

MULTI PROTOCOL ANALYZER

## PC Link Software

# LE-PC300R

## Instruction Manual

Input the serial number on installation of this product.

You can see the serial number written on the package box and

Registration Card.

The actual display or manner of operation may differ from that of the instruction manual because of the improvement of the product and so on. Please refer to the online help also for the use of the software.

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### LINEEYE CO., LTD.

### Chapter 2 Introduction

Thank you for your purchase of LINEEYE's PC link software.

- To use it correctly, you are advised to read and understand this together with the instruction manual for analyzer thoroughly.
- Keep this instruction manual.

### General Description

This software allows the analyzers (LE-2500R/LE-3500R/LE-1500/LE-2500/LE-3500) to measure throught PC, and to store the monitored data in the PC via USB, AUX port (serial), Wi-Fi (LE-2500R/LE-3500R), or memory card.

### Unpacking

When you unpack the product, make sure of the following: (The light edition is included in the CD-ROM attached to the analyzer.)

CD-ROM (software)	1
Instruction Manual (This book)	1
Customer Registration Card	1

Please contact your LINEEYE distributors if you find any damage to the product caused by transportation, or if there are accessories lacking. Please be sure to register the product via our website. Without the registration, you may not be able to get support such as version-up.

### Chapter 3 Before Start-up

### Installation Guide

- 1. Insert the CD-ROM into the CD-ROM drive.
- 2. Run "setup.exe" in the CD-ROM
- 3. The setup program will start. Follow the setup instructions. The program asks you to enter the serial number when installing. When you install the light edition, enter "LITE". When you install the product version, you can find the serial number on the side of the box that contains the software (or on the registration card included in the package).
- 4. After the installation is completed, click "Finish".

### Uninstallation Guide

- 1. Click "programs and features" from the control panel. (It may differs depending on the OS.)
- 2. Select "LE-PC300R" from the list, then uninstall it.

This PC link software can control the analyzer (LE-3500R/LE-2500R/LE-3500/LE-2500/LE-1500) via USB. You need to install the USB driver to control the analyzer via PC. USB driver is stored in the CD-ROM.

Supported OS are Windows 7/8/8.1/10.

• Windows 7

- 1. Set the attatched CD-ROM into the CD-ROM drive of the PC.
- 2. Execute "setup.exe" file in "Driver" folder of the attatched CD-ROM.
- "User Account Control" appers in the display of the PC. Then click "Yes".

😗 User	Account	Control		
2		want to allow s to this comp	the following program to make uter?	
		Verified publisher:	Driver Package Installer LINEEYE CO.,LTD. CD/DVD drive	
🕑 si	now <u>d</u> etails	:	Yes No	
			Change when these notifications appea	ar i

- 4. "LINEEYE driver package installer" appears. Then click "Yes".
- 5. "Device Driver Installation Wizard" appears. Then click "Next".
- 6. Windows security window appears.

Then click "Install".



- 7. If the window says "Completing the Device Driver Installation Wizard", click "Finish".
- Connect the analyzer to the PC. The installation is completed if the message like below is appears on the task tray.

Above is the installation for Windows 7. It will be almost same for other Windows OSs.



### Analyzer Setting

<USB or Serial connection>

- 1) Connect your analyzer to the target devices you wish to measure.
- Serial connection: Connect your analyzer and a PC by the included cable (LE2-8V). USB connection: Connect by the USB cable.
- Set the AUX port of your analyzer as follows if you are using the serial connection. (You do not need to set the AUX port if you are using the USB connection.)

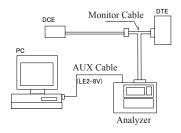
(Fixed lenght of data is 8 bit.)

<Example>

Usually, set transmission speed to 115200bps. Set data length ot 8-bit.

Recommended that parity be set to NONE. Set X-CONT (flow control ) to OFF.



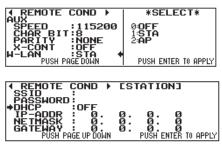


Attention

- \* Make sure to set you analyzer before starting LE-PC300R.
- \* Never turn off the power of your analyzer while connecting to the PC.
- \* Do not use the USB port while using the serial port of the analyzer
- \* Set the electric power saving mode OFF on the PC in order to maintain the connection of the PC link.

