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## 1. Summary

These programs can change the setting of Power Hitester and read from Power Hitester through GPIB or RS232. This program is divided into some VI according to function. In this version, the program can not deal with all control commands of Power Hitester

## 2.Prerequisite condition

The following is the prerequisite condition of using this program

- Know LabVIEW

## 3.How to use driver

Search for the Vi(driver) which deals with the control command of Power Hitester from program library, open the VI, connect the VISA session which was opened. Set the Set/query, When performing setting, it is necessary to select the right parameters

Almost all of the drivers have 3 common inputs and 2 common outputs as the following  
The details of common inputs and common outputs is described in the chapter 4-2.

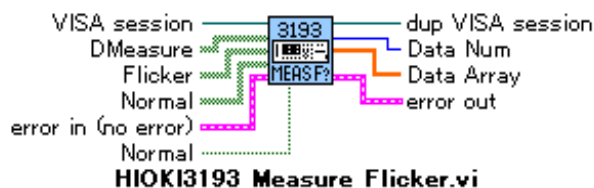
input

VISA session	on the top-left
Set/Query (F: Set)	next to the VISA session
error in (no error)	on the left of bottom-left

output

dup VISA session	on the top-right
error out	on the bottom-right

Example: HIOKI3193 Measure Flicker.vi



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#### 4.Direction for driver use

##### 4-1. Sort of Vi

The following is about drivers which are in program library




No.	name	function
1	HIOKI3193 Conf Data ITEM Harmonic.vi	Sets or queries the output items.
2	HIOKI3193 Conf Display Harmonic.vi	Sets or queries the display items on the harmonic screen.
3	HIOKI3193 Harmonic.vi	Sets or Queries the items about the harmonic.
4	HIOKI3193 Measure Harmonic.vi	Queries the harmonic analysis data.
5	HIOKI3193 Conf Measure ITEM Harmonic.vi	Sets or queries the output items for the harmonic.
6	HIOKI3193 Zeroadjust Harmonic.vi	Carries out the zero adjustment of 9605. (for the harmonic analysis mode)
7	HIOKI3193 Conf Data ITEM Flicker.vi	Sets or queries the output items for the flicker.
8	HIOKI3193 Conf Display Flicker.vi	Sets or queries the display items on the Flicker measurement screen.
9	HIOKI3193 Flicker.vi	Sets or queries the items about the flicker.
10	HIOKI3193 Measure Flicker.vi	Queries the flicker measurement data.
11	HIOKI3193 Conf Measure ITEM Flicker.vi	Sets or queries the output items for the flicker.
12	HIOKI3193 Zeroadjust Flicker.vi	Carries out the zero adjustment of 9605. (for the flicker measurement)
13	HIOKI3193 Conf Select Harmonic Flicker.vi	Selects the harmonic analysis or the flicker measurement, queries the setting of harmonic analysis or flicker measurement..

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## 4-2. The common input and common output of driver

All of the drivers have common inputs and outputs. The following is explanation.



### 4-2-1. The common input of driver

Name	Data type	Explanation
VISA Session		VISA session
Set/Query (F: Set) *1*2		Selects the setting mode or the querying mode. Valid range: False(=Set: Default), True(=Query).
error in (no error)		The input of error( refer to the manual of LabVIEW to get details). Initialized value: no error.

\*1 There is not Set/Query switch, If the driver has only setting function or querying function,  
In this version there are some drivers which have not reading function

\*2 When using querying function, it is necessary to set response header to OFF.

### 4-2-2. The common output of driver

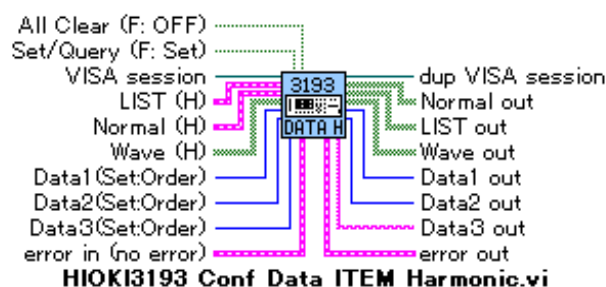
Name	Data type	Explanation
dup VISA Session		The copy of VISA session.
error out		The output of error( refer to the manual of LabVIEW to get details).











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### 4-3. Details of drivers

#### 4-3-1. HIOKI3193 Conf Data ITEM Harmonic.vi

Sets or queries the output items.

