Configure Interface

Overview

Interface type	USB Device	USB 1.1 or 2.0, TypeA, female connector.
	RS-232C	D-sub 9 pin, male connector. Baud rate: 115200/57600/38400/19200/9600.

Return to Local control mode	In order to switch back to the Local control mode (front panel operation), press the LOCAL key.	2ND
		LOCAL

Configure USB interface

USB device port configuration

1. Press the Shift key, the 2ND (Menu) key, the Right key twice. The I/O configuration menu appears.

    MENU

    I/O
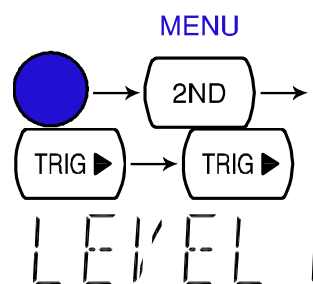
    LEVEL 1

2. Press the Down key. The USB selection display appears.

    USB

    LEVEL 2

3. Press the Down key. The USB ON/OFF selection appears.
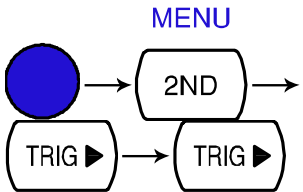
    ON

    USB
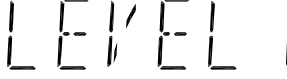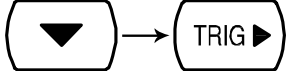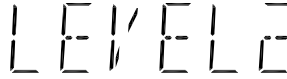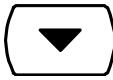
4. Press the Up/Down key to select ON or OFF.

5.	Press the ENTER key to confirm USB selection.	AUTO ENTER
6.	Press the Exit key to go back to the default display.	
7.	Connect the USB cable to the rear panel terminal (upper port).	

Configure RS-232C interface

Configuration step

1.	Press the Shift key, the 2ND (Menu) key, the Right key twice. The I/O configuration menu appears.	MENU → 2ND → TRIG ▶ → TRIG ▶ LEVEL 1
	I/O	
2.	Press the Down key, then the Right key. The RS-232C selection display appears.	▼ → TRIG ▶ LEVEL 2
	RS232	
3.	Press Enter or Down to confirm RS232 selection.	AUTO or ▼ ENTER
4.	Press the Down or UP keys repeatedly to select the baud rate. 115200⇔57600⇔38400⇔19200⇔9600	▲ ▼
5.	Press the ENTER key to confirm RS-232C and baud rate selection.	AUTO ENTER

6. Press the Exit key to go back to the default display.

7. Connect the RS-232C cable to the rear panel terminal.
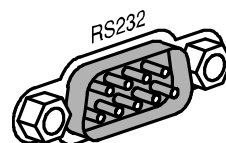
| RS-232C pin assignment | Pin 2: RxD
Pin 3: TxD
Pin 5: GND
Pin 1, 4, 6 ~ 9: No Connection |

9 8 7 6

5 4 3 2 1
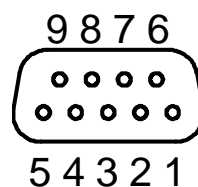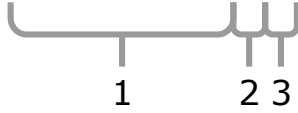
| PC – GDM RS-232C Connection | Null-modem connection, in which transmit (TxD) and receive (RxD) lines are cross-linked, is required. |

GDM   PC

Pin2 RxD   RxD Pin2

Pin3 TxD   TxD Pin3

Pin5 GND   GND Pin5
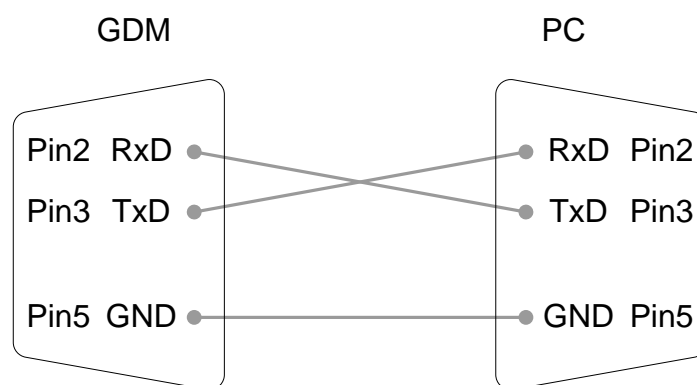
Command Syntax

The commands are partially compatible with IEEE488.2 (1992) and SCPI (1994) standard. Commands are NON-case sensitive.

