

INTEGRATED LASER MODULE FOR TUNABLE LASER GAS ANALYSIS

OVERVIEW

Tunable Diode Laser Absorption Spectrometry (TDLAS) is the next-generation technology for gas state molecules detection.

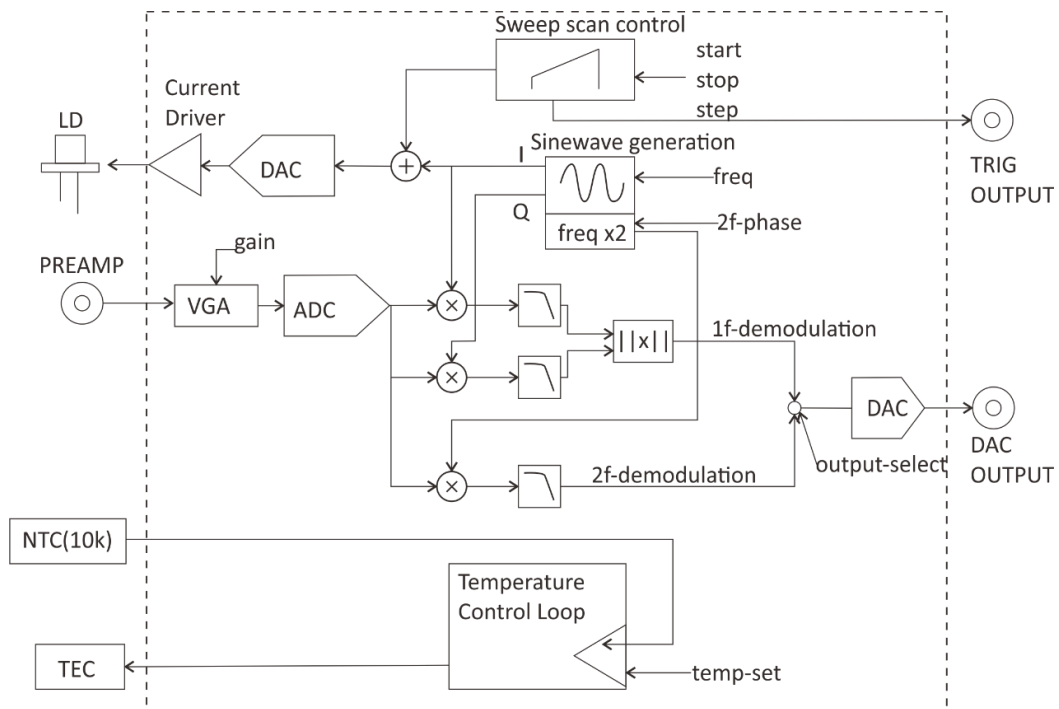
While traditional approach requires a lot of different equipment, our featured laser driving module provides an all-in-one solution. Its powerful functions will unleash the full potential of the leading-edge lasers and make your analysis work easier.

It integrated the laser driving, temperature control, heating sink, modulation and demodulation in a single box. All functions are accessed through our PC software or through terminal console.

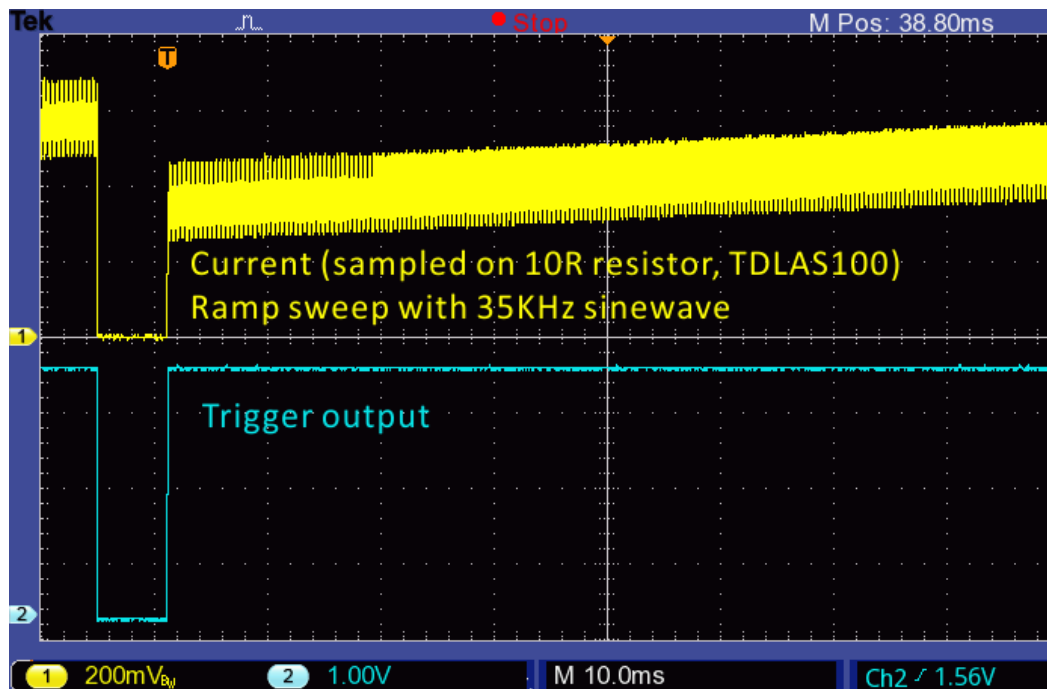
We even integrated a wavelet based peak detection algorithm. When properly set up, the module can directly output the absorption results.

