GM82009 Tunable Laser Source

Programming Guide

UC INSTRUMENTS CORP.

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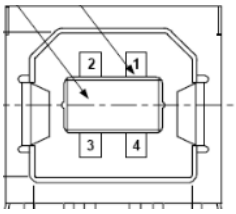
Communication Port

USB Port

Standard four-core B type USB port.



Communication setting:

1 Start bit, 8 Data bit, 1 Stop bit, No parity checking. Baud rate: 115200 bps.

Syntax

Commands Format

The following symbols describe the syntax of commands in the following chapters.
The command is case-insensitive and can be written in upper case or in lower case or in both upper and lower case.

Example The command
READ1 : POW ?
can also be written in lower case as
read1 : pow ?
or it can be written as
Read1 : Pow ?

Put a colon (**:**) before a component to indicate a move to the next level of the combination.

Example SENS1 : POW : WAVELENGTH ?

A command message is ended by a carriage return and a line feed character (\CR\LF).

The response format specifies what the instrument returns in response to a query. All responses are terminated with '\CR\LF >'.

For the query command, if normal, the instrument returns response value with a '>', if an error occurs, then returns '>'.

For the written command, if normal, the instrument returns 'Ok! >'. If an error occurs, then returns '>'.

<…> The characters between angled brackets show the kind of data that you require, or that you get in a response. You don't type the angled brackets in the actual message.

[…] The characters between square brackets show optional information that you can include with the message.

/ The oblique line shows an either-or choice of data, for example, a/b means either a or b, but not both simultaneously.

All characters not between angled brackets are terminal symbols and must be sent exactly as shown. Items between angled brackets are not-terminal symbols, descriptions of these items follow the syntax description.

Spaces are ignored, they can be inserted to improve readability.

Command List

Common command

Command	Function
*IDN?	Identification query

*IDN?

This command queries the instrument identification over the interface.
Syntax *IDN?

Response GM82009C, serial number:GG032713001, VER:V2.11
GM82009C: instrument model
GG032713001: serial number of this instrument
V2.11: firmware revision level

Definition The *IDN? query returns the manufacturer, model, serial number, hardware revision of the instrument.

Source commands

Command	Parameter	Description
SOURCE		
:STATE ?		This command queries the On/Off state of the laser source output signal. ON or 1 enables the source. OFF or 0 disables the source.
:STATE	<Boolean>	This command sets the state of the source output signal. ON or 1 enables the source. OFF or 0 disables the source.
:FREQUENCY ?		This command queries the frequency setting for the source module output.
:FREQUENCY	<Value>	This command sets the frequency value for the source module.
:FREQUENCY ? MAX /MIN		This command queries the range setting of frequency for the source module.
:FREQUENCY	MAX /MIN	This command sets the current frequency for source module as the maximum or minimum of frequency.
:WAVELENGTH ?		This command queries the wavelength setting for the source module output.
:WAVELENGTH	<Value>	This command sets the wavelength value for the source module.
:WAVELENGTH ? MAX/MIN		This command queries the range setting of wavelength for the source module.
:WAVELENGTH MAX/MIN		This command sets the current wavelength for source module as the maximum or minimum of wavelength.
:POWER ?		This command queries the power setting for source module.
:POWER		

:UNIT ?		This command queries the power unit. The power unit is either dBm or mW.
:UNIT	<W/DBM>	This command sets the unit of power in use. This can be dBm or mW.

For Example:

Command Response	SOURCE: STATE? OFF >	Query the On/Off state of the laser source output signal. ON or 1 enables the source. OFF or 0 disables the source.
Command Response	SOURCE: STATE 1 >	Set the state of the source output signal. ON or 1 enables the source.
Command Response	SOURCE: STATE 0 >	Set the state of the source output signal. OFF or 0 disables the source.
Command Response	SOURCE: FREQUENCY? 196100 >	Query the frequency setting for the source module output. No unit is attached with the returned value, the GHz is used to as the default.
Command Response	SOURCE: FREQUENCY 196500 >	Set the frequency value for the source module. The command don't specify the units, the GHz is used to as the default.
Command Response	SOURCE: FREQUENCY? MAX 196585 >	Query the frequency setting maximum for the source module. No unit is attached with the returned value, the GHz is used to as the default.
Command Response	SOURCE: FREQUENCY MAX >	Set the maximum of frequency as the current frequency for source module.
Command Response	SOURCE: FREQUENCY? MIN 196585 >	Query the frequency setting minimum for the source module. No unit is attached with the returned value, the GHz is used to as the default.