Example command	conf:volt:dc _1		1: Command Header
	1 2 3		2: Single space
			3: Parameter
Parameter example	Boolean	Boolean logic: 0 or 1. Used for On (1) or Off (0) command.	
	NR1	Integer: 0, 1, 2, 3.....	
	NR2	Decimal number: 0.0, 0.1, 0.2,....	
	NR3	Floating point number: 4.5e-1, 8.5e+1,...	
	min, max	The GDM-8200A series automatically translates to Minimum (min) or Maximum (max) value available.	
Automatic parameter range selection	The GDM-8200A series automatically translates the command parameter into the closest available value.		
	Example 1	conf:volt:dc_1 (Sets the measurement item to DC Voltage and the range to 1V). the GDM-8200A series selects the 1V range.	
	Example 2	conf:volt:dc_2 (Sets the measurement item to DC Voltage and the range to 2V). There is no 2V range so the GDM-8200A series selects the closest range, 10V.	
Message Terminator (EOL)	Remote Command	Marks the end of a command line. The following messages are in accordance with IEEE488.2 standard.	
		LF, CR or CR+LF	The most common ELO character is CR+LF.
	Return Message	LF+CR	The fixed and only option.
Message Separator	; (semicolon)	Command Separator	

Command Set

- Commands are **non**-case sensitive.
- Underline means a single space (dc_1→DC 1V).
- When the parameter does not match the real value, the closest possible option is automatically selected (dc_2 [DC 2V range]→DC 10V)

CONFigure command

conf:volt:dc	Sets measurement to DC Voltage and specifies range. Parameter: NR2, min, max Example: conf:volt:dc_1 (DCV, 1V range) Example: conf:volt:dc_min (DCV, minimum range)
conf:volt:ac	Sets measurement to AC Voltage and specifies range. Parameter: NR2, min, max Example: conf:volt:ac_1 (ACV, 1V range) Example: conf:volt:ac_min (ACV, minimum range)
conf:volt:dcac	Sets measurement to DC+AC Voltage and specifies range. Parameter: NR2, min, max Example: conf:volt:dcac_1 (DC+ACV, 1V range) Example: conf:volt:dcac_min (DC+ACV, minimum range)
conf:curr:dc	Sets measurement to DC Current and specifies range. Parameter: NR2, min, max Example: conf:curr:dc_10e-3 (DCI, 10mA range) Example: conf:curr:dc_min (DCI, minimum range)
conf:curr:ac	Sets measurement to AC Current and specifies range. Parameter: NR2, min, max Example: conf:curr:ac_10e-2 (ACI, 100mA range) Example: conf:curr:ac_min (ACI, minimum range)
conf:curr:dcac	Sets measurement to DC+AC Current and specifies range. Parameter: NR2, min, max Example: conf:curr:dcac_10 (DC+ACI, 10A range) Example: conf:curr:dcac_min (DC+ACI, minimum range)
conf:res	Sets measurement to 2W Resistance and specifies range. Parameter: NR2, min, max Example: conf:res_10e3 (2W R, 10K range) Example: conf:res_min (2W R, minimum range)
conf:fres	Sets measurement to 4W Resistance and specifies range. Parameter: NR2, min, max Example: conf:fres_10e3 (4W R, 10K range) Example: conf:fres_min (4W R, minimum range)
conf:freq	Sets measurement to Frequency and specifies range.

conf:per	Sets measurement to Period and specifies range.
conf:cont	Sets measurement to Continuity.
conf:diod	Sets measurement to Diode.
conf:temp	Sets measurement to Temperature.
conf:stat:func?	Returns function of 1st display. Parameter: 1 (DCV), 2 (ACV), 3 (DCA-10A), 4 (ACA-10A), 5 (DCA-mA), 6 (ACA-mA), 7 (2WR), 8 (Freq), 9 (TempC), 10 (AC+DCA-10A), 11 (AC+DCV), 12 (AC+DCA-mA), 13 (Diode), 14 (Period), 15 (TempF), 16 (4WR), 17 (Cont.)
conf:stat:rang?	Returns range of 1st display. Parameter: DCV: 1 (100mV), 2 (1V), 3(10V), 4 (100V), 5 (1000V) ACV: 1 (100mV), 2 (1V), 3(10V), 4(100V), 5(750V) AC+DCV: 1 (100mV), 2 (1V), 3(10V), 4 (100V), 5 (1000V) DCmA, ACmA, ACmA+DCmA: 1(10mA), 2(100mA), 3(1A) 2WR, 4WR: 1(100Ω), 2(1kΩ), 3(10kΩ), 4(100kΩ), 5(1MΩ), 6(10MΩ), 7(100MΩ) DCA, ACA, AC+DCA (10A range): 1 (one range) Freq, TempC, TempF, Diode, Period, Cont.: 1 (one range)
conf:auto	Set 1st display to Auto range. Parameter: 0 (disable auto range), 1 (enable auto range)
conf:auto?	Return 1st display Auto range status. Parameter: 0 (disable auto range), 1 (enable auto range)