<Wi-Fi connection (LE-2500R/LE-3500R) >

- ① Connect the analyzer with the communication line to be measured.
- ② Select the W-LAN of the analyzer from STA (connection via access point) or AP (the analyzer functions as an access point).
- ③ Configure the items for the connection.
- < STATION >



Item	Contents
SSID	Set the identifier of the
	access point.
PASSWORD	Set the security key
	(encryption key).
DHCP	ON/OFF of DHCP function.
	DHCP function turns to be
	valid by setting ON.
IP-ADDR	IP address of the analyzer

PORT : 10001 + SET PORT SERVER PORT (1~65535) GATEWAY Default gateway	he analyzer	
GATEWAY Default gateway	-	K Subnet mask of the analyzer
(1~65535) (DECIMAL)		Y Default gateway
PUSH PAGE UP PUSH ENTER TO APPLY PORT Port number of the	ne analyzer	Port number of the analyzer

When you connect via internet, set the GATEWAY.
 Set "IP-ADDR", "NETMASK", "GATEWAY" when the DHCP function is invalid.

< AP >

I REMOTE COND ▶	*SELECT*			
AUX SPEED :115200 CHAR BIT:8	0:0FF 1:STA	It	tem	Contents
PARITY :NONE X-CONT :OFF	2: <b>AP</b>	S	ECURITY	Select the authentication
HUSH PAGE DOWN	PUSH ENTER TO APPLY			protocol from followings;
				OPEN, WPA, WPA2, WPA/
I REMOTE COND ► EAPI SECURITY:WPA2				WPA2
SSID PASSWORD: CHANNEL: 11		S	SID	Identifier of the analyzer
		Р.	ASSWORD	Security key (encryption
PUSH PAGE UP DOWN	PUSH ENTER TO APPLY			key).
		C	HANNEL	The channel used for Wi-Fi
	* INPUT* SET SERVER	Р	ORT	Connect port number of the
	PORT			analyzer
PUSH PAGE UP	(1~65535) (DECIMAL) PUSH ENTER TO APPLY			

Set the CHANNEL taking care not to interfere other wireless devices

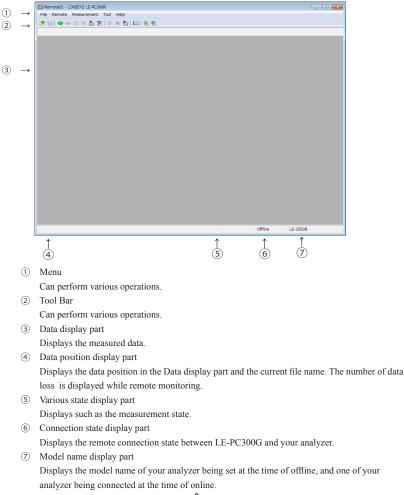
### Data Window of PC link software LE-PC300R

Starting the PC link software LE-PC300R.

Start "LE-PC300R" from the "Start" of Windows.

Usually, the following display will appear

Data Window



### Remote Setting

Click P on the tool bar of the data window (or "Remote Setting" of "Remote" menu) to set the remote setting.

The remote setting consists of "Connection", "Model selection", "Key emulation" and "Miscellaneous".

Connection

Sets the remote connection

Remote setting		×
Setting name : Rem	lote01	
Connection Model se	election Remote monitor Key emulation Miscellaneous	
Connection method :	Serial port direct 🔹	
Serial port :	COM1 V	
Speed :	115200 -	
Data bit :	8 ~	
Parity :	None	
X-Control :	Disable 👻	
L		
	OK	el

Connection Method

"Serial port direct"	: Connect via serial port of the PC or use Serial port direct
	the USB-Serial converter LAN/WI-FI (TCP/IP)
	(LE-US232B). Via SI-60 Via FA-11
"USB"	: Connect via USB port.
"LAN/Wi-Fi (TCP/IP)"	: Connect via Wi-Fi (only LE-2500R/LE-3500R)
"Via SI-60"	: Connect via SI-60 *1
"Via FA-11"	: Connect via FA-11 *2
"Via FA-21"	: Connect via FA-21 *2
*1 Vou con use SI 60	or SL 60F. To use SL 60, ALLY Cable for DSUP 25nin "LE2 8C" is

- \*1 You can use SI-60 or SI-60F. To use SI-60, AUX Cable for DSUB 25pin "LE2-8C" is required. For more detail of the SI-60/I-60F setting, read the instructions manual included in the converter.
- \*2 FA-11 and FA-21 are the products of Century Systems Co., Ltd. (LINEEYE doest not support except SI-60 and SI-60F.)

