

Variable ISI  
Channel

# CLE1000

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## Software Operation Manual

for

CLE1000-H2K, CLE1000-H2V, CLE1000-S2, CLE1000-A2

for firmware version 1.1

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Rev 2.5

May 2015



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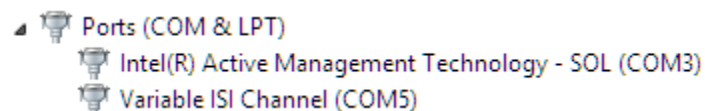
# 1. General

## 1-1 System Requirements

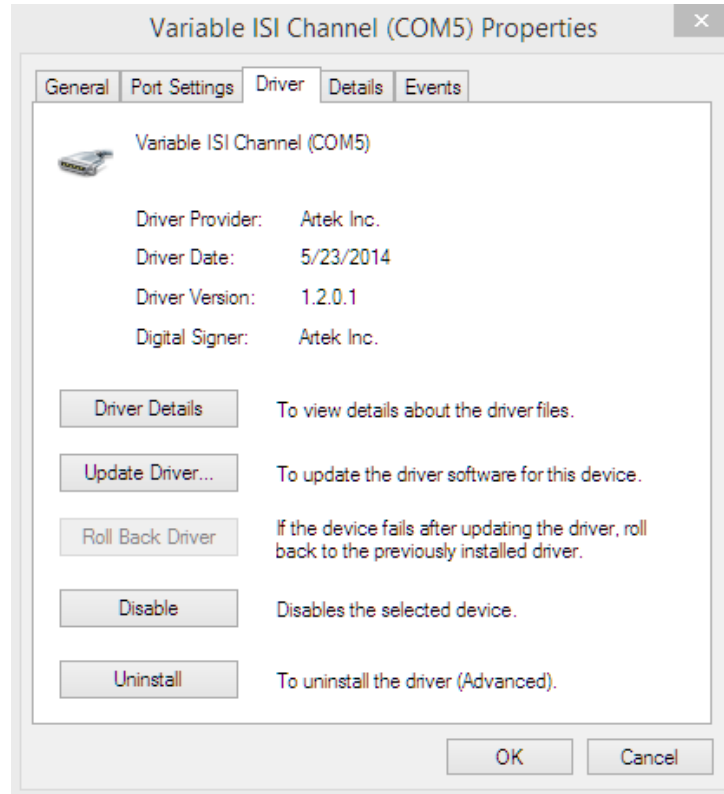
- Microsoft Windows 7 and Windows 8 Operating System
- USB2.0 Interface x1

## 1-2 Installation

- When connecting CLE1000 with PC first time, Windows request drives. Insert the install CD into your PC and specify the directory in the CD drive.
  - Unzip (extract) the software package if you got an zipped file.
  - Run "Setup" from the CD drive or the unzipped folder.
- 
- ❖ The CLE1000 is installed as one of the COM ports. Control is done by sending (or reading) IEEE compatible ANSI text to (and from) the COM port.
  - ❖ When the driver is installed correctly, you will find it at Device Manager, under Ports(COM & LTP) as "Variable ISI Channel".



- ❖ If the driver does not install correctly, do the followings.
  - Start "Device Manger" from Control Panel of MS-Windows
  - Look for "unknown device" or "CLE1000"
  - Select and double click the device, then you will see the following diagram.