Command Response	SOURCE: FREQUENCY MIN >	Set the minimum of frequency as the current frequency for source module.
Command Response	SOURCE: WAVELENGTH? 1525 >	Query the wavelength setting for the source module output. No unit is attached with the returned value, the nm is used to as the default.
Command Response	SOURCE: WAVELENGTH 1525 >	Set the wavelength value for the source module. The command don't specify the units, the nm is used to as the default.
Command Response	SOURCE: WAVELENGTH? MAX 1565 >	Query the wavelength setting maximum for the source module. No unit is attached with the returned value, the nm is used to as the default.
Command Response	SOURCE: WAVELENGTH MAX >	Set the maximum of wavelength as the current wavelength for source module.
Command Response	SOURCE: WAVELENGTH? MIN 1510 >	Query the wavelength setting minimum for the source module. No unit is attached with the returned value, the nm is used to as the default.
Command Response	SOURCE: WAVELENGTH MIN >	Set the minimum of wavelength as the current wavelength for source module.
Command Response	SOURCE: POWER? 13 >	Query the power setting for source module. The power unit is decided by the command 'SOURCE: POWER:UNIT'.
Command Response	SOURCE: POWER:UNIT? >	Query the power unit for source module. The power unit is either dBm or mW.
Command Response	SOURCE: POWER:UNIT dBm >	Set the unit of power in use. This can be dBm or mW.

Sweep Commands

Command	Parameter	Description
SWEEP		
:INITIATE		This command starts a sweep performing for source module.
:ABORT		This command aborts the sweep performing for source module.
:MODE?		This command returns the sweep mode for the source module. The returned values are separated by a comma. The first value is a constant as 1. The second value represents sweep mode, 0 is for frequency sweep, 1 is for wavelength sweep.
:MODE	< 1, N >	This command sets the sweep mode for the source module. The setting values are separated by a comma. The first value is a constant as 1. The second value, N represents sweep mode. Set N to 0 for frequency sweep. Set N to 1 for wavelength sweep.
SWEEP : FREQ		
:PAUSE?		This command returns the interval time between two steps of a stepped sweep for the source module.
:PAUSE	<Value>	This command sets the interval time between two steps of a stepped sweep for the source module.
:PULSE: PAUSE?		This command returns the time width of trigger pulse. The default unit is second. Don't attach the unit in the command message.
:PULSE: PAUSE	<Value>	This command sets the time width of trigger pulse. The default unit is second. Don't attach the unit in the command message. The setting range is form 0.0001 to 6 seconds.
:START?		This command returns the setting value of the frequency at which the sweep begins for the source module.

:START	<Value>	This command sets the frequency at which the sweep begins for the source module.
:STOP?		This command returns the setting value of frequency at which the sweep ends for the source module.
:STOP	<Value>	This command sets the frequency at which the sweep ends for the source module.
:STEP?		This command returns the size of the change in the frequency for each step of a stepped sweep for the source module.
:STEP	<Value>	This command sets the size of the change in the frequency for each step of a stepped sweep for the source module. The accuracy is 1GHz.

SWEEP : WAVE

:START?		This command returns the setting value of the wavelength at which the sweep begins for the source module.
:START	<Value>	This command sets the wavelength at which the sweep begins for the source module.
:STOP?		This command returns the setting value of wavelength at which the sweep ends for the source module.
:STOP	<Value>	This command sets the wavelength at which the sweep ends for the source module.
:STEP?		This command returns the size of the change in the wavelength for each step of a stepped sweep for the source module.
:STEP	<Value>	This command sets the size of the change in the wavelength for each step of a stepped sweep for the source module. The setting minimum is 0.01.