SENSe command

sens:det:rate	Sets detection rate. Parameter: s (slow), m (medium), f (fast) Example: sens:det:rate_s (set detection rate to Slow)
sens:det:rate?	Returns detection rate. Parameter: Slow, Mid, Fast
sens:temp:tco:type	Sets thermocouple type. Parameter: j (type J), k (type K), t (type T) Example: sens:temp:tco:type_j (set thermocouple type to J)
sens:temp:tco:type?	Returns thermocouple type. Parameter: J (type J), K (type K), T (type T)
sens:temp:rjun:sim	Set temperature simulation value. Parameter: NR2 Example: sens:temp:rjun:sim_23
sens:temp:rjun:sim?	Returns temperature simulation value.

sens:aver:tcon	Selects digital filter type. Parameter: mov (moving), rep (repeating) Example: sens:aver:tcon_mov (moving digital filter)
sens:aver:tcon?	Returns digital filter type. Parameter: MOV (moving), REP (repeating)
sens:aver:coun	Sets digital filter count. Parameter: 2 ~ 100 Example: sens:aver:coun_100 (filter count 100)
sens:aver:coun?	Returns current digital filter count. Parameter: 2 ~ 100
sens:aver:stat	Turns digital filter On/Off. Parameter: Boolean Example: sens:aver:stat_1 (digital filter On)
sens:aver:stat?	Returns digital filter status, On or Off. Parameter: Boolean

UNIT command

unit:temp	Selects temperature unit, celsius or fahrenheit. Parameter: c (celsius), f (fahrenheit) Example: unit:temp_c (temperature unit celsius)
unit:temp?	Returns temperature unit, celsius or fahrenheit. Parameter: C (celsius), F (fahrenheit)

CALCulate command

calc:func	Activates advanced measurement functions.
	Parameter: rel (relative), max (Max), hold (Hold), dbm (dBm), db(switches between dB, dB+dBV, and dB+dBm), math (Math), comp (Compare)
	Example: calc:func_math (activate math function)
	Example: calc:func_db (activate dB)
	     calc:func_db (second issue activate dB+dBV(dBm))
	     calc:func_db (third issue activate dB+dBm(dBV))

calc:func?	Returns current advanced measurement functions. Parameter: rel (relative), max (Max), hold (Hold), dbm (dBm), DB-V (dB-dBV), DB-M (dB-dBm), math (Math), comp (Compare)
calc:stat	Turns math function On/Off. Parameter: Boolean Example: calc:stat_1 (math function On)
calc:stat?	Returns math function status, On or Off. Parameter: Boolean

calc:aver:min?	Returns minimum value stored.
calc:aver:max?	Returns maximum value stored.
calc:aver:aver?	Returns average value stored.
calc:aver:coun?	Returns number of data count.
calc:rel:ref	Sets reference value in Relative value measurement. Parameter: NR2, min, max Example: calc:rel:ref_1.0 (reference value set to 1.0)
calc:rel:ref?	Returns reference value in Relative value measurement. Parameter: NR2, min, max
calc:db:ref	Sets reference value in dB measurement. Parameter: NR2, min, max Example: calc:db:ref_1.0 (reference value set to 1.0)
calc:db:ref?	Returns reference value in dB measurement. Parameter: NR2, min, max
calc:dbm:ref	Sets reference value in dBm measurement. Parameter: NR2, min, max Example: calc:db:ref_1.0 (reference value set to 1.0)
calc:dbm:ref?	Returns reference value in dBm measurement. Parameter: NR2, min, max
calc:lim:low	Sets lower limit value in Compare measurement. Parameter: NR2, min, max Example: calc:lim:low_1.0 (lower limit set to 1.0)
calc:lim:low?	Returns lower limit value in Compare measurement. Parameter: NR2, min, max
calc:lim:upp	Sets upper limit value in Compare measurement. Parameter: NR2, min, max Example: calc:lim:low_1.0 (upper limit set to 1.0)
calc:lim:upp?	Returns upper limit value in Compare measurement. Parameter: NR2, min, max
calc:math:mmf	Sets factor(M) in Math measurement. Parameter: NR2 Example: calc:math:mmf_1.03 (Math factor set to 1.03)
calc:math:mmf?	Returns factor(M) in Math measurement. Parameter: NR2
calc:math:mbf	Sets offset(B) in Math measurement. Parameter: NR2 Example: calc:math:mbf_10 (Math offset set to 10)
calc:math:mbf?	Returns offset(B) in Math measurement. Parameter: NR2