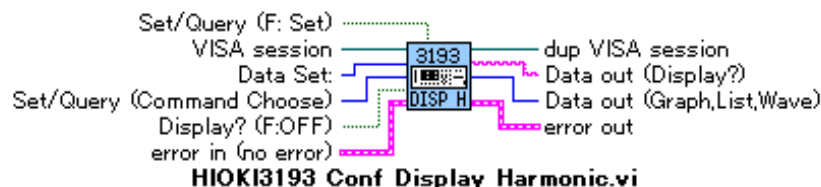








Name	Data type	Explanation
ALL Clear(F:OFF)		Clears all output items for the harmonic default. Valid range: False(=OFF: Default), True(=ON).
Set/Query(F:Set)		Selects the setting or querying function. Valid range: False(=Set: Default), True(=Query).
LIST(H)		Sets the output items for the harmonic list. Valid range: <data1>~ <data6> 0~63.
Normal(H)		Sets the output items for the harmonic measurement value. Valid range: <data1>~ <data5> 0~63.
Wave(H)		Sets the output items for the harmonic waveform data. 2D array(6*3, True=1,False=0).
Data1(Set:Order)		Sets the output items for the harmonic order. Data1(Set:Order): Lower limit order, valid range: 0~50.
Data2(Set:Order)		Data2(Set:Order): Upper limit order, valid range: 0~50.
Data3(Set:Order)		Data3(Set:Order): Selects ODD/EVEN/ALL.
Normal out		The result of querying the output items for the harmonic measurement value.
LIST out		The result of querying the output items for the harmonic list.
Wave out		The result of querying the output items for the harmonic waveform data.
Data1 out		The result of querying the output order of harmonic data. Data1 out: The result of querying the lower limit order.
Data2 out		Data2 out: The result of querying the upper limit order.
Data3 out		Data3 out: The result of querying the ODD/EVEN/ALL.

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#### 4-3-2. HIOKI3193 Conf Display Harmonic.vi

Sets or queries the display items on the harmonic screen.



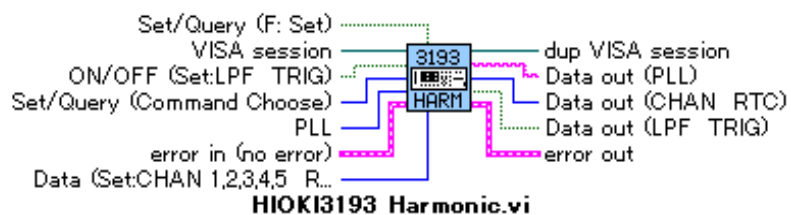
Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or querying function. Valid range: False(=Set: Default), True(=Query).
Data Set:		Selects data.
Set/Query (Command Choose)		Selects items for setting or querying. Graph: The display items on the harmonic graph screen. Valid range: 1~3. List: The display items on the harmonic list screen. Valid range: 1~3. Vector: The display items on the harmonic vector screen. *1 No data Wave: The display items on the harmonic waveform screen. Valid range: 1~3.
Display? (F:OFF)		Queries the display items on the harmonic screen. Valid range: False(Default), True(=Display).
Data out(Display?)		The result of querying the display items on the harmonic screen.*2
Data out(Graph,List,Wave)		The result of querying the display items on the harmonic graph screen or the display items on the harmonic list screen or the output items for the harmonic waveform screen.

\*1 No querying function.

\*2 When the switch 「Set/Query(F:Set)」 is not on “Query”, the switch 「Display? (F:OFF)」 is invalid.

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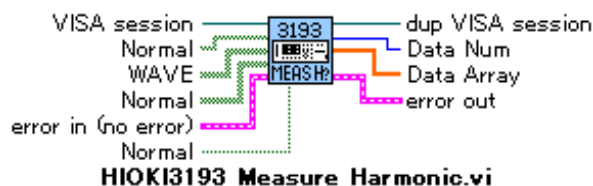
4-3-3. HIOKI3193 Harmonic.vi  
Sets or Queries the items about the harmonic.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or querying function. Valid range: False(=Set: Default), True(=Query).
ON/OFF(Set:LPF TRIG)		Sets the time constant or the trigger mode. Valid range: False(=OFF: Default), True(=ON).
Data Set:		Selects data.
Set/Query/( Command Choose)		Selects setting or querying items Channel: The harmonic analysis channel. Valid range: 1~5. LPF: The time constant Valid range: ON/OFF. PLL: The PLL source of harmonic analysis. Valid range: HU1, HU2, HU3, HI1, HI2, HI3. RTC: The harmonic RTC counter. Valid range: 0~10000. TRIGger: The trigger mode. Valid range: ON/OFF.
Data(Set:CHAN 1.2.3.4.5 R...		Selects the harmonic analysis channel.
Data out(PLL)		The result of querying the PLL source of harmonic analysis.
Data out( CHAN RTC)		The result of querying the harmonic analysis channel or the harmonic RTC counter.
Data out( LPF TRIG)		The result of querying the time constant or the trigger mode.