#### <Serial port direct>

Remote setting	
Setting name : Rem	ote01
Connection Model se	election Remote monitor Key emulation Miscellaneous
Connection method :	Serial port direct 🔹
Serial port :	COM1 V
Speed :	115200 👻
Data bit :	8 👻
Parity :	None
X-Control :	Disable
	OK Cancel

"Serial Port"

Selects the serial port of the PC to be connected. Enter the port name directly or you can select from the drop down list in the range of COM1 - COM9.

"Communication speed"

Set the communication speed in conformity with that of the AUX port of the analyzer.

"Data bit number"

Data bit number is fixed to 8 and cannot be changed. Set 8 to the data bit number of AUX port setting of the analyzer.

"Partity"

Set the parity of the communication data. Normally set None.

"X-Control"

On/Off of the flow control of X-control for the communication with the analyzer. Normally set None.

```
<USB>
```

Remote setting
Setting name : Remote01
Connection Model selection Remote monitor Key emulation Miscellaneous
Connection method : USB
Serial number : 999999999 -
OK Cancel

"Serial number" (USB)

Set the serial number of the analyzer to be controlled.

You can select it from the drop down list when the analyzer is connected.

```
<Wi-Fi>
```

Remote setting					×
Setting name : Rem	ote01				
Connection Model se	lection Remote monitor	Key emulation	Miscellaneous		
Connection method :	LAN/Wi-Fi (TCP/IP)	•			
Host name :					
Data port :	10101				
				ОК	Cancel

"Host name"

Set the IP address of the analyzer.

"Data Port"

Set the port number for the send/receive of the measured data. Set the same port number set to the analyzer.

#### <Via SI-60>

Remote setting		×
Setting name : Remo	note01	
Connection Madel as	election Remote monitor Key emulation Miscellaneous	
Model se	recuon Remote monitor Rey emulation Miscellaneous	
Connection method :	Via SI-60 🔻	
Host name :		
Data port :	10101 (If blank, it is auto detection)	
Control port :	(If blank, it is "30718")	
	(	
Speed :	115200 👻	
Data bit :	8 ~	
Parity :	None 💌	
X-Control :	Disable •	
A CONDOL.	Disable	
L		
	ОК	Cancel

"Host name"

Set the IP address of the SI-60.

"Data Port"

Set the port number for the send/receive of serial data. When it is blank, the value is automatically acquired, thus normally leave it blank. When the port number is changed by a router or firewall, you need to configure this item.

"Control port"

Set the control port number of the SI-60. Normally leave it blank. When the port number is changed by a router or firewall, you need to configure this item.

"Communication speed"

Set the speed in conformity with that of AUX setting of the analyzer.

"Data bit number"

Data bit number is fixed to 8 and cannot be changed. Set 8 to the data bit number of AUX port setting of the analyzer.

"Partity"

Set the parity of the communication data. Normally set None.

"X-Control"

On/Off of the flow control of X-control for the communication with the analyzer. Normally set None.

<Via FA-11>

Set as same as the case of SI-60.

Besides that, the command port (of FA11) should be set.

<Via FA-21>

Set as same as the case of FA-11.

Besides that, the serial port (which port of the two ports of FA21 is used) should be set.

### Model selection

Sets your analyzer settings. Mainly, it is used at the time of offline. However in the case of that there is information which is not received by remote communication at the time of online, it is used as it is set. In addition. if the information is received by remote communication, these settings are automatically changed.

This is an example of LE-3500R setting. Other models are almost same as this.

Remote setting					×
Setting name : Ren	note01				
Connection Model s	election Remote monito	r Key emulation	Miscellaneous		
Analyzer model :	LE-3500R	•			
Expansion board :	Standard	•			
Firmware :	Normal	•			
		~			
The settings information v	above are required when vith remote communicatio	offline, or conne ns.	cting an analyzer	which cannot acquir	e
	nformation is acquired wi with the connected analy;		nications, the set	tings will be updated	in
				ОК	Cancel

"Analyzer model"

"Expansion board"

Selects the model name of the target analyzer.

LE-3500R	-
LE-1200	٦
LE-2200	
LE-3200	
LE-7200	
LE-1500	
LE-2500	
LE-3500	
LE-1500A	
LE-1500R	
LE-2500R	
LE-3500R	

Standard	-
Standard	
OP-SB5G	
OP-SB6G	
OP-SB11	

"Firmaware"

Sets when you use optional firmware on the target analyzer.

Selects the expansion board which is equipped with a target analyzer.

