



an Intel company

2.5 Gbit/s Re-timing Laser Driver Evaluation Board GD90521

Preliminary

General Description

The GD90521 evaluation board is designed for evaluation of the GD16521 re-timing Laser Driver in 2.5 Gbit/s applications.

The evaluation board comprises:

- ◆ SMA connectors for the high-speed clock and data I/Os.
- ◆ 50 Ω transmission lines for inputs
- ◆ 25 Ω transmission line for output
- ◆ Test points for status flags
- ◆ DIP switch for easy configuration of the device

The evaluation board contains a regulator for the positive supply voltage (VCC) to the device, op-amps and bias circuits.

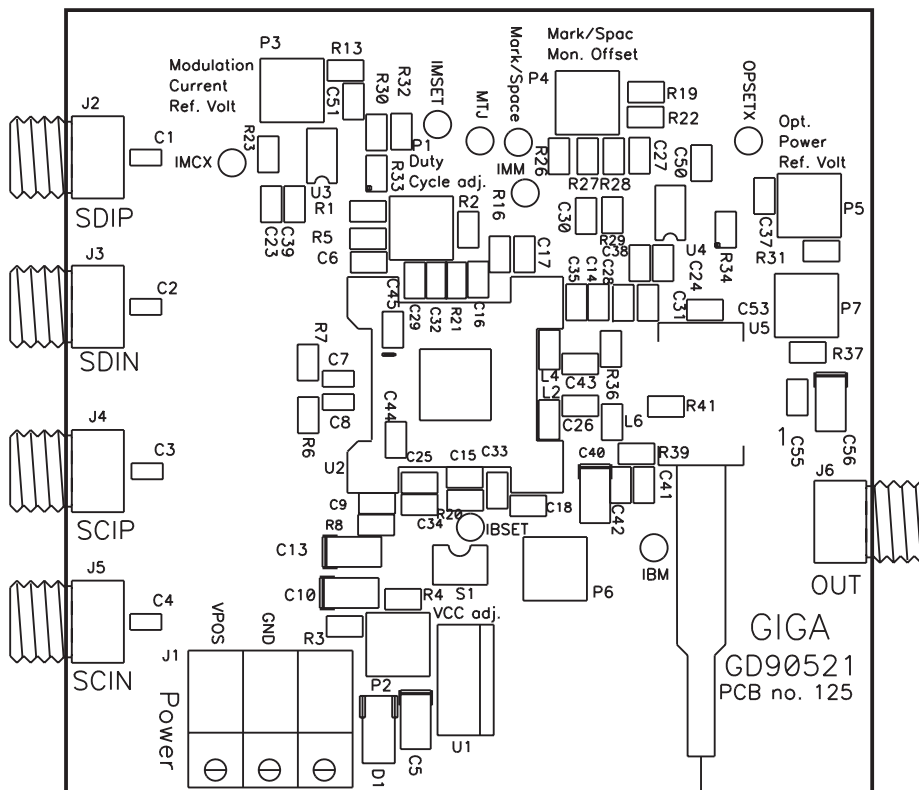
Configuration switches for control of GD16521 shutdown and re-timing/bypass modes are mounted on the board.

The GD16521 is surface mounted with the exposed heat slug soldered to the board.

To operation the device only an external single power supply, input data, optional reference clock and relevant load and measuring equipment are necessary.

Features

- Easy evaluation of high-speed performance.
- Footprint for uncooled laser with regulation circuit.
- High-speed data inputs/output available via standard SMA connectors.
- Integrated 50 Ω transmission lines in the PCB ensure matching interconnection of input and output signals.
- On-board DC regulators.
- Single unregulated power supply: +5.5 V, 0.5 A.
- Board dimensions: 75 × 75 mm (exclusive connectors).



Functional Details

Data and Clock Inputs

The differential data input (SDIP/SDIN) is AC coupled from the signal source via connectors J2/J3. The inputs are DC-biased and terminated internally in the GD16521. Only external de-coupling of the termination pins (TDIP/TDIN) is required.

The clock input (SCIP/SCIN) is constructed in the same way as the data input.

Data Output

Each branch of the differential data output (IM/IMB) terminates in two output pins. Connecting each of these two output pins results in a $25\ \Omega$ characteristic impedance. The single-ended load is connected to IM, and both outputs are terminated in the same manner to ensure symmetrical working conditions for the driver.

The IM output is AC coupled to the load via C26. DC bias is injected through L1 – L2. The unused branch is DC biased via L3 – L4 and is AC coupled to a dummy load (R36). The load (laser-diode) is pre-biased via L5 – L6 from the IB pin. The output is either connected to the SMA connector (J6) or to a surface-mounted, laser.

If a laser is mounted, the signal from the monitor diode is fed back to the integrated regulation circuits (AR and PD), which are described in the GD16521 data sheet. The modulation current can be adjusted on the potentiometer (P3). The integrated regulation circuit for control of the modulation current is described in the GD16521 data sheet.

The output from the integrated mark/space monitor is filtered and buffered with offset adjustment in an LMV358 op-amp (U4:B) and fed to a test point.