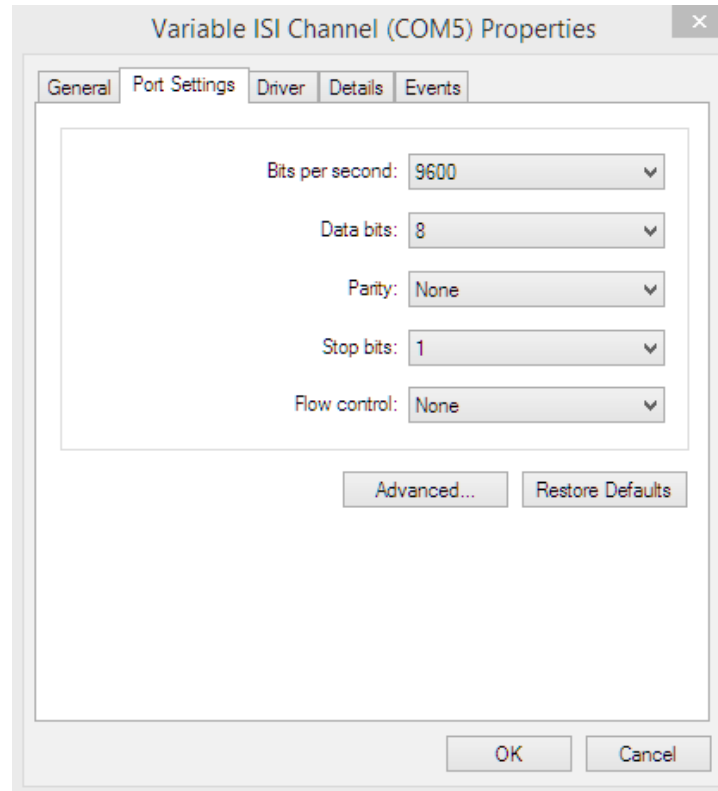


- Update the driver specifying the CD drive or the unzipped folder.

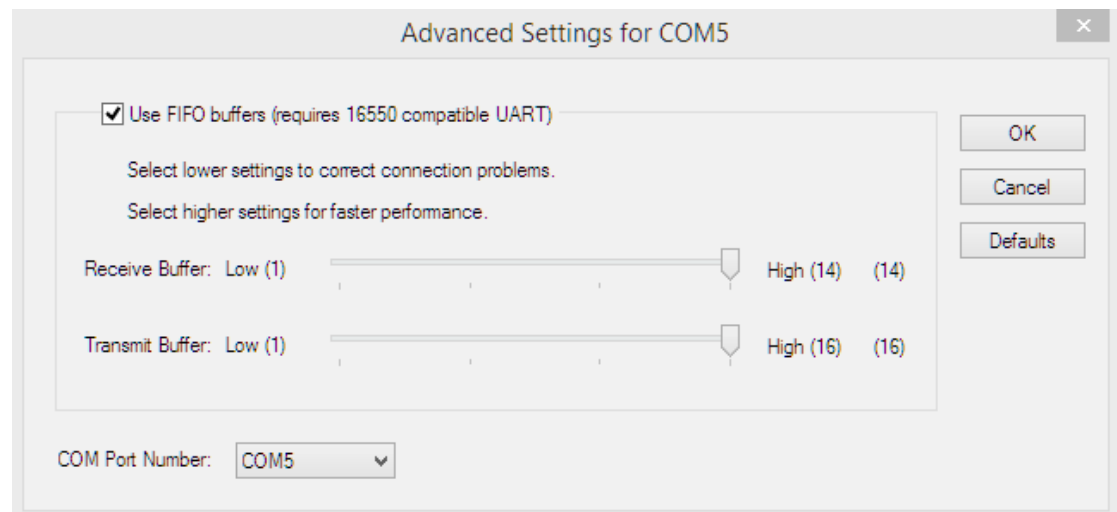
## Designating COM Port Number

The COM Port number for CLE1000 is automatically assigned by the system. You can always designate your desired number at property setting of the driver.

- Start Device Manager and double click the "Variable ISI Channel" under Ports(COM & LTP)



- Go to "Port Setting" Tab and click "Advanced".



- Change the COM Port Number.

## **1-3 Control from Other Operating System**

The operation under the operating system rather than MS-Windows 7 and 8 is not guaranteed, however the following information is disclosed for user convenience.

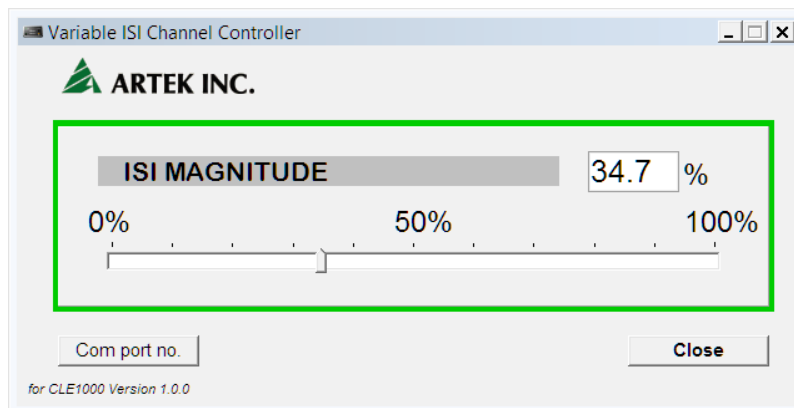
CLE1000 communicates with a remote host via USB interface. USBCDC Class is applied and handled as RS232C serial interface. CLE1000 constructs USB I/F without FTDI part, but it complies the standard USB Communications Device Class. The Communications Device Class is not OS dependent and other operation system such as Linux has drivers comply to it.