calc:math:perc	Sets target value in Math measurement. Parameter: NR2 Example: calc:math:perc_50 (target set to 50)
calc:hold:ref	Set percentage of Hold function. Parameter: 0 to 99, min, max
calc:hold:ref?	Return percentage of Hold function. Parameter: 0 to 99

TRIGger command

read?	Returns 1st and 2nd display value.
val1?	Returns 1st display value.
val2?	Returns 2nd display value.
trig:sour	Selects trigger source. Parameter: int (internal), ext (external) Example: trig:sour_ext (External trigger selected)
trig:sour?	Returns current trigger source. Parameter: INT (internal), EXT (external)
trig:del	Sets trigger delay in milli-seconds. Parameter: 0 ~ 9999, min, max Example: trig:del_50 (trigger delay set at 50ms) Example: trig:del_min (trigger delay set at minimum 1ms)
trig:del?	Returns trigger delay in milli-seconds. Parameter: 0 ~ 9999, min, max
trig:auto	Turns trigger auto mode On or Off. Parameter: 1 (on), 0 (off) Example: trig:auto_1 (trigger auto mode On)
trig:auto?	Returns current trigger auto mode. Parameter: 1 (on), 0 (off)
samp:coun	Sets number of sampling. Parameter: NR1 (1 to 127) Example: samp:coun_10 (sampling set at 10)
samp:coun?	Returns number of sampling. Parameter: NR1 (1 to 127)
trig:coun	Sets number of trigger counting. Parameter: NR1 (1 to 127) Example: trig:coun_100 (trigger count set at 100)
trig:coun?	Returns number of trigger count. Parameter: NR1 (1 to 127)
trac:data?	Returns buffer contents.

trac:cle	Clears buffer contents.

SYStem related command

syst:disp	Turns display On or Off. Parameter: Boolean Example: disp_1 (display On)
syst:disp?	Returns display status, On of Off. Parameter: Boolean
syst:beep:stat	Select beep mode. Parameter: 0 (Off), 1 (Pass), 2 (Fail) Example: syst:beep:stat_1 (Beep when pass)
syst:beep:stat?	Returns beep mode status. Parameter: No beep, Beep on Pass, Beep on Fail
syst:err?	Returns current system error, if there is any.
syst:vers?	Returns system version. Parameter: 1.00 ~
*rst	Reset system.
*idn?	Returns company name, model No., and system version. Example: GW, GDM8255A, 1.0

STAtus reporting command

stat:ques:enab	Enable bits in the Questionable Data register.
stat:ques:enab?	Returns Questionable Data register contents in decimal number.
stat:ques:even?	Returns Questionable Data event register contents in decimal number.
stat:pres	Clear Questionable Data enable register.

RS-232C interface command

syst:loc	Enables front panel control and disables remote control
syst:rem	Enables remote control and disables front panel control

IEEE 488.2 common command

*cls	Clears event status register (Output Queue, Operation Event Status, Questionable Event Status, Standard Event Status)
*ese?	Returns ESER (Event Status Enable Register) contents. Example: 130 means ESER=10000010

*ese <0~255>	Sets ESER contents. Example: *ese 65 sets ESER to 01000001
*esr?	Returns and clears SESR (Standard Event Status Register). Example: 198 means SESR=11000110
*idn?	Returns company name, model No., and system version. Example: GW, GDM8255A, 1.0
*opc?	"1" is placed in the output queue when all the pending operations are completed.
*opc	Sets operation complete bit (bit0) in SERS (Standard Event Status Register) when all pending operations are completed.
*psc?	Returns power On clear status. Parameter: 0 (cleared), 1 (not cleared)
*psc	Clears power On status. Parameter: 0 (clear), 1 (don't clear)
*rst	Recalls default panel setup (reset the device).
*sre?	Returns SRER (Service Request Enable Register) contents. Example: 3 means SRER=00000011
*sre <0~255>	Sets SRER contents. Example: *SRE 7 SRER=00000111
*stb?	Returns SBR (Status Byte Register) contents. Example: 81 means SBR=01010001
*trg	Manually triggers the GDM-8200A series.