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4-3-4. HIOKI3193 Measure Harmonic.vi  
Queries the harmonic analysis data.



Name	Data type	Explanation
Normal		1D array. Selects HU1,HU2,HU3,HI1,HI2,HI3,HP1,HP2,HP3.HPSUM
WAVE		2D array(4*3). Selects HPUP1,HPUP2,HPUP3,HMUP1,HMUP2,HMUP3,HPIP1,HPIP2,HPIP3, HMIP1,HMIP2,HMIP3.
Normal		2D array(4*3). Selects HTRU1,HTRU2,HTRU3,HTFU1,HTFU2,HTFU3,HTRI1,HTRI2,HTRI3, HTFI1,HTFI2,HTFI3.
Normal		Selects HF.
Data Num		The number of output data. Range: 0~
Data Array		The data of output. (refer to the manual of 3193 unit to get details)

The following is the order of output data, after pressing the button of the HIOKI3193 Measure Harmonic.vi to specify items for measurement.



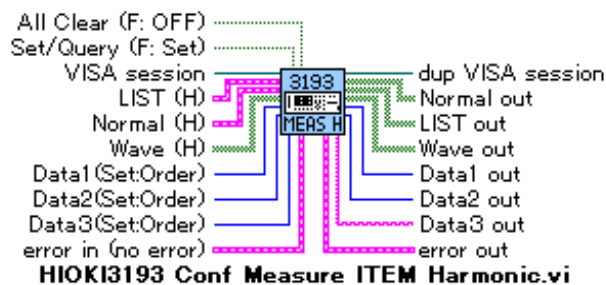
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The following table shows the order of output in the order of output items(1~11).  
In every item, the data is outputted in order of Data1~Data6 only if it is specified.  
In this case, the item which can not be measured has no output even if it was elected.

Order of items	Output items	Data1	Data2	Data3	Data4	Data5	Data6
1	rms value	HU1	HU2	HU3	HI1	HI2	HI3
2	power	HP1	HP2	HP3	HPSUM	-	-
3	+peak	HPUP1	HPUP2	HPUP3	-	-	-
4	-peak	HMUP1	HMUP2	HMUP3	-	-	-
5	+peak	HPIP1	HPIP2	HPIP3	-	-	-
6	-peak	HMIP1	HMIP2	HMIP3	-	-	-
7	THD-R	HTRU1	HTRU2	HTRU3	-	-	-
8	THD-F	HTFU1	HTFU2	HTFU3	-	-	-
9	THD-R	HTRI1	HTRI2	HTRI3	-	-	-
10	THD-F	HTFI1	HTFI2	HTFI3	-	-	-
11	frequency	HF	-	-	-	-	-

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4-3-5. HIOKI3193 Conf Measure ITEM Harmonic.vi  
Sets or queries the output items for the harmonic.



Name	Date type	Explanation
ALL Clear(F:OFF)		Clears all harmonic default output items. Valid range: False(=OFF: Default), True(=ON).
Set/Query(F:Set)		Selects the setting or querying function. Valid range: False(=Set: Default), True(=Query).
LIST(H)		Sets the output items for the harmonic list. Valid range: <data1>~ <data6> 0~63.
Normal(H)		Sets the output items for the harmonic measurement value. Valid range: <data1>~ <data5> 0~63.
Wave(H)		Sets the output items for the harmonic waveform data. Two dimensions array(6*2, True=1,False=0).
Data1(Set:Order)		Sets the output items for the harmonic order. Data1(Set:Order): Lower limit order, valid range: 0~50.
Data2(Set:Order)		Data2(Set:Order): Upper limit order, valid range: 0~50.
Data3(Set:Order)		Data3(Set:Order): Selects ODD/EVEN/ALL.
Normal out		The result of querying the output items for the harmonic measurement value.
LIST out		The result of querying the output items for the harmonic list.
Wave out		The result of querying the output items for the harmonic waveform data.
Data1 out		The result of querying the output order of harmonic data. Data1 out: The result of querying lower limit order.
Data2 out		Data2 out: The result of querying upper limit order.
Data3 out		Data3 out: The result of querying ODD/EVEN/ALL.

