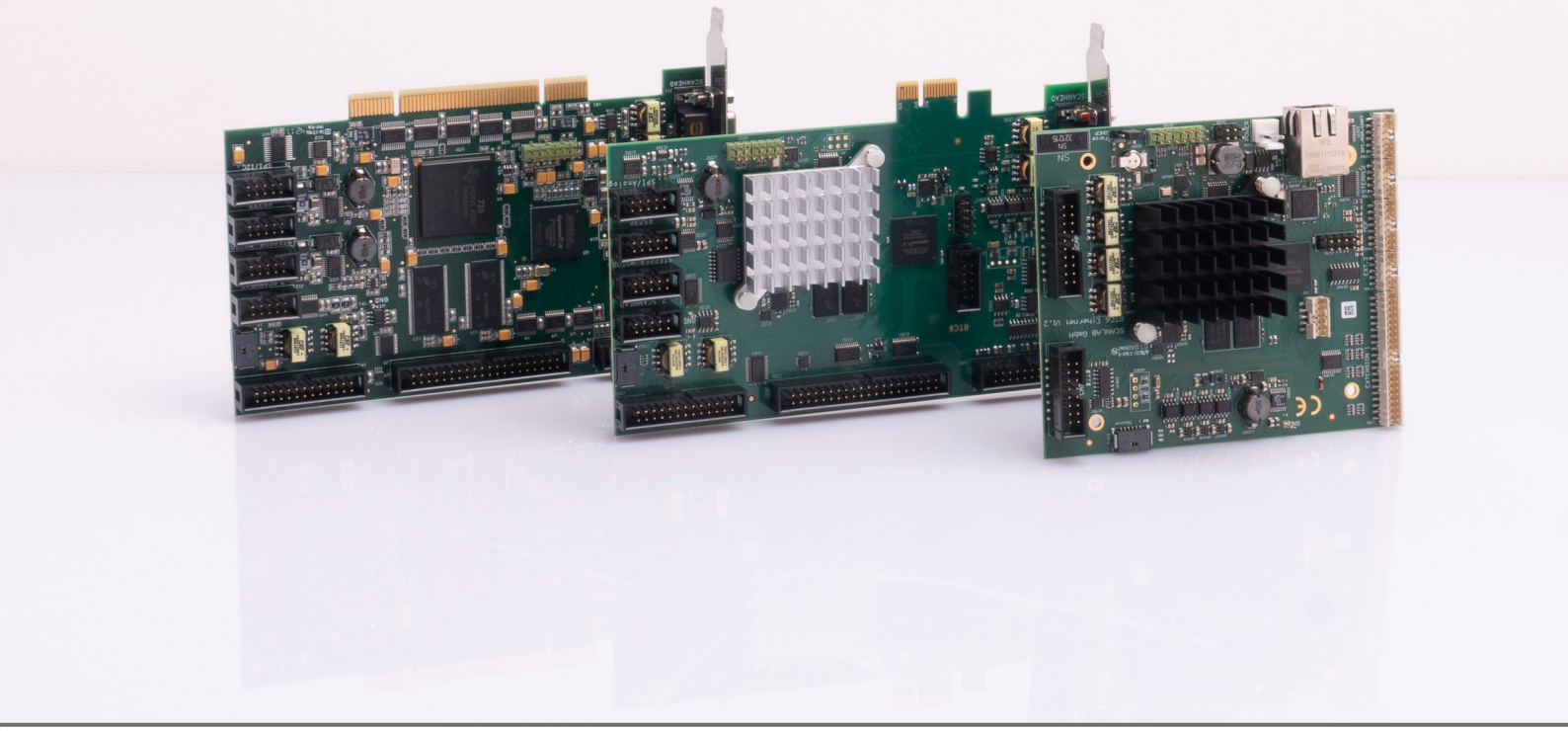
RTC Control Boards



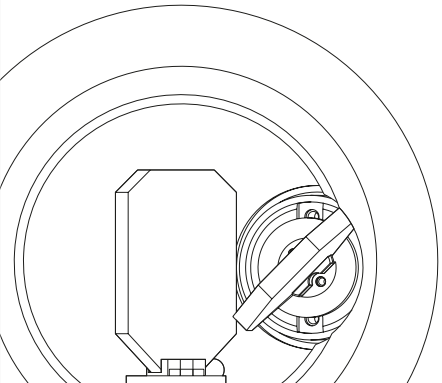
high-performance. advanced real-time scan control.

