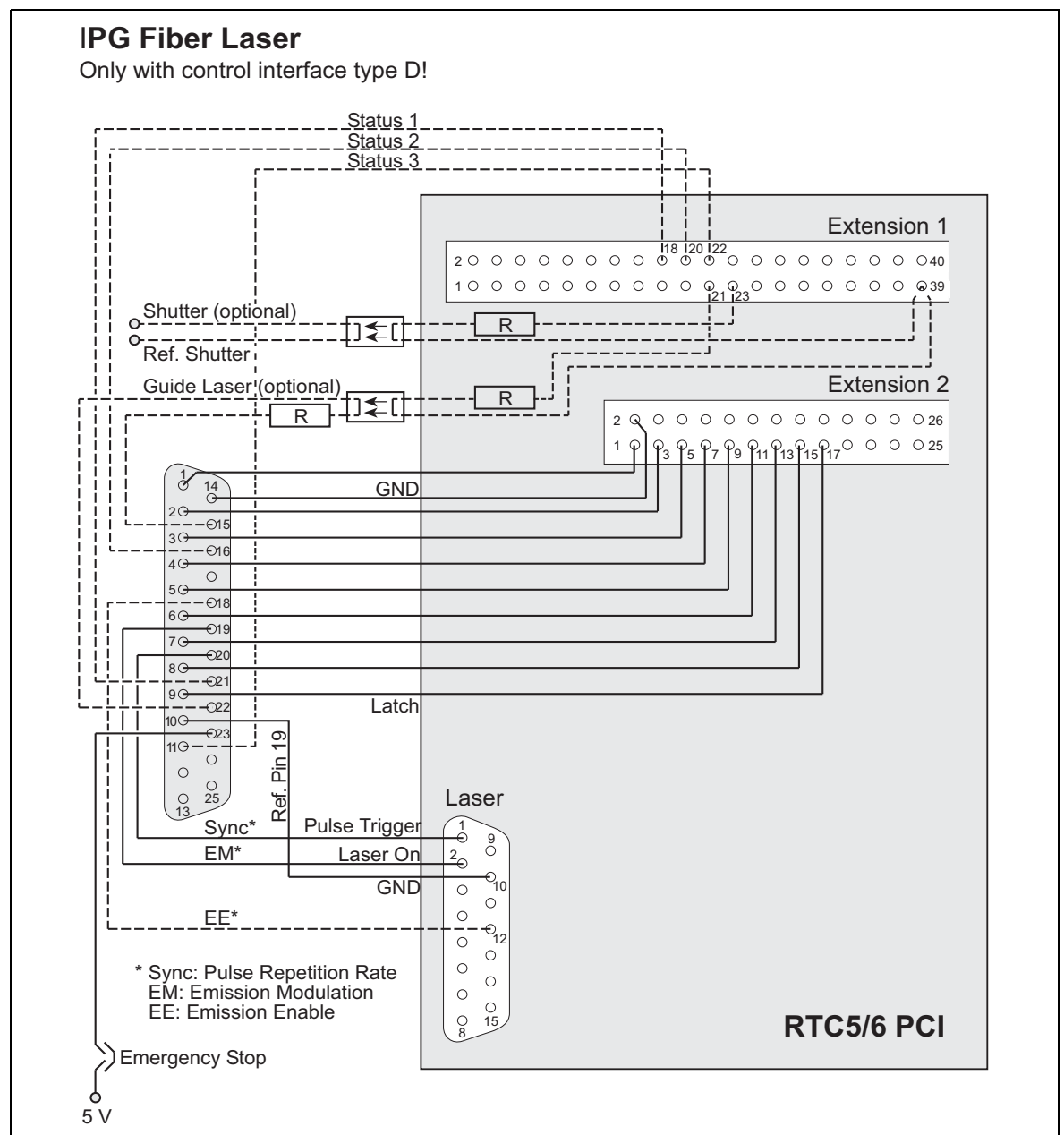


Connecting an IPG Laser with Type D Interface to an RTC5 or RTC6 Control Board

If you use an IPG laser with type D control interface, it must be connected to the RTC5/RTC6 board as shown in the figure and tables below.

The continuous lines show connections which are mandatory to control the laser via the RTC5 or RTC6 board. The dashed lines show connections which are used additional with SCANLAB's laser processing software laserDESK (e.g. for monitoring or pilot laser control).

These connections can be used also with other software, but in this case programming is required. It is also possible to use other pin connections or to use external execution.