Normal	-
Normal	
OP-FW10R	

#### Remote monitor

Sets the remote monitor

Remote setting	×
Setting name : Remote01 Connection Model selection Remote monitor Ke A folder to save the remote monitor data C:¥Users¥ineeyeK11¥Documents¥LEPC300R¥Ree	ry emulation Miscellaneous mote0149Uffer Change
Block size : IM Bytes v Maximum block count : 10 (2-2048)	Full stop Measurement will stop if the stored files reach maximum block count.     Append mode Without removing the existing data files when measurement starts, a newly-created file is saved in order after them.     Change file by elaposed time Record in another file when the specified time has passed.     Specify time : 24 Hour (1-24)     W Warning display     You will be warned if there is a data file on starting     measurement.
	OK Cancel

A folder to save the remote monitor data

This folder is to save data received by your analyzer for the remote monitor function.

To change the setting, click "Change" button. Then the window to select a folder appears. Select the proper folder and click "OK" button. The file name of saving data is started from "00000000.DT" in numerical order.

\* Recommends to specify an exclusive folder.

Specify a drive which has enough capacity.

(When it does not have enough capacity, the PC may not operate correctly.)

### "Block size"

Sets the data capacity per file. You can select from "1M Byte", "2M Byte", "4M Byte", "8M Byte", "16M Byte", "32M Byte", "64M Byte", or "128M Byte".

"Maximum block count"

Sets the maximum block count of a file to save. You can set from 2 to 2048. When the number of the data file is over this setting, the data

file with a small number file is deleted.

Maximum block count : 10 🗘 (2-2048)

1M Bytes

2M Bytes

4M Bytes

8M Bytes 16M Bytes 32M Bytes 64M Bytes

128M Bytes

-

"Full stop"

If the stored files reach to the maximum block count, measurement will automatically stop.

"Append mode"

When measurement starts, a newly-created file is saved in the order after the existing files. If the numbers of the whole data files are over the maximum block count setting, a data file with a small number file (includes data files which were saved on the former measurement) is deleted even in the append mode.

"Change file by elapsed time"

Create a new data file when the specified time has been elapsed, even if the size of the former data file has not reached the specified Block size. However, if the data file under recording has not recorded any data, the new data file will not be created.

"Warning display"

You will be warned if there is a data file in the files to save when starting measurement.

"Key emulation"

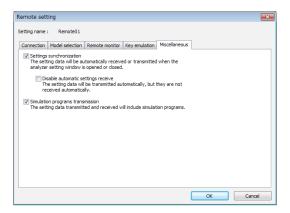
Sets the key emulation.

Remote setting	<b>X</b>
Setting name : Remote01	
Connection Model selection Remote monitor Key emulation Miscellaneous A folder to save the screen capture data C:\Users\VineeyeKH1\VDocuments\ViEPC:300R\Viewnote01\VScreen	
	Change
ОК	Cancel

#### A folder to save the screen capture data

A folder to save a screen image when you save it on the key emulation screen. Click "Change" button and the folder selecting window appears. Select the folder and click "OK".

#### "Miscellaneous"



#### Settings synchronization

\*On-Line:

Transmits and receives the setting automatically at the time of the opening and closing the analyzer setting window. If you mark on "no automatic receiving", you only transmit and do not receive.

#### \*Off-Line or While measuring:

Does not transmit the setting automatically.

You need to save the setting as a file, becuase when you open the analyzer setting window, it automatically receives the setting and overwrite it.

### Transmit Program Simulation

The setting data transmitted and received will include simulation programs.

### Chapter 6 Remote Monitor

This function allows to start measurement of your analyzer and to record measurent data in the HDD of the PC, displaying the data in real time.

### Connection

After finishing the remonte setting, click 🔹 on the tool bar of the window (or click "Connect" of the remote menu) to connect with you analyzer.

At the time of completing the connection with your analyzer, the connection state display part of the data window displays "Stopping", and the model display part displays the model name of the analyzer connected.

### Analyzer Setting

measurement menu)

Click 🎦 on the tool bar of the data window to set you analyzer (or click "Analyzer setting" of the