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4-3-6. HIOKI3193 Zeroadjust Harmonic.vi

Carries out the zero adjustment of the 9605. (for the harmonic analysis mode)

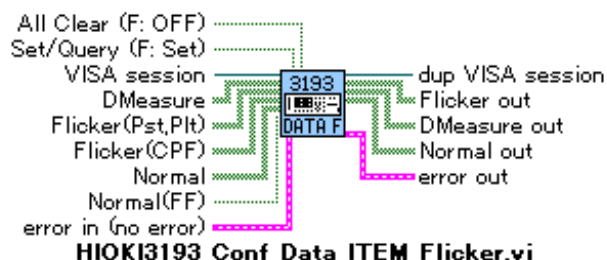


Name	Data type	Explanation
		There is no input and no output except common inputs and common outputs

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#### 4-3-7. HIOKI3193 Conf Data ITEM Flicker.vi

Sets or queries the output items for the flicker.

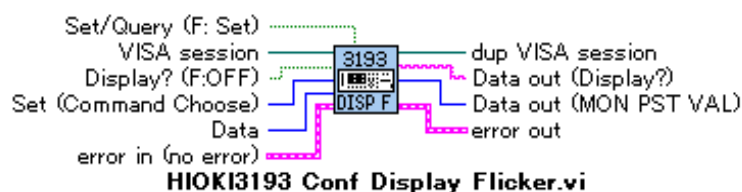








Name	Data type	Explanation
ALL Clear(F:OFF)		Clears all Output items for the flicker measurement default. Valid range: False(=OFF: Default), True(=ON).
Set/Query(F:Set)		Selects the setting or querying function. Valid range: False(=Set: Default), True(=Query).
DMeasure		Set output items for the d measurement. Valid range: <data1>~<data4> 0~7.
Flicker(Pst,Plt)		Sets the output items for the flicker value Valid range: <data1>~<data5> 0~31.
Flicker(CPF)		Selects the Value of Pst and Plt. Selects the Value of CPF
Normal		Sets the output items for the flicker measurement value. Valid range: <data1>~<data5> 0~7. Selects data1(Voltage rms value), data2(AGC output voltage), data3( $\Delta U/U$ ), data4(S(t)).
Normal(FF)		Selects data5(FF).
Flicker out		The result of querying the output items for the flicker value.
Dmeasure out		The result of querying the output items of d measurement.
Normal out		The result of querying the output items for the flicker measurement value

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#### 4-3-8. HIOKI3193 Conf Display Flicker.vi

Sets or queries the display items on the flicker measurement screen.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or querying function. Valid range: False(=Set: Default), True(=Query).
Display? (F:OFF)		Queries the display on the flicker measurement screen.
Set(Command Choose)		Selects setting or querying items CPF: The CPF curve. *1 No data. MONitor: The display form on the Monitor screen. Valid range: 1~3. PST: The display form on the Pst screen. Valid range: 1~3. Value: The display form on the Flicker measurement screen. Valid range: 1~2.
Data		Selects the input data(for the display form on the Monitor screen/the display form on the Pst screen/the display form on the flicker measurement screen).
Data out(Display?)		The result of querying the display on the Flicker measurement screen *2
Data out(MON PST VAL)		The result of querying the display form on the Monitor screen/the display form on the Pst screen/the display form on the Flicker measurement screen.

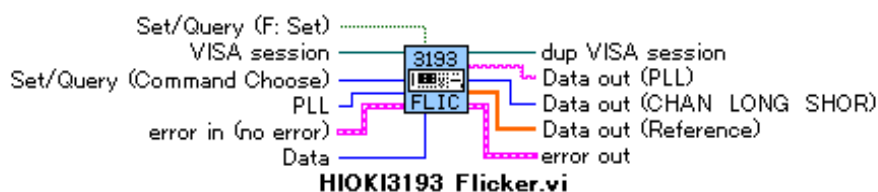
\*1 No querying function.








\*2 The switch 「Display? (F:OFF)」 is invalid, When the switch 「Set/Query(F:Set)」 is not on “Query”.

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#### 4-3-9. HIOKI3193 Flicker.vi

Sets or queries items about the flicker.

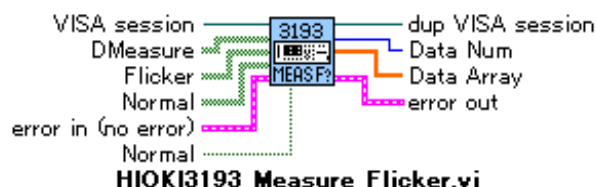


Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or querying function. Valid range: False(=Set: Default), True(=Query).
Set/Query/( Command Choose)		Selects setting or querying items Channel: The flicker analysis channel. Valid range: 1~5 Longterm: The number of flicker evaluation repetitions for a long term Valid range: 0~2000 PLL: The source of flicker measurement. Valid range: FU1,FU2,FU3. Reference: The flicker reference voltage. No data. Shortterm: The short-term flicker evaluation interval. Valid range: 0~30
PLL		Selects the source of flicker measurement.
Data		Selects the data (for the flicker analysis channel/the number of flicker evaluation repetitions for a long term/the short-term flicker evaluation interval).
Data out (PLL)		The result of querying the source of flicker measurement.
Data Out(CHAN LONG SHOR)		The result of querying the flicker analysis channel/the number of flicker evaluation repetitions for a long term/the short-term flicker evaluation interval.
Data out( Referemce)		The result of querying the flicker reference voltage.