ROUTe command

rout:clos	Close specified scanner channel. Parameter: NR1, min, max Example: rout:clos_102 (close channel102
rout:open:all	Opens all scanner channels.
rout:mult:open	Enable all channels in specified range. Parameter: beginning channel, end channel Example: rout:mult:open 105, 110 (105 to 110 enabled, others disabled)
rout:mult:clos	Disable all channels in specified range. Parameter: beginning channel, end channel Example: rout:mult:clos 105, 110 (105 to 110 disabled, others enabled)
rout:mult:stat?	Returns scanner box all channel status. Parameter: 101 ON, 102 OFF, ... 201 ON, 202 OFF...

rout:chan	Configure channel in advanced mode. Parameter: Channel, Function, Range, Auto Range Example: rout:chan 101, 1, 2, 0 (Channel 101, Function 1 (DCV), Range 2 (DCV 1V), Disable Auto Range)
rout:chan?	Return channel configurations in advanced mode. Parameter: Channel, Function, Range, Auto Range Example: 101, 1, 2, 0 (Channel 101, Function 1 (DCV), Range 2 (DCV 1V), Disable Auto Range)
rout:del	Set delay timer for scan. Parameter: 0 to 9999 (ms)
rout:del?	Return delay timer setting for scan. Parameter: 0 to 9999 (ms)
rout:coun	Set number of count for scan. Parameter: 1 to 999
rout:coun?	Return number of count for scan. Parameter: 1 to 999
rout:func	Enable scan related functions. Parameter: 0 (scan off), 1 (monitor), 2 (step), 3 (scan), 4 (advance)
rout:func?	Return scan related function status. Parameter: 0 (scan off), 1 (monitor), 2 (step), 3 (scan)

Secondary display: CONFigure2 command

conf2:volt:dc	Configure 2nd display to DC Voltage. Parameter: NR2, min, max Example: conf2:volt:dc_1 (DC Voltage, 1V range)
conf2:volt:ac	Configure 2nd display to AC Voltage. Parameter: NR2, min, max Example: conf2:volt:ac_1 (AC Voltage, 1V range)
conf2:curr:dc	Configure 2nd display to DC Current. Parameter: NR2, min, max Example: conf2:curr:dc_10e-3 (DC Current, 10mA range)
conf2:curr:ac	Configure 2nd display to AC Current. Parameter: NR2, min, max Example: conf2:curr:ac_10e-3 (AC Current, 10mA range)
conf2:res	Configure 2nd display to 2W Resistance. Parameter: NR2, min, max Example: conf2:res_10e2 (2W Resistance, 1kΩ range)
conf2:fres	Configure 2nd display to 4W Resistance. Parameter: NR2, min, max Example: conf2:fres_10e2 (Resistance, 1kΩ range)

conf2:freq	Configure 2nd display to Frequency.
conf2:per	Configure 2nd display to Period.
conf2:temp	Configure 2nd display to Temperature.
conf2:off	Turn off the dual display mode (2nd display is off)
conf2:stat:func?	Returns function of 2nd display. Parameter: 1 (DCV), 2 (ACV), 3 (DCA-10A), 4 (ACA-10A), 5 (DCA-mA), 6 (ACA-mA), 7 (2WR), 8 (Freq), 9 (TempC), 10 (AC+DCA-10A), 11 (AC+DCV), 12 (AC+DCA-mA), 13 (Diode), 14 (Period), 15 (TempF), 16 (4WR), 17 (Cont.)
conf2:stat:rang?	Returns range of 2nd display. Parameter: DCV: 1 (100mV), 2 (1V), 3(10V), 4 (100V), 5 (1000V) ACV: 1 (100mV), 2 (1V), 3(10V), 4(100V), 5(750V) AC+DCV: 1 (100mV), 2 (1V), 3(10V), 4 (100V), 5 (1000V) DCA, ACA, AC+DCA: 1(10mA), 2(100mA), 3(1A) 2WR, 4WR: 1(100Ω), 2(1kΩ), 3(10kΩ), 4(100kΩ), 5(1MΩ), 6(10MΩ), 7(100MΩ) DCA, ACA, AC+DCA (10A range): 1 (one range) Freq, TempC, TempF, Diode, Period, Cont.: 1 (one range)
conf2:auto	Set 2nd display to Auto range. Parameter: 0 (disable auto range), 1 (enable auto range)
conf2:auto?	Return 2nd display Auto range status. Parameter: 0 (disable auto range), 1 (enable auto range)