DIP Switches

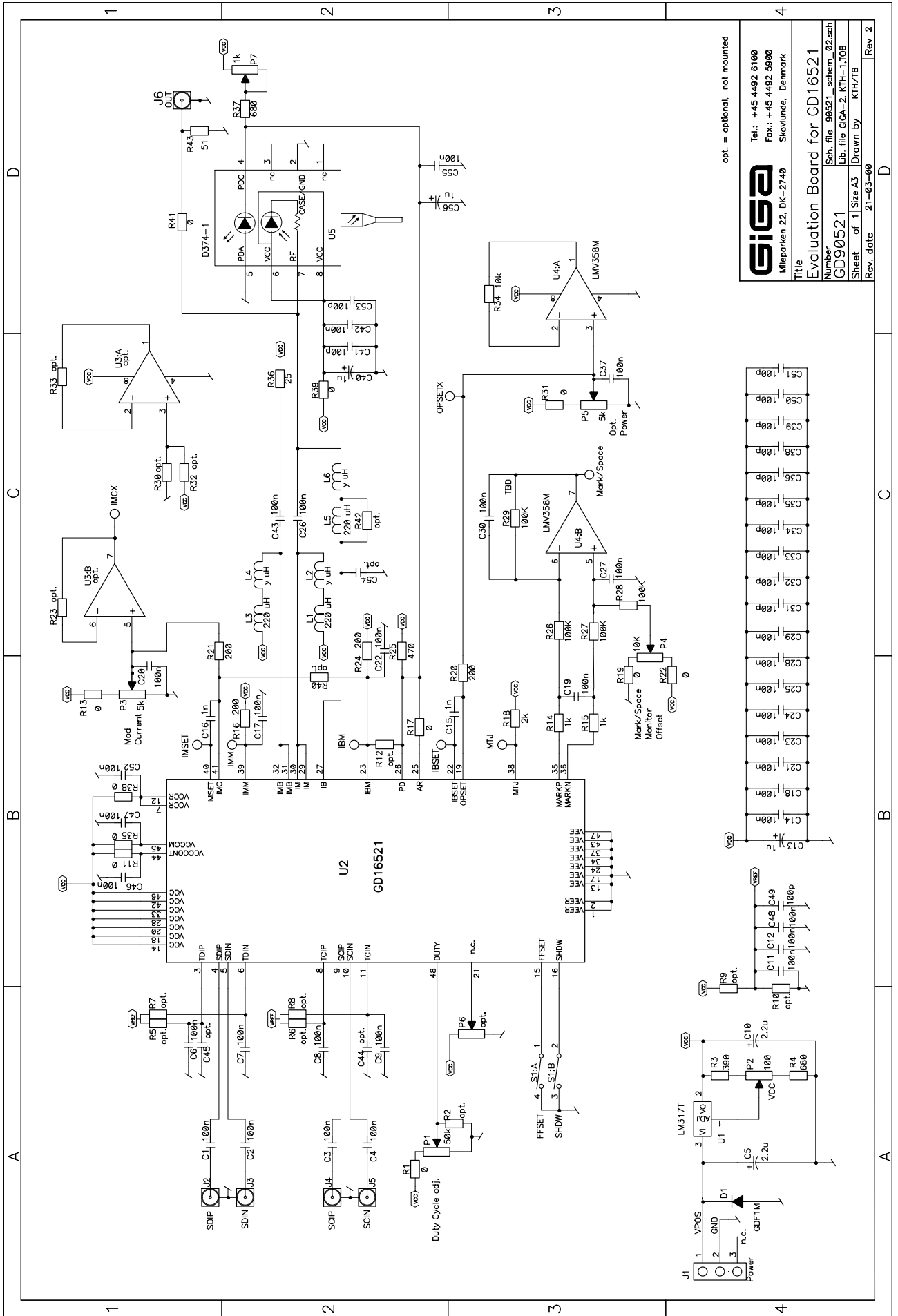
Two DIP switches are available for control of re-timing/bypass and shutdown function.

Default settings are:

- ◆ Re-timing: Enabled
- ◆ Shutdown: Disabled

Other Items

The power supply for the laser's anode is as default connected to VCC. However the PCB is designed with separate access to this power supply. By removing of R39 the laser can be powered from a separate (higher) voltage if desired. Hence tests can be made with the laser DC connected without modification of the PCB.



References

GD16521 – Data sheet, latest revision

Ordering Information

To order, please specify as shown below:

Order Number:	Intel Order Number	Description:
GD90521	GD90521 MM#: 836262	The evaluation kit comprises: Evaluation board in antistatic bag GD16521 device mounted on the board How to get started GD16521 Data sheet GD90521 Data sheet (this document)



an Intel company

Mileparken 22, DK-2740 Skovlunde
Denmark

Phone : +45 7010 1062

Fax : +45 7010 1063

E-mail : sales@giga.dk

Web site : <http://www.intel.com/ixa>

*Please check our Internet web site
for latest version of this data sheet.*

GD90521, Data Sheet Rev.: 3 - Date: 24 July 2001

The information herein is assumed to be reliable. GIGA assumes no responsibility for the use of this information, and all such information shall be at the users own risk. Prices and specifications are subject to change without notice. No patent rights or licenses to any of the circuits described herein are implied or granted to any third party. GIGA does not authorise or warrant any GIGA Product for use in life support devices and/or systems.

Distributor:

Copyright © 2001 GIGA ApS
An Intel company
All rights reserved