Wide range of lasers are supported, including near infrared DFB, DM Lasers, high power QCL(Quantum Cascade Lasers), ICLs etc.

Function Block

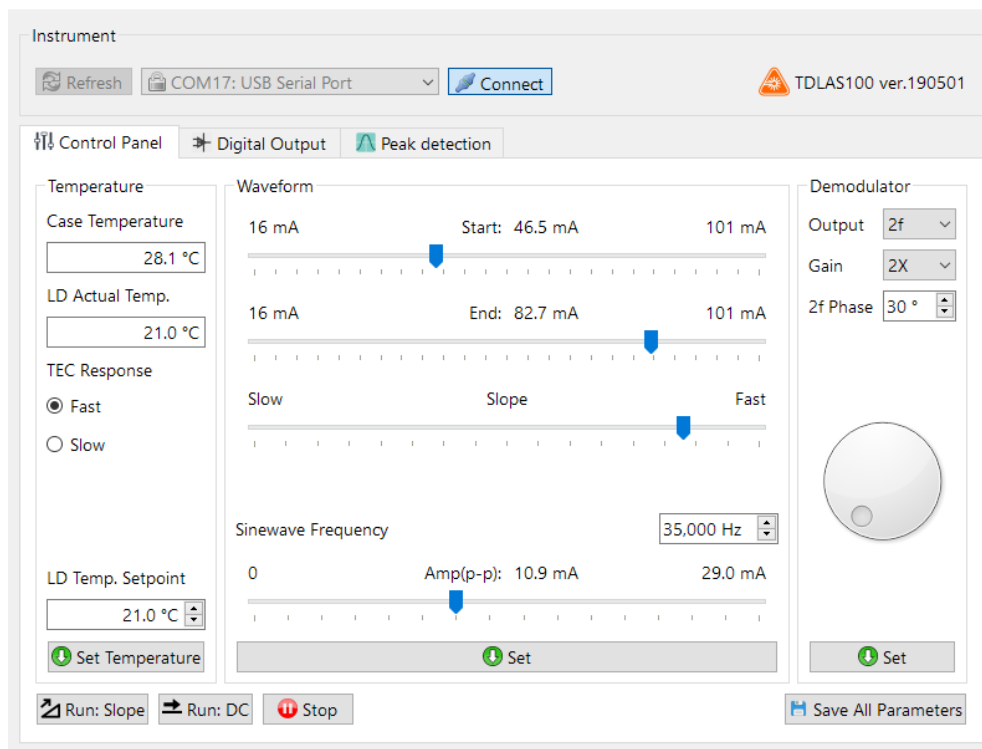


Waveform Example

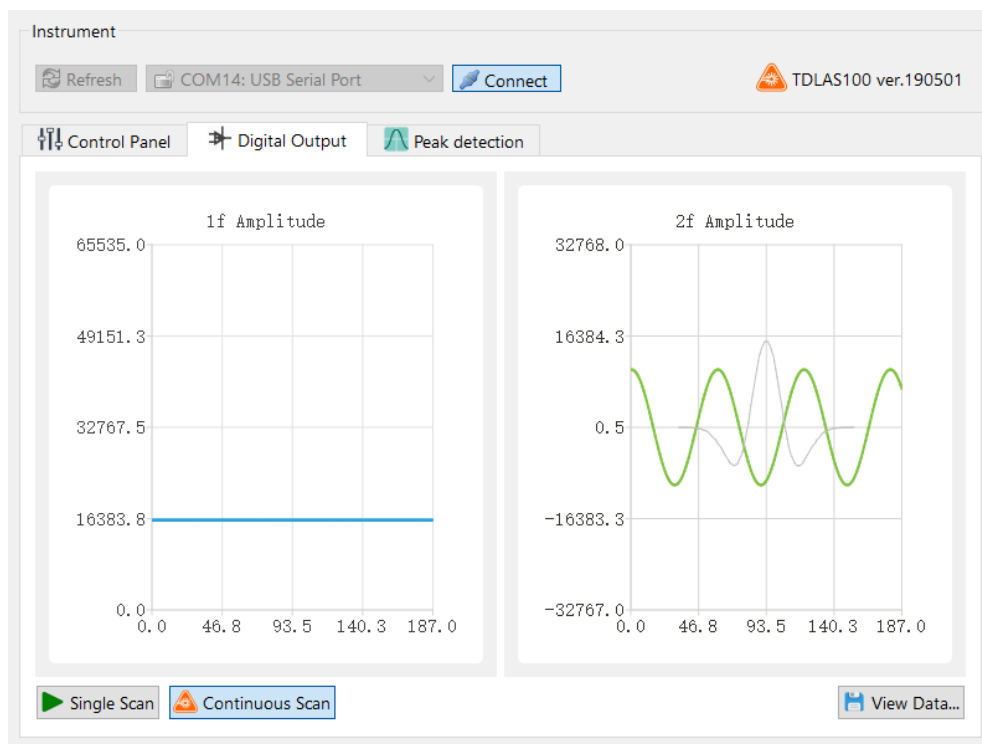


Current output on an EP1653-7-DM-B01 laser (Eblana photonics), using TDLAS100 module.

Software



Main control panel to set the system parameters and to start the laser.



Demodulator panel. Figure shows a TDLAS100 demodulating 35.01KHz triangle wave from a signal generator. Data can be acquired within the software and though DAC port in analog.



QCL1200

SPECIFICATION

Power Supply	15 VDC, 6 A
Laser Mount	HHL package
Light Output	Front panel, collimated
Cooling Method	Air cooling or external water cooling
TEC Driving Current	5 A max
TEC Driving Voltage	15 V max
Temperature Control Range	air cooling: room temperature~50°C water cooling: 0~50 °C
LD Driving Voltage	14 V max
Ramp Current	0 ~ 1.25 A
Sinewave Modulation	20 kHz ~ 50 kHz, 0 ~ 300 mA p-p
Preamp Input	max 5 V p-p, AC coupling
Demodulation	digital, 1f amplitude, 2f with phase
Variable Gain Amplifier	x1, x2, x4, x8
DAC Output	0 ~ 2.5 V
Connection	USB 1.1, PC software or console
