GM8012 Dual Channels Power Meter

Programming Guide

Aug., 2010

（此图片还没更新为最新）

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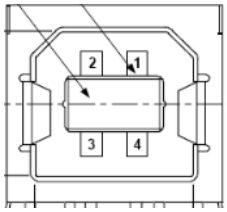
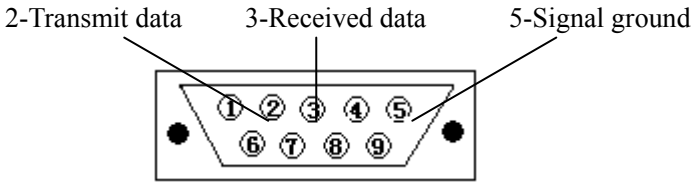
Communication Port

USB Port

Standard four-core B type USB port.



RS232 Serial Port



The DB9 connector and pin assignments for GM8012

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.

Units

The following table lists the base units in use.

Units	Default	Extended
Meter	nm	nm
Decibel	dB	dB
Second	s	ms, s
Decibel/1mW	dBm	dBm

Data Type

Boolean	this can be data (ON or OFF), or a number. In a response you get 0, for OFF, or 1, for ON.
Value	is numeric data in one of the forms described below.
String	is Ascii data.
Unit	is one of DB, DBM, W (Watts), or S (seconds), or NM. It is the unit in a value.

Specifying the Channel

The GM8012 has two Channels for connecting with Optical Heads. Each channel is identified by a channel number.

For commands that require you to specify a channel, the channel number is represented by [n] in a command.

The channel number represents the optical head's position connected into the GM8012. These numbers are displays on the top of each channel of the front panel.

For example, query the wavelength of the power meter for channel 2. The command is SENS[n] : POW : WAVELENGTH ?, you should send:

- SENS2 : POW : WAVELENGTH ?

Commands Lists

Common Commands

Command	Function
*IDN?	Identification query

***IDN?**

Syntax *IDN?

Response UC Instruments, GM8012 OPTICAL POWER METER, **SN:GG033616004,**HW Revision 1.00, **Software Revision 1.00

UC Instruments: Manufacturer
GM8012 OPTICAL POWER METER: Instrument model
*****SN:GG013601004: Serial number of this instrument
*****HW Revision 1.00: Hardware revision
**Firmware Revision 3.00: Software revision

Description The *IDN? query gets the instrument identification over the interface.

Read Commands

Command	Function
READ[n] : POW ? : POW : MAX ? : POW : MIN ?	n =1 / 2, specify either channel 1 or channel 2.

Specifying the Channel

You specify the channel by attaching a numeric suffix to the READ mnemonic. You access channel 1 by using READ1, or channel 2 by using READ2.

READ[n] : POW ?

Syntax READ[n] : POW ?
Response < VALUE>

Description This command gets a power reading from the module. The units of the number read back depend on whether the absolute or relative measurement mode is being used, and which units have been selected. The possible units are watts, dBm, or dB.

Example READ1 : POW ?
-72.711dBm
>

READ[n] : POW : MAX ?

Syntax READ[n] : POW : MAX ?
Response < VALUE>

Description This command returns the power maximum for the power meter module.

Example READ1 : POW : MAX ?
-72.711dBm
>

READ[n] : POW : MIN ?

Syntax READ[n] : POW : MIN?
Response < VALUE>

Description This command returns the power minimum for the power meter module.

Example READ1 : POW : MIN ?
-90.000dBm
>

Sense Commands

Command	Function
SENS[n]:POW	n =1 / 2, specify either channel 1 or channel 2.
: WAVELENGTH ?	
: WAVELENGTH	<VALUE>
: ATIME?	
: ATIME	<XXXXX>
: CORR:COLL:ZERO	
: RESETMINMAX	
: REF:DISP	
: REF?	
: REF	< VALUE >
: DATA:POINTS?	
: DATA:POINTS	< VALUE >
: UNIT?	
: UNIT	< XXXXX >

Specifying the Channel

You specify the channel by attaching a numeric suffix to the SENS mnemonic. You access channel 1 by using SENS 1, or channel 2 by using SENS 2.

SENS[n] : POW : WAVELENGTH ?

Syntax SENS[n] : POW : WAVELENGTH ?
Response < VALUE >

Description This command returns the wavelength setting for the power module. The returned value is in nanometer. No unit is returned in the response message.