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#### 4-3-10. HIOKI3193 Measure Flicker.vi

Queries the flicker measurement data.



Name	Data type	Explanation
DMeasure		2D array(4*3). Selects FDC1,FDC2,FDC3,FDMAX1,FDMAX2,FDMAX3, FDT1,FDT2,FDT3,FSTDY1,FSTDY2,FSTDY3.
Flicker		2D array(7*3). Selects FPST1,FPST2,FPST3,FPLT1.FPLT2,FPLT3,FP011,FP012,FP013,FP1S1, FP1S2,FP1S3,FP3S1,FP3S2,FP3S3,FP10S1,FP10S2,FP10S3,FP50S1, FP50S2,FP50S3.
Normal		2D array(4*3). Selects FU1,FU2,FU3,FAGC1,FAGC2,FAGC3, FDU1,FDU2,FDU3,FST1,FST2,FST3.
Normal		Selects FF.
Data Num		The number of output data. Range: 0~
Data Array		The data of output. (refer to the manual of 3193 to get details)

The following is the order of output data, after pressing the button of the HIOKI3193 Measure Flicker.vi to specify items for measurement.

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The following table shows the order of output in the order of output items(1～16).

In every item, the data is outputted in order of Data1～Data6 only if it is specified.

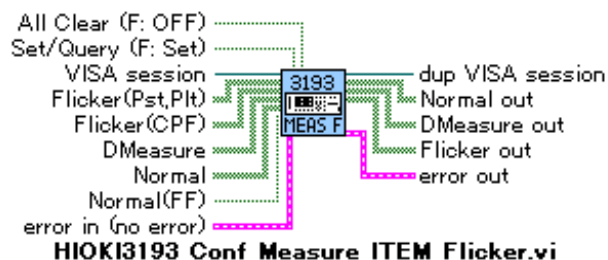
In this case, the item which can not be measured has no output even if it is elected.

Order of items	Output items	Data1	Data2	Data3	Data4	Data5	Data6
1	dc	FDC1	FDC2	FDC3	-	-	-
2	dmax	FDMAX1	FDMAX2	FDMAX3	-	-	-
3	d(t)200ms	FDT1	FDT2	FDT3	-	-	-
4	constant time	FSTDY1	FSTDY2	FSTDY3	-	-	-
5	Pst	FPST1	FPST2	FPST3	-	-	-
6	Plt	FPLT1	FPLT2	FPLT3	-	-	-
7	CPF(ch1～ch3)	FP011	FP012	FP013	-	-	-
8	CPF(ch1～ch3)	FP1S1	FP1S2	FP1S3	-	-	-
9	CPF(ch1～ch3)	FP3S1	FP3S2	FP3S3	-	-	-
10	CPF(ch1～ch3)	FP10S1	FP10S2	FP10S3	-	-	-
11	CPF(ch1～ch3)	FP50S1	FP50S2	FP50S3	-	-	-
12	voltage rms value	FU1	FU2	FU3	-	-	-
13	AGC output voltage	FAGC1	FAGC2	FAGC3	-	-	-
14	$\Delta U/U$	FDU1	FDU2	FDU3	-	-	-
15	S(t)	FST1	FST2	FST3	-	-	-
16	frequency	FF	-	-	-	-	-



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4-3-11. HIOKI3193 Conf Measure ITEM Flicker.vi  
Sets or queries the output items for the flicker.