RTC control boards enable the intelligent and flexible control of scan systems, lasers and peripheral devices in real time. Thanks to the PCI Express or Ethernet interfaces, they can be integrated quickly and flexibly.

Software with detailed documentation simplifies the integration into application programs. RTC control boards are supported by many software packages for laser applications – e.g. laserDESK laser processing software.

Key Features

- Synchronous control of scan system and laser
- Control modes for all common lasers
- Flexible programming of vector and bitmap processes
- Automatic image field correction
- Support of 3D and processing on the fly applications



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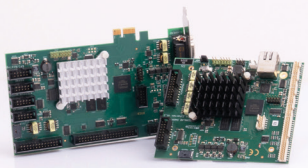
Overview



	RTC6	RTC5	RTC4
PC interface	PCI Express, Gigabit Ethernet	PCI, PCI Express	PCI Express, Ethernet
Standalone operation	yes (Ethernet variant only)	no	no
Remote interface	yes (Ethernet variant only)	no	no
Data streaming	yes (Ethernet variant only)	no	no
Scan head interface	SL2-100	SL2-100	XY2-100
Galvanic isolation	yes	yes	no
Number / Channels	2 / 2	2 / 2	2 / 3
Positioning resolution	20 bit	20 bit[1]	16 bit
Connector	9-pin D-SUB	9-pin D-SUB	25-pin D-SUB
Laser connector	15-pin D-SUB	15-pin D-SUB	9-pin D-SUB
***SCAN*ahead support** [2]	yes	no	no
Correction file format	ct5	ct5	ctb
Number of correction files 2D / 3D	8 / 8	4 / 4 [3]	2 / 1
Number of axes with processing on the fly (POF)	2 [4]	2	2
Value range virtual image field with POF	29 bit	24 bit	–
List memory	2^{23} (approx. 8 million)	2^{20} (approx. 1 million)	approx. 8,000
Recording channels / values	2 / 2^{24} or 4 / 2^{23}	2 / 2^{20} or 4 / 2^{19}	2 / 2^{15}
Maximum bitmap pixel frequency	800 kHz, optional 3,2 MHz	308 kHz	50 kHz
Analog outputs / Resolution	2 / 12 bit	2 / 12 bit	2 / 10 bit [5]
McBSP (OIE support)	yes (yes)	yes (no)	no (no)
RS232 interface	yes	yes	yes (Ethernet variant only)
Step motor control	yes	yes	yes (PCI Express variant only)
Laser synchronization	yes (n x 100 kHz)	yes	no
Laser delay resolution	$^1/_{64}$ µs	$^1/_2$ µs	1µs
Master / Slave	yes	yes	no
Sky writing modus	yes	yes	no
Date / Time / Fonts	yes	yes	no
Speed dependent laser control	yes	limited	no
IO ports 8 / 16 bit	yes	yes	yes

1) 16 bit at z-axis control
2) optional
3) half measurement data memory when using three or four correction files
4) higher accuracy through extrapolation of the encoder values
5) output pins shared with +5 V or LaserOn signal (configurable by solder jumper)

Options

	RTC6	RTC5	RTC4
Control of 3-axis scan systems	●	●	●
Processing on the fly functionality for processing moving objects	● 6)	● 6)	●
Simultaneous control of two scan systems	●	●	●
Customized software extensions	●	-	-
UltraFastPixelMode (UFPM) for frequencies above 800 kHz	●	-	-
Spot Distance Control (SDC)	● 7)	-	-
***SCAN*ahead**	●	-	-
laserDESK laser processing software	●	●	-

6) up to eight objects between trigger and marking position; 2D fly functions
7) only with *SCAN*ahead and pulse-on-demand lasers

RTC6 EtherBox

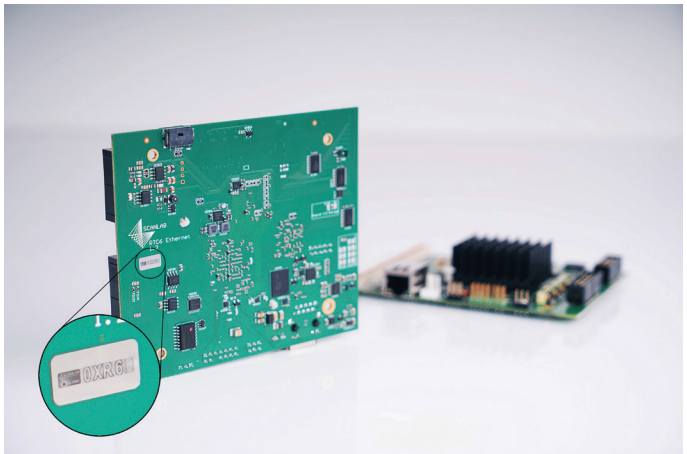
The RTC6 Ethernet is also available in a high-quality housing and can be quickly integrated into control cabinets thanks to the top-hat rail bracket.