For example

Command Response	SWEEP:INITIATE >	Start a sweep performing for source module.
Command Response	SWEEP:ABORT Sweep: Abort Ok >	Abort the sweep performing for source module.
Command Response	SWEEP: MODE? >	Return the sweep mode for the source module. The returned values are separated by a comma. The first value is a constant as 1. The second value represents sweep mode, 0 is for frequency sweep, 1 is for wavelength sweep.
Command Response	SWEEP: MODE 1,0 >	This command sets the sweep mode for the source module. The setting values are separated by a comma. The first value is a constant as 1. The second value, 0 represents performing frequency sweep.
Command Response	SWEEP: FREQ:PAUSE? 0.01 >	Return the interval time between two steps of a stepped sweep for the source module. The returned value is in second. No unit is returned in the response message.
Command Response	SWEEP: FREQ:PAUSE 0.1 >	Set the interval time between two steps of a stepped sweep for the source module. The default unit is second. Don't attach the unit in the command message.
Command Response	SWEEP: FREQ:PULSE:PAUSE? 0.0001 >	Return the time width of trigger pulse. The default unit is second. Don't attach the unit in the command message.
Command Response	SWEEP:FREQ:PULSE:PAUSE 0.1 >	Set the time width of trigger pulse. The default unit is second. Don't attach the unit in the command message.

Command Response	SWEEP: FREQ:START? 1525 >	Return the setting value of the frequency at which the sweep begins for the source module. The returned value is in GHz. No unit is returned in the response message.
Command Response	SWEEP:FREQ:START 191000 >	Set the frequency at which the sweep begins for the source module. The default unit is GHz. Don't attach the unit in the command message.
Command Response	SWEEP: FREQ:STOP? 196000 >	Return the setting value of frequency at which the sweep ends for the source module. The returned value is in GHz. No unit is returned in the response message.
Command Response	SWEEP: FREQ : STOP 196000 >	Set the frequency at which the sweep ends for the source module. The default unit is GHz. Don't attach the unit in the command message.
Command Response	SWEEP: FREQ : STEP? 1000 >	Return the size of the change in the frequency for each step of a stepped sweep for the source module. The returned value is in GHz. No unit is returned in the response message.
Command Response	SWEEP : FREQ : STEP 1000 >	Set the size of the change in the frequency for each step of a stepped sweep for the source module. The default unit is GHz. Don't attach the unit in the command message.
Command Response	SWEEP : WAVE : START? 1525 >	Return the setting value of the wavelength at which the sweep begins for the source module. The returned value is in nanometer. No unit is returned in the response message.
Command Response	SWEEP : WAVE : START 1525 >	Set the wavelength at which the sweep begins for the source module. The default unit is nanometer. Don't attach the unit in the command message.

Command Response	SWEEP : WAVE : STOP? 1568 >	Return the setting value of wavelength at which the sweep ends for the source module. The returned value is in nanometer. No unit is returned in the response message.
Command Response	SWEEP : WAVE : STOP 1568 >	Set the wavelength at which the sweep ends for the source module. The default unit is nanometer. Don't attach the unit in the command message.
Command Response	SWEEP : WAVE : STEP? >	Return the size of the change in the wavelength for each step of a stepped sweep for the source module. The returned value is in nanometer. No unit is returned in the response message.
Command Response	SWEEP : WAVE : STEP 0.02 >	Set the size of the change in the wavelength for each step of a stepped sweep for the source module. The setting minimum is 0.01. The default unit is nanometer. Don't attach the unit in the command message.

UC INSTRUMENTS CORP. CONTACT INFORMATION

UC INSTRUMENTS CORPORATION

Add: 37498 Glenmoor Dr., Fremont, CA 94536 USA
Tel: +1-510-366-7353
Fax: +1-510-353-1809
Email: sales@ucinstruments.com
Website: www.ucistruments.com

MAINTENANCE SERVICE CENTER,GUILIN,CHINA

Address：No.16 Yi Feng south road, GuiLin, China
Tel: +86 773 5850657
Fax: +86 773 5814532
Website: www.ucigl.com