## 2. GUI

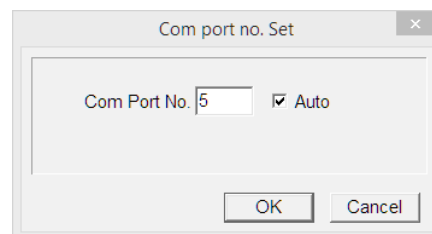
### 2-1 Stat up

Once installed, you can start GUI by clicking the icon, "CLE1000".

### 2-2 Control



- GUI is to set the amount of insertion loss by the percentage (%) value to the entire dynamic range of CLE1000. Please remember the different model of CLE1000 has different dynamic range.
- Specify the % value in the number box or by the slide bar, by the step of 0.1%.
- The COM port number can be specified if necessary.



# 3. Commands

## 3-1 Conformity

With some unique command dedicated for CLE1000, most of the commands are conformity with IEEEStd488-2 and SCPI-1990.

**LF(0x0A) is always (and only) required at the end of the command.**

## 3-2 Dedicated Commands

### ISI Value

OUTPut:ISI[:LEVEL]

Specifies the ISI (loss) amount in percentage of CLE1000's dynamic range, (0.0% - 100.0%).

#### Syntax

OUTP:ISI[:LEVEL]<NR2>

OUTP:ISI[:LEVEL]?

#### Example

OUTP:ISI:LEVEL 50.0

#### Arguments

<NR2> 0.0 ~ 100.0

#### Response

<NR2> 0.0 ~ 100.0

### ISI Output

OUTPut:ISI:STATE

Sets ISI output On/OFF

#### Syntax



OUTP:ISI:STAT<NRf>

OUTP:ISI:STAT?

**Example**

OUTP:ISI:STAT ON

**Arguments**

<NRf> ON or OFF

**Response**

<NRf> ON or OFF

### 3-3 IEEE Std488-2 Command

#### LF(0x0A) is always (and only) required at the end of the command.

##### \*CLS

Clear Status - Clears up entire status

##### Syntax

\*CLS

##### \*ESE

Event Status Enable – Specifies (or queries) the register bit value of Event Status Enable.

##### Syntax

\*ESE <NR1>

\*ESE?

##### Arguments

<NR1> 0 ~ 255

##### Response

<NR1> 0 ~ 255

##### \*ESR?

Event Status Register – Queries and clears Standard Event Status Register (SESR).

##### Syntax

\*ESR?

##### Response

<NR1> 0 ~ 255

##### \*IDN?

ID Query – Queries the device's ID code

##### Response

(example) ARTEK,CLE1000,000112179,1.00

**\*OPC**

Operation Complete – Returns “1” when all operations complete and sets OPC bit (bit0) at SESR register.

**Syntax**

\*OPC

\*OPC?

**Response**

1 for \*OPC?

**\*PSC**

Specifies whether it clears the registers for ESER and SRER at system boot.

**Syntax**

\*PSC <NR1>

\*PSC?

**Arguments**

<NR1> 0      Do not clear the register

<NR1> 1      Clears the register

**Response**

0 or 1

**\*RST**

Reset – Halts all the process and initiate the device.

**Syntax**

\*RST

**\*SRE**

Service Request Enable – Specifies (or queries) the register value of Service Request Enable (SRER)

**Syntax**

\*SRE <NR1>

\*SRE?

**Response**

<NR1> 0 ~ 255

**\*STB?**

Read Status Byte – Queries the Read Status Byte Register. Upon this command, the bit6 of STB becomes MSS.

**Syntax**

\*STB?

**Response**

<NR1> 0 ~ 255

**\*TRG**

Triger – This product does not support this function.

**\*TST?**

Selftest – This product does not support this function.

**Syntax**

\*TST?

**Response**

<NR1> 0

**\*WAI**

Wait – Halts the followed command until the current command completes.

**Syntax**

\*WAI

## 3-4 SCPI Command

### LF(0x0A) is always (and only) required at the end of the command.

#### STATus:OPERation[:EVENT]

Returns and clears the Operation Status Register value.

