TQ Medical-PC
High-end technology meets medical

The advantages of having TQ as your Medical-PC partner

Technical aspects

At TQ-Systems we are committed to a modular concept in our design of reliable and flexible technology solutions!
The demands of the medical market can be optimally realised with our modular concept, comprising carrier board and COM Express. In addition, it is also possible to meet individual customer-specific modification requirements.

Long-term availability

One of our key objectives is to offer our customers individual solutions that enable them to shape their long-term future.
Thanks to our proven, in-house obsolescence management, we guarantee the long-term availability of our products. TQ-Systems is an owner-run company independent of outside investors. Furthermore, TQ-Systems has its own development department and production facilities.

Quality assurance

The name TQ stands for technology and quality – values that form the core of our everyday activities.
With the in-house development and production of our electronic components and complete systems, we directly influence the quality of our products.
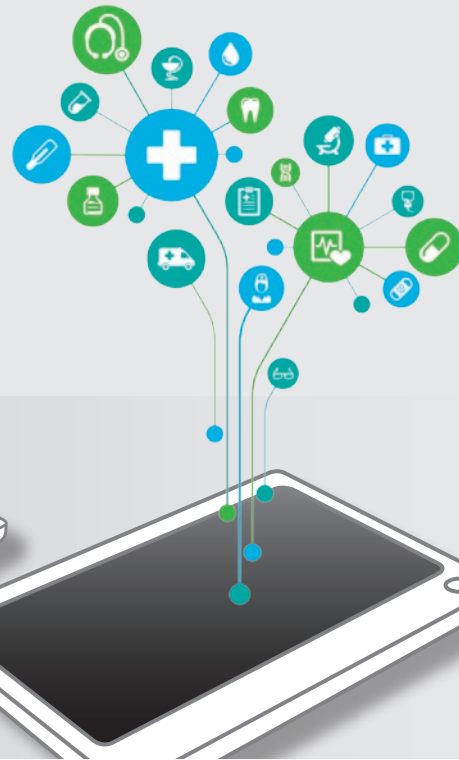
Logistics

Production and logistics – another one of our strengths!
TQ-Systems has already implemented various logistics options, e.g. our consignment warehouse. In addition, TQ-Systems offers successful logistics processes such as VMI, Konsi, Kanban and ship-to-line. This means a minimum of expensive stocks and maximum flexibility and precise quantity control.

Usability

"Good design makes a product understandable" (Dieter Rams)
In addition to outstanding technical implementation, our systems also score well when it comes to usability. Right from the concept phase, we focus on the integration of ergonomic and design principles in order to achieve maximum user friendliness.

An universally scalable system	
Available display sizes	From 15" up to 23" or even 32"
Variable performance	From Intel® Atom™ up to Intel® i7
Touch-technologies	From capacitive to resistive touch-technologies

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↘ **TQ-Systems is organised into different business areas and your new Medical-PC comes under our TQ-Embedded segment. TQ-Embedded is already well known for its high-quality modules based on ARM, PowerPC and x86 processors. With this expertise in the background, TQ-Embedded now also develops Medical-PCs, which are offered as a platform concept. A brief overview of this concept is shown on the following page. The modular basis enables you subsequently to modify your product configuration.**

The Medical-PC is a fanless panel PC designed for use in the medical sector, particularly in operating rooms and hygienically sensitive areas. It conforms to EN 60601-1 and EN 60601-1-2 and is therefore suitable for use in patient care areas. It can also be integrated in existing medical technology products. The Medical-PC combines a high-performance PC with the latest generation of energy-saving Intel Core mobile processor technology, as well as a high-quality TFT display and touchscreen in an all-in-one device with numerous expansion options.

Advantages:

■ Scalable platform based on COM Express® modules with Intel® Core™ i7 / Intel® Xeon® and Intel® Iris graphics.
■ Standard and medical technology compatible LCD panels from 15" to 32" with FullHD or 4K UHD resolution
■ Multi-touch PCT technology with anti-glare and anti-fingerprint display
■ Monitor output for up to 3 external displays (up to 4k UHD @ 60 HZ)
■ Expandable functionality (Mini PCIe and up to 2x PCIe x4)
■ High-speed IO with 4x USB and 2x Gigabit Ethernet (4 kV isolated)

About the TQ Group

As an electronics service provider (E²MS supplier and CEM) TQ offers the complete range of services from development, through production and service right up to product life cycle management. The services cover assemblies, equipment and systems including hardware, software and mechanics. Customers can obtain all services from TQ on a modular basis as individual services and also as a complete package according to their individual requirements. Standard products such as finished microcontroller modules (minimodules), drive and automation solutions complete the range of services.

Through the combination of electronics services and finished system components, TQ offers customer-specific products as ODM products and thereby addresses customers who would like to receive finished products and at the same time benefit from the advantages of a customer-specific solution. ODM products are provided on time and economically using a comprehensive solution kit. The kit includes finished electronic, mechanical and software components including certification and licenses.

The TQ Group employs approx. 1,400 colleagues at their 13 sites (11 x Germany, 1 x Switzerland, 1 x China).

Further information on TQ can be found at www.tq-group.com/en.

Technical specifications – Medical-PC

System

CPU	5th Generation Intel® Core™ i3/i5/i7 5000U
	i7-5650U : 2x 2.2GHz / 3.2GHz Turbo, 4MB Cache
	i5-5350U : 2x 1.8GHz / 2.9GHz Turbo, 3MB Cache
	i3-5010U : 2x 2.1GHz, 3MB Cache
	15 W max. TDP
	6th Generation Intel® Core™ i3/i5/i7 in development
Working storage (RAM)	Max.16 GB DDR3L, 1600MHz, Dual Channel
Mass storage (HDD)	SATA 2.5" HDD/SSD per Drive Bay, accessible and exchangeable
	SATA SSD per mSATA (optional)
Graphic	Intel HD Graphics HD 6000
	Triple View possible with external displays
Audio	Internal speaker 2 x 2.5W
OS	Windows 7/10, Linux

Display

Monitor	Widescreen from 15" up to 32"TFT display with LED Backlight
Resolution	FHD (1920 x 1080) to UHD (3840 x 2160 / 4K)
Contrast	5000 : 1
Touchscreen	PCAP Multitouch, operation with gloves possible

Interfaces

Graphic	2 x HDMI / DP Combo (max. 2 external 4k UHD displays)
Ethernet	2 x GbE (with isolation > 4 kV)
USB	2 x USB 3.0 + 2 x USB 2.0 back + 1 x USB2.0 side
Serial	1 x RS232 isolated (optional)

Extensions / Options

PCIe Slot #1	x4 (e.g. Frame grabber, network, etc.)
PCIe / USB Slot #2	x1 (e.g. galvanic isolated RSxxx, CAN, USB, etc.)
WLAN / Bluetooth	Internal mPCIe Modul, internal antenna
SSD	Internal mSATA Modul, 64/128 GB SSD (fast Boot)
Data security / Plagiarism protection	Optional TPM Chip on the CPU module
	Optional SafeNet Chip on the Carrier
RFID	On request
NFC	On request
Barcode Scanner	On request
Customization	

Control elements Front

Power On/Off	On/Off/Standby	
Touch On/Off	On/Off > Press 5 seconds	
Brightness	Bright/dark/dimmer	
Sound	Loud/silent/dimmer	
LED 1	Green:	PC active
	Orange:	Standby
LED 2	Red:	Touch deactivated
	Green:	Touch activated

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Technology in Quality