from our technological expertise, from decades of experience in development, design, manufacturing and application as well as from full project responsibility – our „German Engineering“.

You need a special solution? In that case this is your section. Full Custom Design stands for the completely tailor-made application.

Your idea, Your request

record task

analyze needs

develop solutions

define realisation

Elektronics
- Boards/components/systems
- Module development/embedded solutions

Software
- Operating systems/firmware/application suites
- Optimization/image and driver adaptation

Design
- Devices/housings/cooling concepts/EMC
- 3D-CAD-studies/simulation/approvals
The Prime Cube Modular System is a concept that intelligently combines system-supporting modules depending on requirements. The components and modules consistently geared to customer needs can be perfectly combined. The innovative precondition for the configuration of individual system variations – for hardware and software alike.
Prime Cube Mixed Design.
Individual adaptations.

Not all system requirements can be perfectly met with basic components alone. By Mixed Design the computers are customized, e.g. by adapting the modules, by specific function extensions or by integrating further technologies. Apart from the best individual application this procedure also offers advantages in terms of development costs and time-to-market.
Prime Cube
Full Custom Design.
Customized systems.

Example design
Operation-specific system design

Example style
Synthesis of technology, function, ergonomics

Example frontend
Free front formats in your corporate look & feel

Example system integration
Seamless integration into machine concepts

Full Custom Design means: we implement your project ideas in a competent and professional manner and in close cooperation with you. Your product as a complete solution, 100% customized – from a single source. Profit from technological know-how, from decades of experience in development, manufacturing and application and from comprehensive project responsibility – our “German Engineering”!
Prime Cube System Configurator.
The best solution options at a glance.

The Prime Cube system configurator provides a quick overview which combination offers itself as practicable and reasonable for your system and which combination cannot be realized in terms of system technology. In order to always ensure the functionality, flexibility and quality of the complete system.

CPU-platforms

<table>
<thead>
<tr>
<th>Platform</th>
<th>Designation</th>
<th>SBC</th>
<th>CXB</th>
<th>ITX</th>
<th>Terminal</th>
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</tbody>
</table>

Storage media

| MRAM to back up relevant data | CompactFlash | ☑ | ☑ | ☑ | ☑ |
| Media | mSATA | ☑ | ☑ | ☑ | ☑ |
| HDD | ☑ | ☑ | ☑ | ☑ |
| SSD | ☑ | ☑ | ☑ | ☑ |
| RAID 0 or RAID 1 | ☑ | ☑ | ☑ | ☑ |
| Mix CompactFlash/HDD/SSD | ☑ | ☑ | ☑ | ☑ |
| Mix HDD/SSD | ☑ | ☑ | ☑ | ☑ |
| Mix HDD/SSD/mSATA | ☑ | ☑ | ☑ | ☑ |

Interfaces

| Ethernet/Real-time-Ethernet | ☑ | ☑ | ☑ | ☑ |
| USB | ☑ | ☑ | ☑ | ☑ |
| RS232 | ☑ | ☑ | ☑ | ☑ |
| CAN onboard | ☑ | ☑ | ☑ | ☑ |
| I/O extension | ☑ | ☑ | ☑ | ☑ |
| DVI-I | ☑ | ☑ | ☑ | ☑ |
| VGA | ☑ | ☑ | ☑ | ☑ |

Operating systems

| Windows 7 (Prof./Ultimate) | ☑ | ☑ | ☑ | ☑ |
| Windows 8 | ☑ | ☑ | ☑ | ☑ |
| Windows Embedded Standard 2009 | ☑ | ☑ | ☑ | ☑ |
| Windows Embedded Standard 7 (E/P) | ☑ | ☑ | ☑ | ☑ |
| Windows 8 Embedded | ☑ | ☑ | ☑ | ☑ |
| Windows XP Prof. | ☑ | ☑ | ☑ | ☑ |
| Embedded Linux, Real-time Kernel | ☑ | ☑ | ☑ | ☑ |
| Performance optimization of the embedded operating system | ☑ | ☑ | ☑ | ☑ |
| Virtualization (separate operating systems on multi-core CPU) | ☑ | ☑ | ☑ | ☑ |

Other

| Reduced depth of device/installation | ☑ | ☑ | ☑ | ☑ |

All product lines can be combined with the CPU platforms on the next page. You will find detailed information in the respective Prime Cube data sheets. Contact us for further information.