Name	Data type	Explanation
ALL Clear(F:OFF)		Clears all Output items for the flicker measurement default. Valid range: False(=OFF: Default), True(=ON).
Set/Query(F:Set)		Selects the setting or querying function. Valid range: False(=Set: Default), True(=Query).
Flicker(Pst,Plt)		Sets the output items for the flicker value Valid range: <data1>~<data5> 0~31. Selects the Value of Pst or Plt.
Flicker(CPF)		Selects the Value of CPF
DMeasure		Set output items for d measurement. Valid range: <data1>~<data4> 0~7.
Normal		Sets the output items for the flicker measurement value. Valid range: <data1>~<data5> 0~7. Selects data1(Voltage rms value), data2(AGC output voltage), data3( $\Delta U/U$ ), data4(S(t)).
Normal(FF)		Selects data5(FF).
Normal Out		The result of querying the output items for the flicker value.
DMeasure Out		The result of querying the output items of d measurement.
Flicker Out		The result of querying the output items for the flicker measurement value

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4-3-12. HIOKI3193 Zeroadjust Flicker.vi

Carries out the zero adjustment of the 9605. (for the flicker measurement)



Name	Data type	Explanation
		There is no input and no output except common inputs and common outputs

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4-3-13. HIOKI3193 Conf Select Harmonic Flicker.vi

Selects the harmonic analysis or the flicker measurement, queries the setting of harmonic analysis or flicker measurement.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or querying function. Valid range: False(=Set: Default), True(=Query).
Data(Harmonic/Flicker)		Sets the harmonic analysis or the flicker measurement
Data out		The result of querying the setting of harmonic analysis or flicker measurement

\* It takes about 10 seconds to switch setting from the harmonic analysis to the flicker measurement or from the flicker measurement to the harmonic analysis.

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4-4. The Vi which is not in the program library.

4-4-1. HIOKI3193 Wait Time.vi  
Sets the waiting times.

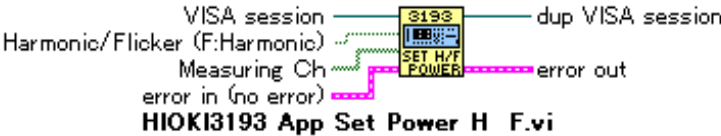


Name	Data type	Explanation
Wait times(ms)	<b>132</b>	Sets the waiting times.

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4-4-2. HIOKI3193 App Set Power H F.vi

It is a sample program, which is made up of some drivers in the program library and is utilized in the application program.



4-4-3. HIOKI3193 App Read Item H F.vi

It is a sample program, which is made up of some drivers in the program library and is utilized in the application program.



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#### 4-4-4. HIOKI3193 Demo Meas-H F.vi

It is a application program for the 3193 unit.