Dimension	300 x 165 x 150 mm



QCL250

SPECIFICATION

Power Supply	12 ~ 18 VDC, 3 A
Laser Mount	8 pin TO-CAN package (Sumitomo electric)
Light Output	Front panel, divergent
Cooling Method	Air cooling
TEC Driving Current	1.5 A max
TEC Driving Voltage	5 V max
Temperature Control Range	-10~50°C
LD Driving Voltage	15 V max
Ramp Current	0 ~ 250 mA
Sinewave Modulation	20 kHz ~ 50 kHz, 0 ~ 60 mA p-p
Preamp Input	max 5 V p-p, AC coupling
Demodulation	digital, 1f amplitude, 2f with phase
Variable Gain Amplifier	x1, x2, x4, x8
DAC Output	0 ~ 2.5 V
Connection	USB 1.1, PC software or console



TDLAS100

SPECIFICATION

Power Supply	100 ~ 240 VAC
Laser Mount	14 pin butterfly packages
Light Output	Front panel, fiber
Cooling Method	Air cooling
TEC Driving Current	1.0 A max
TEC Driving Voltage	3.3 V max
Temperature Control Range	-10 ~ 50°C
LD Driving Voltage	< 2.7 V @ 50 mA, < 2.2 V @ 100 mA
Ramp Current	0 ~ 116 mA
Sinewave Modulation	20 kHz ~ 50kHz, 0 ~ 30 mA p-p
Preamp Input	max 5 V p-p, AC coupling
Demodulation	digital, 1f amplitude, 2f with phase
Variable Gain Amplifier	x1, x2, x4, x8
DAC Output	0 ~ 2.5V
Connection	USB 1.1, PC software or console
Dimension	227 x 158 x 61 mm