Model: LE-3500R	<b>—</b>		1	er setting	Analyz
- Interface     Monitor       - Data monitor     © OnLINE       - Data monitor     © OnLINE       - Configuration     © DeLAY       - Trigger 1     © TRIND       - Trigger 2     - Trigger 2       - Trigger 2     - Trigger 3       - Trigger 1     © BERT       - Simulation data table     © MANUAL       ⊕ Group 1     ⊕ Buffer       ⊕ Group 3     © FLOW       ⊕ Group 5     © POLLING       ⊕ Group 7     © PROGRAM	🎽 🖶 🔓 🔒		)R	LE-3500F	Model :
Trigger 0         BERT           Trigger 1         BERT           Trigger 2         BERT           Trigger 3         Simulation           Timer /Counter         MANUAL           Group 0         Group 1           Group 2         FLOW           Group 3         ECHO           Group 4         ECHO           Group 5         POULING           Group 7         PROGRAM			ation	iterface onitor buffer ata monitor Configurat Record an	… In … M ⊜ · Di
• Simulation data table             • Group 1             • Group 1             • Group 2             • Group 3             • Flow             • Group 5             • Group 5             • Group 7             • POLLING             • Group 7             • PROGRAM		_	er 1 er 2 er 3	Trigger Trigger Trigger Trigger	
Group 4     Group 5     Group 5     Group 7     Group 7				mulation data Group 0 Group 1 Group 2	
			_	Group 4 Group 5 Group 6 Group 7	
Group 9 Wave monitor Visiting synchronization	Close	-	-	ave monitor	W

On the analyzer setting window, every time you change the setting on a tree (on the left side of the window), the contents of the setting (on the right) are changed. Set the necessary settings. Click to send the setting contents to your analyzer. On the other hand, click to receive the setting contents of you analyzer.

\*When you continuously measure for long hours using remote monitoring, do not set "Record control" to "Full stop: On", or "Trigger" to "Action: Stop".

Click 🍋 on the toolbar of the data window to select the simulation data table you would like to set (or

click "Analyzer setting" of the measurement menu.)

lodel : LE-3500R																					l d	3	H		h.	Ê
⊡ · Trigger Trigger 0	*	16	A		Ж	Ę		ľ	B		G	9	۹	33		Po	ositi	on :	2	57		Re	mair	1:	161	127
Trigger 1 Trigger 2		U	NLL	SH	sy	Ev	Eτ	Eo	θ <sub>K</sub>	B	Bg	Н <sub>т</sub>	LF	Vτ	FF	Cp	s <sub>n</sub>	ST	D	D1	D2	D <sub>2</sub>	D <sub>4</sub>	Nĸ	Su	~
Trigger 3								68								%		,		) )						
- Timer/Counter		1			-	-	-	Б	-	-	8	9	:	:	<		>	?	ē	Â	в	Ċ	Ď	F	F	
Simulation data table		G		T		ĸ	ī.		N		P	0	R	ś	т	υ	v	Ŵ	x	Y	z	Г	~	1	^	
Group 0				a	b		d	e	f	g	h	i	1			m			p	a	-	s	+	u	v	
Table 00			×	-	z	s	i i	3		-						85				Ч 8g	88	8B	8c	8b		
Table 01	=				_	93	1															-	Ĥ4			
Table 02	-			-	-									-			-			-	BA					
Table 03						-	-		-		-	-	-	-								-	D4		-	
Table 04																										
Table 05																				E9	EA	ъB	ъC	ъD	ьE	
Table 06		۴F	F0	۴1	₽2	₹3	14	15	F6	17	18	19	۲A	۲B	FC.	FD	۴E	۴F	_							
Table 07																										
Table 08																										
Table 09																										
Table 08																										
Table 0C																										
Table 0D																										
Table 0E																										
Table 0F	-																									

- 16 : Change the data to hexadecimal or character code.
- A : Change the input method to hexadecimal or character code.
- The character which is forcused is set to the parity error (or the multi processor bit)
- G : Input BCC (or FCS)
- Input the data from "Begin data" to "End data" for the number of times set in"Data size".

"Begin data"< "End data": Inputs the number of times set in "Data size" while performing "+1" from "Begin data"

"Begin data"> "End data": Inputs the number of times set in "Data size" while performing "-1" from "Begin data"

- : Delete all data in the table.
- K : Cut selected data.
- : Copy selected data into clipboard.
- : Paste data from clipboard.

### Max speed when remote monitoring

Max speed which analyzer can measure is depending on the connection to the PC. Refere to the following standard speed.

	No frame interval	Frame interval of 1m sec
USB	670kbps	1.9Mbps
Wi-Fi	200kbps	460.8kbps
Serial	20kbps	20kbps

\*1 This result is when you monitor the full-duplex line in which 1KB frames is transmitted. For Wi-Fi connection, depending on the radio condition the speed may be lower than above value.

It will cause the data loss if the actual communication speed is more than the max. speed.
And PC will stop the action until the analyzer process all measured data to the PC.
When the measured data is lacked, will displayed on the window.
Key emulation mode will decrease the max. speed.