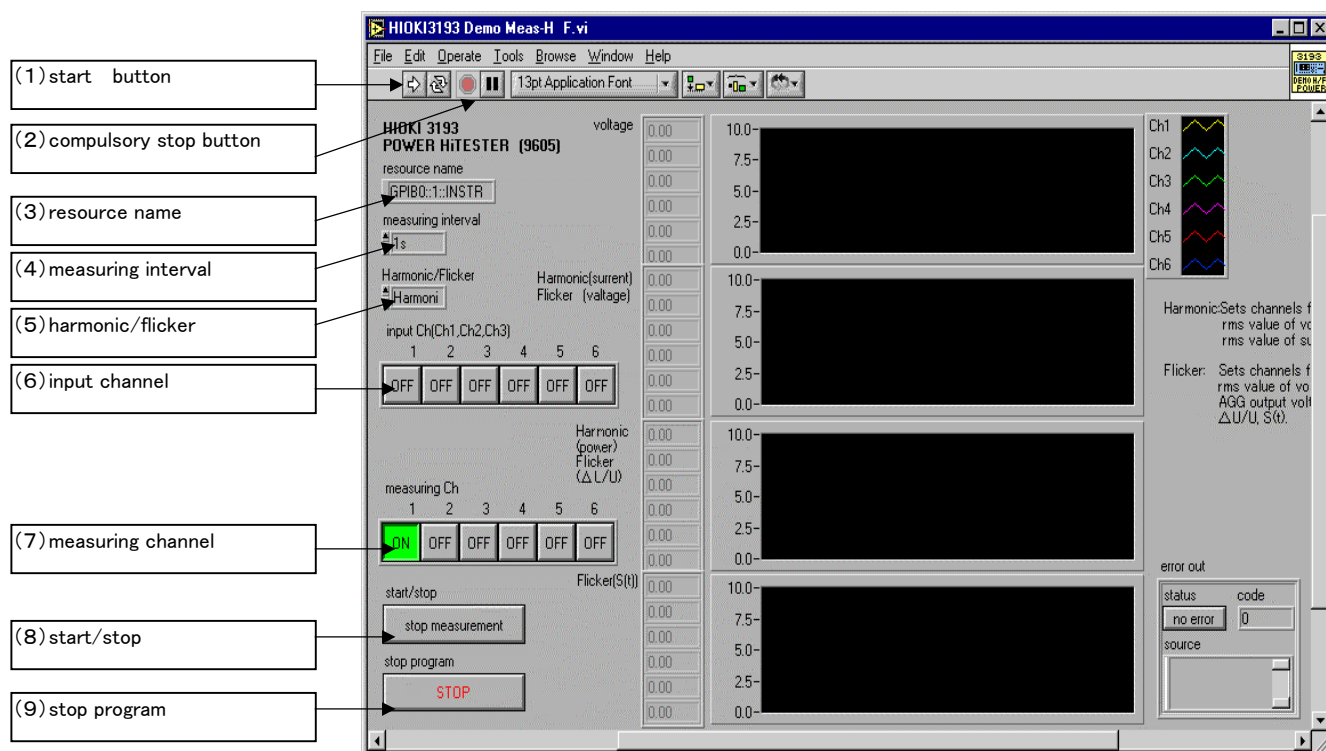


**HIOKI3193 Demo Meas-H F.vi**

#### ● The procedure of using application program.

##### 1. The method of start and stop

Open the HIOKI3193 Demo Meas-H F.vi, and the screen as follow will appears  
Click the 「(1)start button」 to start. Click the 「(9)stop program」 to stop, Click the  
「(2)compulsory stop button」 to stop by compulsion.



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## 2.The functions of application program

Select the setting of harmonic analysis mode or flicker measurement mode, select channel from channel 1 to channel 6 for measurement. measure the items of 3193 unit as the following, get the value, and display on the graphs.

In the case of harmonic analysis:

- rms value of voltage
- rms value of current
- power

In the case of flicker measurement:

- rms value of voltage
- AGC output voltage
- $\Delta U/U$
- S(t)

## 3.Selecting address of 3193 unit

Using 「(3)resource name」 to select address of 3193 unit.

The initialized input:

GPIB::1::INSTR

## 4.The procedure of use

The following is the procedure after starting the program.

- 1) Select the setting of harmonic analysis mode or flicker measurement mode by 「(5)harmonic/flicker」.
- 2) Select the channel in which there is input by「(6)input channel」.  
 ● If there is not input do nothing with「(6)input channel」.
- 3) Select value of measuring interval by 「(4)measuring Interval」, Selects the measuring channel by 「(7)measuring channel」.
- 4) Press the 「(8)start/stop」 button to start measurement.  
 → If the button is displaying 「measuring」 it means measuring.
- 5) In the case of pausing measurement,  
 press 「(8)start/stop」 again  
 →If the button is displaying 「stop measurement」, it means pausing, and  
 1) and 3) are permitted to do again
- 6) Do 4) to resume measurement.

## 5.Notes

- 1) The LabVIEW WAIT is used for measuring interval.
- 2) Refers to manual of 3193 to gets other information.

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## 5. Command table

Command name	Vi name	Note
:DATA:ITEM:HARM:ALLC :DATA:ITEM:HARM:ORD :DATA:ITEM:HARM:ORD? :DATA:ITEM:HARM:LIST :DATA:ITEM:HARM:LIST? :DATA:ITEM:HARM:NORM :DATA:ITEM:HARM:NORM? :DATA:ITEM:HARM:WAVE :DATA:ITEM:HARM:WAVE?	HIOKI3193 Conf Data ITEM Harmonic.vi	
:DISP:HARM:GRAP :DISP:HARM:GRAP? :DISP:HARM:LIST :DISP:HARM:LIST? :DISP:HARM:VECT :DISP:HARM:WAVE :DISP:HARM:WAVE? :DISP?	HIOKI3193 Conf Display Harmonic.vi	
:HARM:CHAN :HARM:CHAN? :HARM:LPF :HARM:LPF? :HARM:PLL :HARM:PLL? :HARM:RTC :HARM:RTC? :HARM:TRIG :HARM:TRIG?	HIOKI3193 Harmonic.vi	
:MEAS:HARM?	HIOKI3193 Measure Harmonic.vi	
:MEAS:ITEM:HARM:ALLC :MEAS:ITEM:HARM:ORD :MEAS:ITEM:HARM:ORD? :MEAS:ITEM:HARM:LIST :MEAS:ITEM:HARM:LIST? :MEAS:ITEM:HARM:NORM :MEAS:ITEM:HARM:NORM? :MEAS:ITEM:HARM:WAVE :MEAS:ITEM:HARM:WAVE?	HIOKI3193 Conf Measure ITEM Harmonic.vi	
:ZERO:HARM	HIOKI3193 Zeroadjust Harmonic.vi	



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#### 5. Command table(continuation)