Example SENS1 : POW : WAVELENGTH ?
1550.0
>

SENS[n] : POW : WAVELENGTH

Syntax SENS[n] : POW : WAVELENGTH < VALUE >

Description This command sets the wavelength for the power module. The unit is default to nanometer, so you do not specify the unit in this command message.

Example SENS1 : POW : WAVELENGTH 1528
Ok! >

SENS[n] : POW : ATIME?

Syntax SENS[n] : POW : ATIME ?

Response < 1ms, 2ms, 5ms, 10ms, 20ms, 50ms, 100ms, 200ms, 500ms, 1000ms, 2000ms, 5000ms, 10000ms >, String

Description This command returns the setting for the averaging time for the power module. The unit, milliseconds, is returned in the response message.

Example SENS1 : POW : ATIME ?
100ms
>

SENS[n] : POW : ATIME

Syntax SENS[n] : POW : ATIME < 1ms, 2ms, 5ms, 10ms, 20ms, 50ms, 100ms, 200ms, 500ms, 1000ms, 2000ms, 5000ms, 10000ms >

Description This command sets the averaging time for the power module. The input power signal is read and averaged over this period. When you special the averaging time, the unit should be attached.

Example SENS1 : POW : ATIME 20ms
Ok! >

SENS[n] : POW : CORR:COLL:ZERO

Syntax SENS[n] : CORR : COLL : ZERO

Description This command zeros the electrical offsets for the power module.

Example SENS1 : CORR : COLL : ZERO
Ok! >

SENS[n] : POW : RESETMINMAX

Syntax SENS[n]: RESETMINMAX

Description This command resets the power maximum and minimum values for the power meter module.

Example SENS1: RESETMINMAX
Ok! >

SENS[n] : POW : REF:DISP

Syntax SENS[n] : REF : DISP

Description This command sets the reference value for the power module from the input power signal when the power units used is dB.

Example SENS1 : REF : DISP
Ok! >

SENS[n] : POW : REF ?

Syntax SENS[n] : REF ?
Response < VALUE>

Description This command returns the reference value that is set for the power module. The returned value is in dB. No unit is returned in the response message.

Example SENS1: REF ?
-90.000
>

SENS[n] : POW : REF

Syntax SENS[n] : REF < VALUE>

Description This command sets the reference value for the power module. The unit for reference value is default to dB, so you do not specify the unit in this command message.

Example SENS1: REF -23
Ok! >

SENS[n] : POW : DATA : POINTS ?

Syntax SENS[n] : DATA : POINTS ?
Response < 1 / 2 / 3>

Description This command returns the numbers of digits after the decimal point of the power reading from the module.

Example SENS1: DATA : POINTS ?
3
>

SENS[n] : POW : DATA : POINTS

Syntax SENS[n] : DATA : POINTS < 1 / 2 / 3>

Description This command sets the numbers of digits after the decimal point of the power reading from the module.

Example SENS1: DATA : POINTS 2
Ok! >

SENS[n] : POW : UNIT ?

Syntax SENS[n] : POW : UNIT ?
Response < mW / dBm / dB >, Units

Description This command returns the unit of power reading from the module.

Example SENS1: POW : UNIT ?
dBm
>

SENS[n] : POW : UNIT

Syntax SENS[n] : POW : UNIT < mW / dBm / dB >

Description This command sets the unit of power in use. This can be watts, dBm or dB.

Example SENS1: POW : UNIT mW
>

MaxMin Mode

Command	Function
SENS[n]:	n =1 / 2, specify either channel 1 or channel 2.
: FUNC: PAR : MINM?	
: FUNC: PAR : MINM	< VALUE >

Specifying the Channel

You specify the channel by attaching a numeric suffix to the SENS mnemonic. You access channel 1 by using SENS1, or channel 2 by using SENS2.

SENS[n] : FUNC : PAR : MINM ?

Syntax SENS[n] : FUNC : PAR : MINM ?
Response < None / Continuous>

Description This command queries the operation mode of MinMax Mode for power meter module. The result is returned as a string. None means disabling the MinMax Mode. Continuous means continuous mode.

Example
```
SENS1 : FUNC : PAR : MINM ?
Continuous
>
```

SENS[n] : FUNC : PAR : MINM

Syntax SENS[n] : FUNC : PAR : MINM < OFF / CONT >

Description This command sets the operation mode of MinMax Mode for power meter module. OFF means disabling the MinMax Mode. CONT means setting to the Continuous mode.

Example
```
SENS1 : FUNC : PAR : MINM OFF
Ok! >

SENS1 : FUNC : PAR : MINM CONT
Ok! >
```