### Start Measurement

Click on the toolbar of the data window (or click "Run measurement" of the measurement menu) to measure. After measurement starts, "Measuring" is displayed on the state display part, and data received from your analyzer is displayed. You can change the character size (click A1), the character code, the display in hexadecimal (click 16), and the pause while measuring (click 11).

### Stop Measurement

To stop measurement, click **o** on the toolbar of the data window (or click "Stop measurement" of the measurement menu.) After stopping measurement, you can scroll data. Data is automatically saved in the folder you specified on the remote setting. To save with another name, click **o** (or click "Save data file" of the file menu.).

At the time of stopping measurement, the last file is displayed. To display all files, click 📂 (or click "Open data file" of the file menu) and select the file to display.

### Remote Monitor Screen

	2 3
	🖆 Remote01 - LINEEYE LE-PC300R
	File Remote Measurement Tool Help
	😕 🔒 🗢 🗰 🎦 🔊 👘 🔳 🔁 🖬
1)	Data monitor (Normal view) Data monitor (Frame view) Timer/Counter Wave monitor
<u> </u>	HEX 🗾 🔀 🗧 😤 🔍 🔍 💜 🗛
	DLE TMSP
	A 414949 0 00 10 0 0 10 F TMSP 0 0 414949 0 0 0 10 0 0 0 THE TMSP 0 0 414949 0 0 0 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	CO0.415 16:23
	TMSP         00414243         TIDLE         TMSP         000414243         TIDLE         TMSP
	■ 00.414243 PIDLE TMSP ■ 00.414243 PIDLE TMSP ■ F2 PIDLE TMSP ■ F2 PIDLE TMSP ■
	●         ●
	0 [12C_S3847.DT : 0]     Offline LE-3500R
	0 [I2C_S3847.DT : 0] Offline LE-3500R

There are following methods to switch the screen display.

-Change display code	Select a character code from the drop down list (marked above 1)
	which displays the character code.
-Hexadecimal display	Click 16.
	(Displays in hexadecimal including the special characters.)
-Control line information	display
	Click 🗧 .
	Click 🏊 to open the control line information setting window.
-Translated view	To switch the screen into the translated view screen, click the data
	monitor (translated view) tab (marked above 2.). Click 🥏 to
	switch the screen into the packet translated view if the packet
	translation is possible. Click the data monitor (normal view) tab to
	switch the screen into the original display screen.
-Timer / Counter	To switch the screen into the timer / counter display screen, click
	the timer / counter display tab (marked above 3).
-Wave monitor display	To switch the screen into the wave monitor display screen, click the
	wave monitor display tab.

Click 🤔 on the toolbar of the data window (or click "File" -> "Open data file") to select a file of the

measurement data. When two or more files are opened, they are displayed as continuous data.

Click "File" -> "Show data property" to check the configuration, date of measurement and so on.

Data property	<b>—</b> X—
Model: LE-3500R Extension: Standard Version: 0.93 Serial number: 28609002 Start time: 2017/02/22 15:04:23 Stop time: 2017/02/22 15:04:28	-
Function: BUFFER Protocol: ASYNC SD speed: 9600 bps RD speed: 9600 bps Data code: ASCII Data bit: 8 bits Parity: None Stop bit: 1 bit BCC: None	
	OK

### Search Data

Click  $\mathbf{Q}$  to set the search conditions on the data search window.

-Search conditions	
"Trigger"	Data which meets the trigger conditions
"Error"	Parity error/Framing error/BCC error/FCS error/Break/Abort/Short
	frame error (Data which meets what was marked).
"Character (Hex)"	The data length of a maximum of eight characters. (Can specify don't care and bit mask.)
"Character (String)"	The string length of a maximum of sixteen characters. (Can specify the
	characters in alphabet, number or symbol (in ASCII)) Data search is made
	according to the display data code.
"Idle time"	Idle time more than the appointed time.
"Time stamp"	The designated time stamp. (Can specify don't care.)
-Search operation	
"Display"	Display the matched data on the top.
WO 1 1 / 2	Display the month of a data month a d

"Calculation" Display the number of data matched.

\* To learn more details of the search condition, read the instruction manual of your analyzer.

Click Q (search the forward data) or Q (search the backward data) to search and calculate data.

### Chapter 7 Bit Error Rate Test (BERT)

Bit error rate test (BERT) can monitor the quality of communication lines in the long distance.

### Start Measurement

Click  $\bigcirc$  on the toolbar of the data window (or click "Run measurement" of the measurement menu). After measurement starts, the following screen appears.