Counterfeit Protection

We equip all RTC control cards with a forgery-proof label that contains the following features:

- holographic elements
- authentication features that are not directly visible
- not removable without residue

The allocation and traceability is secured by individual coding in combination with uniquely assigned serial numbers.



RTC6 Highlights

Highlights of all RTC6

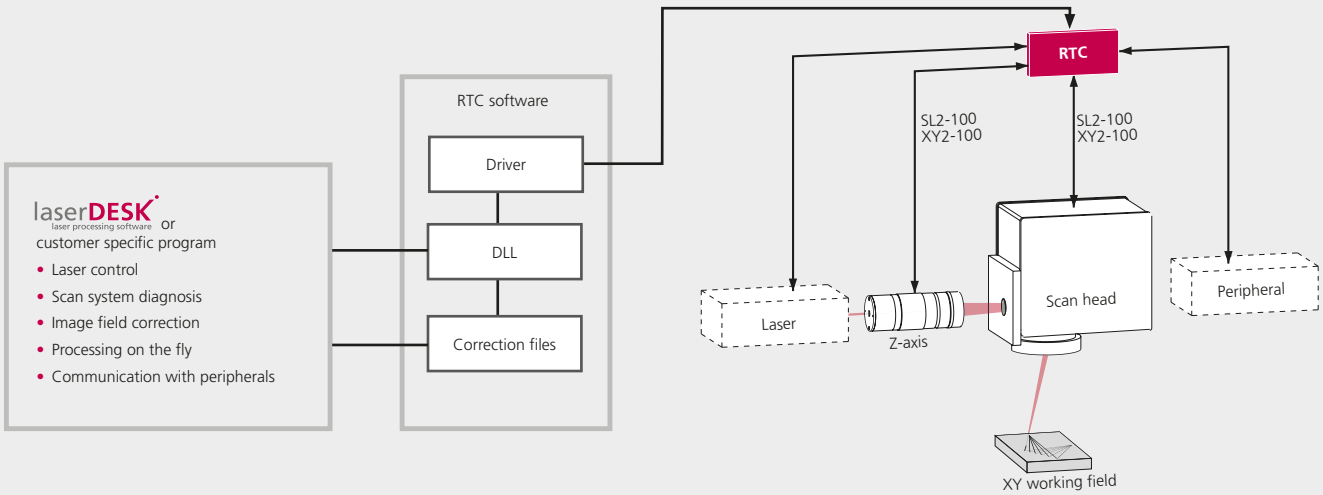
- ***SCAN*ahead technology**
  Scan systems with *SCAN*ahead control[1] operate independently from the scan speed with the maximal possible acceleration. Thanks to the RTC6, this potential for increasing productivity can be optimally exploited.
- **Multiplexing**
  The latest generation of scan systems[1] support the transmission of several scanning system parameters via the SL2-100 return channel to the RTC6. The data can be used for analysis and monitoring.
- **Short Vector Processing**
  Software extension for preprocessing short, collinear marks. This can significantly reduce process time in many cases. Short Vector DLL is an add-on software – contact us to find out more!

Additional highlights of the RTC6 Ethernet

- **Data streaming**
  Scan system status data and status of the RTC6 Ethernet control board can be permanently and job-independently transmitted to any application program.
- **Standalone functionality**
  PC-independent control of scan systems: Predefined laser jobs can be stored in flash memory and started by a system controller.
- **Remote interface**
  Platform-independent remote control of the RTC6 Ethernet control board: Allows easy connection to PLCs, Linux systems or embedded PCs.

[1] for example excelli*SCAN* series

System Integration



SCANLAB GmbH · Siemensstr. 2a · 82178 Puchheim · Germany
Tel. +49 89 800 746-0 · info@scanlab.de · www.scanlab.de

SCANLAB America, Inc. · 100 Illinois St · St. Charles, IL 60174 · USA
Tel. +1 630 797-2044 · info@scanlab-america.com · www.scanlab-america.com

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