# EA-4000 SCPI USER GUIDE





## How to control EA with VISA resource name

## Please fallow this SOP

- 1. Open the <u>INO-EA GUI</u> which you are using
- Select from system bar [Setup] → [Config VISA]
- 3. Copy VISA resource name
- 4. Paste VISA resource name into your program



12000 - Visa Port	8888	Start		Stop	
VISA resource name	TCPIP0::172.1	5.1.129::8888::SOCk	ŒT		
📑 Untitled 1 Fr	ont Panel	* _	-		×
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VISA resource	e name				
% TCPIP0::17	2.16.1.129	::8888::SOC	KET	-	
<					>

## Setup for API to control EA7000 on PC

Before SCPI to control EA7000, please open EA7000 GUI and connect the EA7000



### Reset

### ≻ \*RST

It should be used with OPC Query

## **OPC Query**

If you set multiple commands at the same time, you must use OPC

➤ \*OPC

➤ \*OPC?

## **Identification Query**

➤ \*IDN?

### **RunCapture**

Start to capture signal

> :RUN

Connect Channel Singal Rate Pattern Lock Acquisition HW Filter SW Filter Auto Track Mask Lock   172.16.8.15 1310 nm NRZ OFF Infinite OFF O	Setup	Results	Help		ි	כ		Ru	n 🔻 Stop	Clear	Auto Scale
172.16.8.15 1310 nm NRZ OFF Infinite OFF DE	Con	nect	Channel	Singal Rate	Pattern Lock	Acquisition	HW Filter	SW Filter	Auto Track	Mask	Low Jitter Mode
	172.:	16.8.15	1310 nm Channel 1	NRZ 25.78125 GBd Rate / 64	OFF	Infinite 2048 pts/wfm 1000 wfm	OFF	OFF	OFF	OFF	ON

### **ClearData**

Clear eye diagram and measurement results

> :CDISplay

### $\overline{(\circ)}$ Setup Results Help Run Stop Clear Auto Scale Mask Connect Channel Singal Rate Pattern Lock Acquisition **HW Filter** SW Filter Auto Track Low Jitter Mode 172.16.8.15 OFF Infinite OFF OFF OFF OFF 1310 nm NRZ ON 2048 pts/wfm Channel 1 25.78125 GBd 1000 wfm Rate / 64

## **AutoScale**

Scale eye diagram automatically

> :AUToscale

Setup Results	Help		ි	Ĵ		Run 🔻 Stop Clear				
Connect	Channel	Singal Rate	Pattern Lock	Acquisition	HW Filter	SW Filter	Auto Track	Mask	Low Jitter Mode	
172.16.8.15	1310 nm Channel 1	NRZ 25.78125 GBd Rate / 64	OFF	Infinite 2048 pts/wfm 1000 wfm	OFF	OFF	OFF	OFF	ON	

### **Channel Select**

Configure EA7000 channel settings.

:WAVelength:VALue <u>1310E-9</u>

Supported wavelength: 850 1310 1550 (nm)

Setup	Results	Help		ි	כ		Ru	n 🔻 Stop	Clear	Auto Scale
Con	nect	Channel	Singal Rate	Pattern Lock	Acquisition	HW Filter	SW Filter	Auto Track	Mask	Low Jitter
172.	16.8.15	1310 nm Channel 1	NRZ 25.78125 GBd Rate / 64	OFF	Infinite 2048 pts/wfm 1000 wfm	OFF	OFF	OFF	OFF	ON

## **Acquisition Waveforms**

Configure EA7000 waveforms settings.

> :WAVeforms 1000

Waveform number should  $\geq 1000$ 

Setup F	Results	Help		Ć	כ		Ru	in 🔻 Stop	Clear	Auto Scale
Conne	ect	Channel	Singal Rate	Pattern Lock	Acquisition	HW Filter	SW Filter	Auto Track	Mask	Low Jitter
172.16	.8.15	1310 nm Channel 1	NRZ 25.78125 GBd Rate / 64	OFF	Infinite 2048 pts/wfm 1000 wfm	OFF	OFF	OFF	OFF	ON ON

### **EnableMeasurements**

Enable measurement items

Item	SCPI Command
One Level	:MEASURE:EYE:OLEV
Zero Level	:MEASURE:EYE:ZLEV
Min Level	:MEASURE:EYE:VMIN
Max Level	:MEASURE:EYE:VMAX
Peak to Peak	:MEASURE:EYE:VPP
Eye Amplitude	:MEASURE:EYE:AMPL
Eye Height	:MEASURE:EYE:EHE
Eye Width	:MEASURE:EYE:EWID
Rise Time	:MEASURE:EYE:RIS
Fall Time	:MEASURE:EYE:FALL
Jitter PP	:MEASURE:EYE:JITT:FORMat PP
Jitter RMS	:MEASURE:EYE:JITT:FORMat RMS
Crossing %	:MEASURE:EYE:CROS
Extinction Ratio	:MEASURE:EYE:ERAT
AOP uW	:MEASURE:EYE:APOW
AOP dB	:MEASURE:EYE:APOW
OMA	:MEASURE:EYE:OMAM
VECP	:MEASURE:EYE:VECP
SNR	:MEASURE:EYE:ESN

### **GetMeasurements**

Get the measurement results

Item	SCPI Command
One Level	:MEASURE:EYE:OLEV?
Zero Level	:MEASURE:EYE:ZLEV?
Min Level	:MEASURE:EYE:VMIN?
Max Level	:MEASURE:EYE:VMAX?
Peak to Peak	:MEASURE:EYE:VPP?
Eye Amplitude	:MEASURE:EYE:AMPL?
Eye Height	:MEASURE:EYE:EHE?
Eye Width	:MEASURE:EYE:EWID?
Rise Time	:MEASURE:EYE:RIS?
Fall Time	:MEASURE:EYE:FALL?
Jitter PP	:MEASURE:EYE:JITT:FORMat PP?
Jitter RMS	:MEASURE:EYE:JITT:FORMat RMS?
Crossing %	:MEASURE:EYE:CROS?
Extinction Ratio	:MEASURE:EYE:ERAT?
AOP uW	:MEASURE:EYE:APOW:UNIT uW
	:MEASURE:EYE:APOW? :MEASURE:EYE:APOW:UNIT.DBM
AOP dB	:MEASURE:EYE:APOW?
OMA	:MEASURE:EYE:OMAM?
VECP	:MEASURE:EYE:VECP?
SNR	:MEASURE:EYE:ESN?

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### **SavePic**

Capture GUI screen and save it

:DISK:SIMage:FNAMe "D:\SFPPLUS EYE\12345.JPG"

"D:\SFPPLUS EYE\12345.JPG": Path of saving picture