📇 Remote01 - LINEEYE LE-PC	300R			
File Remote Measurem	ent Tool Help			
8 🔒 🗢 🗰 🗄 🖷 🚠	ی 💀 🕒 🔚 🗉 🖉			
Bit error rate test				
🗑 🛗 🕇+ 5+ 🛛				
Savail :	Sync. loss :	0		
Receive bit : 0	Receive block :	0		
	Error block :	0		
Bit error rate : 0.00e+0	block cirror rate r			
Error second : 0	%E.F.S. : 100.0	10		
0 [I2C_S3847.DT:0]			Offline	LE-3500R

	: Start BERT.
	: Stop BERT. (The test pattern is still output.)
<b>1</b> +	: Output error of 1 bit.
5+	: Output continuous error of 5 bits.
00	: Pause on updating display.
<b>F</b>	: In the case of the repeat mode BERT, multiple results can be received and converted
	into CSV when measurement stops. Converted results are saved as BERTDATA.csv.
<b>F</b>	: Convert the BERT results of the repeat mode saved on the analyzer (saved on the CF
	card.) into CSV.
<b></b>	: Save BERT results. In the repeat mode, press "Text conver
	sion" to save the history as the CSV file, because only the latest result is saved.

This function allows to control the analyzer from a far place. (remote control)

### Run Key Emulation

Click 🧮 on the toolbar of the data window (or click "Key emulation" of the tool menu.).

	Remote01 キーエミュレーション - LINEEYE LE-PC300R	×
1)	MONITIOR ONLINE DELAY TREND BERT SIMULATE MANUAL 1 BUFFER FLOW SCONO ITION 4404VE MON 90ATA TBL PROGRAM	
2	C         D         D         E         E         FERS         MENU         D         E         GOOD         RUN           8         1000         9         1000         A         1000	

- 1. Displays the screen of your analyzer being connected.
- 2. Emulate the key of your analyzer.

### Capture the Screen Image

You can save the screen image of the connected analyzer in a bitmap (BMP) file format.

-	: Capture the present screen as a bitmap file.
	: Copy the present screen to the clipboard.
	: Create a bitmap file in a monochrome mode.
	: Create a bitmap file in a monochrome mode (with an outer frame.)
4	: Create a bitmap file in a color mode.
P	: Go back to the previous data window.

### Chapter 9 Text Conversion

This function allows to convert the data which is measured on the remote monitor, and which is saved on such as a memory card and HDD into a text file.

### Text Conversion Function Setting

Click 💀 on the toolbar of the data window (or click "Text conversion" of the menu.).

The following text conversion window opens.

Text conversion - LINEEYE LE	-PC300R	- • 💌
Folder : C¥Users¥lineeyeKH1¥	Documents	
File type : Data files(*.dt) Monitor data files : 00000000.DT	Conversion options Output format : Normal Select data line : Data format : Line width : No guide Exclude time stat Exclude idle time HDLC translation : PPP translation :	 Line state : V RS CS DR DR V CO V CO V CO V R SQ CT EX
Select all No select		Convert

-Folder

Specify a folder which has the data you wish to convert into text.

-The kind of file

Selects from "Data files" and "Analyzer's auto save files."

-Refresh

Refresh the file information in the specified folder.

-Monitor data file

Selects a file you wish to convert from the list display. It is selected by clicking the file. To cancel the selection, click the file again. (You can select two or more files and cancel them all.) -Output format

Selects a format you wish to convert from the following.

"Normal print" (Print format of your analyzer)

"Normal print with line state" (Print format of your analyzer which includes control line information)

"Translated print (designated at the time of measurement)" (Translated print format of your analyzer)

"CSV format processing unit: Data (normal)" (Every data divided.)

"CSV format processing unit: Frame" (Every frame divided.)

-The number of characters per line

Selects the number of characters displayed per line from "40", "80", "136", and "MAX".

By selecting "MAX", when you execute "translation printing" it translates so that all the data field can be displayed.

-Data format

Selects the data format to convert from the following.

"Char. / Hex." (Displays the character code and the hexadecimal number.)

"Char. Only" (Only characters are displayed.)

"Hexadecimal" (Only the hexadecimal number is displayed.)

-No guide

If "No guide" is checked, converts such as the communication condition without guide.

(data only)

-Exclude time stamp

If "Exclude time stamp" is checked, delete the time stamp to convert.

-Exclude idle time

If "Exclude idle time" is checked, delete the idle time to convert.

-Select data line

Selects the data to convert from "SD and RD," "SD only" and "RD only."

-HDLC translation

At the time of HDLC, selects the translation format to convert from "Frame" and "Packet."