Connecting an IPG Laser with Type D Interface to an RTC5 or RTC6 Control Board

Note:

- The following jumpers must be closed:
 - on the **RTC5/6 PCI board**:
 - JP3: Pin 15 = Data7 (Digital Out)
 - JP8: Pin 17 = Latch Signal
 - on the **RTC6 Ethernet board**:
 - Solder Jumper Field B: Pin17 = Latch
 - Solder Jumper Field C: Pin15 = Data7
 (See chapters 'Jumper Settings and Type Identification' and 'EXTENSION 2 Connector' in the RTC5 Manual or 'Jumper Settings' and 'EXT. 2 Connector' in the RTC6 Manual)
- Please verify the connections by using the laser manual, because the laser connection interface may have changed.

- The Laser connector shown above (D-SUB 15-pin female) is the connector of the RTC5 and RTC6 PCI boards. Please note the different pin assignment of the RTC6 Ethernet board (16-pin socket). The table below shows the pin assignment for both types.
- Although the information in this document has been tested and reviewed, SCANLAB cannot guarantee its correctness. Please read the manuals of your laser and the RTC5/RTC6 board to verify the information given in the following is correct. SCANLAB is not liable for any damages beyond the terms and conditions set forth in your written contract with SCANLAB and your RTC5/RTC6 Manual.

The tables below show the connections and the pin-configuration of the RTC control board's 'Laser' connector, the 'Extension 1' connector (40-pin socket) and the 'Extension 2' connector (26-pin socket).

RTC5/6 'Laser' Connector				
Name	Pin No.		General Use	
	RTC5/6 PCI	RTC6 Eth.		
DIGITAL IN1	13	10	Laser state *	not used
DIGITAL IN2	6	11	Laser state *	not used
DIGITAL OUT1	12	8	Laser control *	1 = Laser on (MO) (Emission enable)
DIGITAL OUT2	5	9	Laser control *	not used
ANALOG OUT1	8	15	Laser power	not used
ANALOG OUT2	15	14	Defined by user	
GND	14	12	Ground (PC ground)	
LASER1	1	1	Laser process control	Pulse repetition rate (Frequency)
LASER2	9	2	Laser process control	not used
LASERON	2	3	Laser process control	Laser beam on/off (Emission modulation)
+5 V	7	13	Output voltage	
GND2	10	4	Ground	Ground

* Signals whose functions are specially programmed in laserDESK

Connecting an IPG Laser with Type D Interface to an RTC5 or RTC6 Control Board

RTC5/6 'Extension 1' Connector			IPG Laser – Type D
Name	Pin No.	General Use	
Digital In 0-7	2, 4, ..., 16	Defined by user *	
Digital In 8	18	Reserved *	Status 1
Digital In 9	20	Reserved *	Status 2
Digital In 10	22	Reserved *	Status 3
Digital In 11	24	Reserved *	–
Digital In 12	26	Switching automatic mode on/off ¹⁾ *	–
Digital In 13	28	Switching laser on/off ^{1, 2)} *	–
Digital In 14	30	Reserved *	–
Digital In 15	32	Reserved *	–
Digital Out 0-7	1, 3, ..., 15	Defined by user *	
Digital Out 8	17	System status: job execution not aborted *	–
Digital Out 9	19	Reserved *	–
Digital Out 10	21	Pilot laser *	1 = Guide laser on (optional)
Digital Out 11	23	Shutter switch (1 = open) *	1 = Shutter open (optional)
Digital Out 12	25	System status: ready *	
Digital Out 13	27	System status: automatic mode *	
Digital Out 14	29	System status: job in execution *	
Digital Out 15	31	System status: error *	–
5 V	37	5 V out	
GND	39	Ground (PC ground)	Ref. ground for guide laser and shutter
GND	40	Ground (PC ground)	

* Signals whose functions are specially programmed in laserDESK

1)Function has to be activated in the laserDESK Hardware Configuration.

2)Only for full supported laser types.

RTC5/6 'Extension 2' Connector			IPG Laser – Type D
Name	Pin No.	General Use	
Data0	1	Laser power bit 0	Power bit 0
Data1	3	Laser power bit 1	Power bit 1
Data2	5	Laser power bit 2	Power bit 2
Data3	7	Laser power bit 3	Power bit 3
Data4	9	Laser power bit 4	Power bit 4
Data5	11	Laser power bit 5	Power bit 5
Data6	13	Laser power bit 6	Power bit 6
Data7	15	Laser power bit 7	Power bit 7
Latch	17	Power latch-bit	Latch-bit
GND	2	Ground (PC ground)	Ground