##### Syntax

STAT:OPER?

STAT:OPER:EVENT?

##### Response

0: None

1: No ISI value specified

#### STATus:OPERation:CONDition

Returns and the Operation Status Register value (will not clear the register).

##### Syntax

STAT:OPER:COND?

##### Response

0: None

1: No ISI value specified

#### STATus:OPERation:ENABLE

Sets and reads the value of the Operational Enable Register.

##### Syntax

STAT:OPER:ENAB <NR1>

STAT:OPER:ENAB?

##### Arguments

1 : Reflects variation of bit1 to bit 7

0: Invalidates the bit 0 variation

##### Response

0 or 1

## STATus:OPERation:EVENT

Reads and clears the Questionable Status Register.

### Syntax

STAT: QUES?

STAT: QUES:EVENT?

### Response

0 : no information

bit0 : emergency halt

bit 1: time out

When this bit is 1, a serious hardware error is suspected. The value is cleared once read, however, it will be set to 1 upon certain time period if the error is not resolved.

## STATus:QUEStionable:CONDition

Reads Questionable Status Register.

### Syntax

STAT: QUES:COND

### Response

0 : no information

bit0 : emergency halt

bit 1: time out

## STATus:QUEStionable:ENABle

Sets Questionable Status Register.

### Syntax

STAT:QUES:ENAB <NR1>

STAT:QUES:ENAB?

### Arguments

0 ~ 3: When each bit is 1, it reflects the variation to SBR register bit 3.

### Response

0 ~ 3

**STATus:PRESet**

Initializes the Status register including Operation and Questionable status registers.

**Syntax**

STAT:PRES

**SYSTEM:ERRor[:NEXT]?**

Returns the oldest error information and clears the error.

**Response**

-200,"Execution error"

**SYSTEM:VERSion?**

Returns SCPIversion

**Response**

"1990.0"

## Remote / Local

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### SYSTEM:LOCAL

Sets this device LOCAL.

#### Syntax

SYST:LOC

### SYSTEM:REMote

Sets this device REMOTE mode. Disables the controls at local device except “Local switch”.

#### Syntax

SYST:REM

### SYSTEM:LLOut

Sets this device REMOTE. Disables the controls at local device except “Local switch”.

#### Syntax

SYST:LLO



## 3-5 Tips: Initial Status

### 1) Difference between Start-up and \*RST

When System Start-up

ISI Value: as the front panel dial specifies

When \*RST executed

ISI Value becomes 0

### 2) No Trigger supported

### 3) Multiple commands can be received up to 127 letters

1. While executing a certain command, only one command (a set of commands) is accepted for next execution.
2. Commands after that are just ignored without any warnings.
3. When you send a command, make sure you get a response.
4. If no response, repeat it until you get a response.
5. Then, go to the next command.

### Command Example

**:SYS:REM**

*Sets Remote operation*

**:SYST:LLO**

*Disables the front panel operation*

**\*RST;\*OPC?**

*Initializes the output setting. Returns 1 once done.*

**:OUTPUT:ISI:LEVE 80;\*OPC?**

*Sets the ISI value to 80%. Returns 1 once done. Wait for the response and issue the next command. No response is returned when error. When error, make appropriate actions. From experiential data, it will not take more than 3 seconds to change the entire dynamic range (from 0% to 100%). You may process error action when you do not get the response for 5 seconds.*

**:SYST:LOC;\*OPC?**

*Sets Local operation. Returns 1 once done.*

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# 4 ERROR CODE

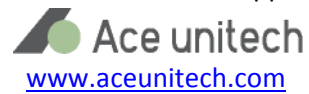
<b>0</b>	0, "No error"
<b>-100</b>	-100, "Command error"
<b>-103</b>	-103, "Invalid separator"
<b>-108</b>	-108, "Parameter not allowed"
<b>-110</b>	-110, "Command header error"
<b>-113</b>	-113, "Undefined header"
<b>-200</b>	-200, "Execution error"
<b>-201</b>	-201, "Invalid while in local"
<b>-220</b>	-220, "Parameter error"
<b>-222</b>	-222, "Data out of range"
<b>-310</b>	-310, "System error"
<b>-311</b>	-311, "Memory error"
<b>-350</b>	-350, "Queue overflow"
<b>-500</b>	-500, "Power ON"
<b>-800</b>	-800, "Operation complete"

# Customer Support

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