

Connecting an SPI Laser (HS/EP Series) with Type G4 Interface to an RTC5 or RTC6 Control Board

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Note:

- 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				SPI Laser Type G4 (HS/EP series)
Name	Pin No.		General Use	
	RTC5/6 PCI	RTC6 Eth.		
DIGITAL IN1	13	10	Laser state *	Laser ready (High = ok)
DIGITAL IN2	6	11	Laser state *	not used
DIGITAL OUT1	12	8	Laser control *	1 = Laser on (Global enable)
DIGITAL OUT2	5	9	Laser control *	Switch between cw and pulsed mode 1 = cw mode
ANALOG OUT1	8	15	Laser power	Laser power
ANALOG OUT2	15	14	Simmer current *	Simmer current
GND	14	12	Ground (PC ground)	Ground
LASER1	1	1	Laser process control	Frequency (Pulse trigger)
LASER2	9	2	Laser process control	not used
LASERON	2	3	Laser process control	Laser emission gate
+5 V	7	13	Output voltage	
GND2	10	4	Ground	Ground

* Signals whose functions are specially programmed in laserDESK

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RTC5/6 'Extension 1' Connector			SPI Laser Type G4 (HS/EP series)
Name	Pin No.	General Use	
Digital In 0-7	2, 4, ..., 16	Defined by user *	
Digital In 8	18	Reserved *	–
Digital In 9	20	Reserved *	–
Digital In 10	22	Reserved *	–
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 = Pilot laser on
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	5 V
GND	39	Ground (PC ground)	Ref. ground for pilot laser and shutter
GND	40	Ground (PC ground)	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			SPI Laser Type G4 (HS/EP series)
Name	Pin No.	General Use	
Data0	1	Laser power bit 0 (not used)	Waveform selection bit 0 *
Data1	3	Laser power bit 1 (not used)	Waveform selection bit 1 *
Data2	5	Laser power bit 2 (not used)	Waveform selection bit 2 *
Data3	7	Laser power bit 3 (not used)	Waveform selection bit 3 *
Data4	9	Laser power bit 4 (not used)	Waveform selection bit 4 *
Data5	11	Laser power bit 5 (not used)	Waveform selection bit 5 *
Data6	13	Laser power bit 6	not used
Data7	15	Laser power bit 7	not used
Latch	17	Power latch-bit	not used
GND	2	Ground (PC ground)	Ground

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