Command name	Vi name	Note
:DATA:ITEM:FLIC:ALLC :DATA:ITEM:FLIC:DME :DATA:ITEM:FLIC:DME? :DATA:ITEM:FLIC:FLIC :DATA:ITEM:FLIC:FLIC? :DATA:ITEM:FLIC:NORM :DATA:ITEM:FLIC:NORM?	HIOKI3193 Conf Data ITEM Flicker.vi	
:DISP:FLIC:CPF :DISP:FLIC:MON :DISP:FLIC:MON? :DISP:FLIC:PST :DISP:FLIC:PST? :DISP:FLIC:VAL :DISP:FLIC:VAL? :DISP?	HIOKI3193 Conf Display Flicker.vi	
:FLIC:CHAN :FLIC:CHAN? :FLIC:LONG :FLIC:LONG? :FLIC:PLL :FLIC:PLL? :FLIC:REF :FLIC:REF? :FLIC:SHOR :FLIC:SHOR?	HIOKI3193 Flicker.vi	
:MEAS:FLIC?	HIOKI3193 Measure Flicker.vi	
:MEAS:ITEM:FLIC:ALLC :MEAS:ITEM:FLIC:DME :MEAS:ITEM:FLIC:DME? :MEAS:ITEM:FLIC:FLIC :MEAS:ITEM:FLIC:FLIC? :MEAS:ITEM:FLIC:NORM :MEAS:ITEM:FLIC:NORM?	HIOKI3193 Conf Measure ITEM Flicker.vi	
:ZERO:FLIC	HIOKI3193 Zeroadjust Flicker.vi	
:SEL :SEL?	HIOKI3193 Conf Select Harmonic Flicker.vi	

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## 6.The order of output data.

### -1.Harmonic analysis.

The following(table) is the order of outputs after setting items for measurement by HIOKI3193

Conf Measure ITEM Harmonic.vi, reading by HIOKI3193 Measure Harmonic.vi.

The following table shows the order of output in the order of output items(1~13).

In every item, the data is outputted in order of Data1~Data6 only if it is specified.

In this case, the item which can not be measured have no output even if it is elected.

Order of items	Output items	Data1	Data2	Data3	Data4	Data5	Data6
1	rms value	HU1	HU2	HU3	HI1	HI2	HI3
2	power	HP1	HP2	HP3	HPSUM	-	-
3	THD-R	HTRU1	HTRU2	HTRU3	HTRI1	HTRI2	HTRI3
4	THD-F	HTFU1	HTFU2	HTFU3	HTFI1	HTFI2	HTFI3
5	frequency	HF	-	-	-	-	-
6	harmonic level	HU1	HU2	HU3	HI1	HI2	HI3
7	harmonic level	HP1	HP2	HP3	HPSUM	-	-
8	harmonic percentage	HU1	HU2	HU3	HI1	HI2	HI3
9	harmonic percentage	HP1	HP2	HP3	HPSUM	-	-
10	harmonic phase angle	HU1	HU2	HU3	HI1	HI2	HI3
11	harmonic phase angle	HP1	HP2	HP3	-	-	-
12	+peak	HPUP1	HPUP2	HPUP3	HPIP1	HPIP2	HPIP3
13	-peak	HMUP1	HMUP2	HMUP3	HMIP1	HMIP2	HMIP3

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## -2.Flicker measurement

The following table is the order of outputs after setting items for measurement by HIOKI3193 Conf Measure ITEM Flicker.vi and reading by HIOKI3193 Measure Flicker.vi.

The following table shows the order of output in the order of output items(1~16)

In every item, the data is outputted in order of Data1~Data6 only if it is specified.

In this case, the item which can not be measured has no output even if it is elected.

Order of items	Output items	Data1	Data2	Data3	Data4	Data5	Data6
1	dc	FDC1	FDC2	FDC3	-	-	-
2	dmax	FDMAX1	FDMAX2	FDMAX3	-	-	-
3	d(t)200ms	FDT1	FDT2	FDT3	-	-	-
4	constant time	FSTDY1	FSTDY2	FSTDY3	-	-	-
5	Pst	FPST1	FPST2	FPST3	-	-	-
6	Plt	FPLT1	FPLT2	FPLT3	-	-	-
7	CPF(ch1)	FP011	FP1S1	FP3S1	FP10S1	FP50S1	-
8	CPF(ch2)	FP012	FP1S2	FP3S2	FP10S2	FP50S2	-
9	CPF(ch3)	FP013	FP1S3	FP3S3	FP10S3	FP50S3	-
10	Voltage rms value	FU1	FU2	FU3	-	-	-
11	AGC output voltage	FAGC1	FAGC2	FAGC3	-	-	-
12	$\Delta U/U$	FDU1	FDU2	FDU3	-	-	-
13	S(t)	FST1	FST2	FST3	-	-	-
14	frequency	FF	-	-	-	-	-