-PPP translation

At the time of PPP, selects the translation format to convert from "PPP" and "DUMP." -Line state

At the time of "Normal print and Line state," mark the control line to display with. You can change the order to display, by clicking "up" and "down" button.

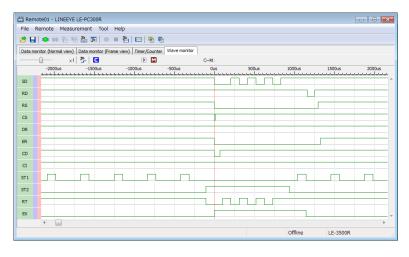
Text conversion - LINEEYE LE	-PC300R		
Folder : C¥Users¥lineeyeKH1	#Documents		
File type : Data files(*.dt)	Conversion options Output format :		
Monitor data files :	CSV format (data)	•	
Refresh 0000000.DT	Select data line :	SD and RD 🔹	
	Data format :	Hexadecimal 💌	
	Column :	16	
	Delimit char. :		
Select all No select			
			Convert

If the CSV conversion is selected, the following window appears.

-Select data line Selects from "SD and RD," "SD only" and "RD only." -Data format Selects from "Hexadecimal," "Decimal" and "Character." -Column Sets the range between 1 and 65535. -Delimit char. Sets the delimit character such as ","

### Start Text Conversion

Click "Convert." A converted file is saved in the folder which contains its source file.



-Scaling factor	Move the slider $$
-Cursor display	Click <b>C</b> . Place the cursor near the center of the screen.
-Marker display	Click M. Place the marker near the center of the screen.
-Time measurement	Drag <b>C</b> and <b>M</b> on the screen of the wave monitor to the position you
	wish to measure. "C-M:**ms" shows the time between the cursor and the
	marker (eg. The image above indicates C-M: 74ms.).
-Signal display order setting	Click <b>P</b> to set the order to display on the signal standard setting.

To connect multiple analyzers at the same time, add the necessary setting for the number of analyzers to connect.

Adds the remote setting on the remote setting list window.

To open the remote setting list window, click *from the toolbar of the window (or click "remote setting list" of the tool menu).* 

Remote Setting List Window

_	🛗 Remote	Remote setting list - LINEEYE LE-PC300R				
1)	File Rer	mote Help	)			
(2)		<u>2</u> ×				
<u> </u>	Name	State	Connection setting	Remote	monitor data folder	
3	Remote01	Using	[Serial] COM1, 115200	C:¥User:	s¥lineeyeKH1¥Documents¥LEPC300R¥RemoteC	1¥Buffer
(4) <b></b>	-	emote setting	list (this window) will be opened. Il be opened. (Order in the setting li	st)	Options Display language : English (US) (It will be applied after restarting	• It this application.)

1. Menu

Performs each operation.

2. Toolbar

Performs each operation.

- Remote Setting List Displays the remote setting.
- 4. Option Setting

You can select the language (valid after reboot).

### Add the Remote Setting

To add a new remote setting to the list, click 🏠 on the toolbar of the remote setting window (or, click

"new setting" of the remote menu.). Sets the necessary items. (For more information about each item of the remote setting, read "Chapter 5 Environment setting.")

\* For multiple analyzers, make sure not to specify the same folder as location of saving the remote monitor data.

When opening this setting window from the remote setting list window, you can rename the setting name. Adds the remote setting for the number of analyzers you wish to connect. (It does not allow you to rename the setting name when the window opened from the data window.)

Remote setting		×
Setting name : Rem	ote01	
Connection Model se	ection Remote monitor Key emulation Miscellaneous	
Connection method :	Serial port direct	
	COM1 -	
Speed :	115200 -	
Data bit :	8 -	
Parity :	None 💌	
X-Control :	Disable 👻	
L		
	OK Cance	

### Open the Data Window

To open the selected data window for remote setting, select the specific remote setting from the list of the remote setting list window (multiple selections possible), and click provide on the toolbar (or, click the "open data window" of the file menu.).

### Delete the Remote Setting

You can delete unnecessary remote setting.

At first, select the remote setting you wish to delete from the list of the remote setting list window (multiple selections possible) and click 💥 on the toolbar (or, click "delete setting" of the remote menu). Then, the

deletion confirmation appears and the selected setting will be deleted by clicking the "OK" button.

However, if the remote setting which is using in the data window, you cannot delete it. If you end the application with all the remote settings deleted, a new setting (default setting) will be automatically added when you start the application next.

### Operate Setting When Starting

You can select operation when LE-PC300R starts from the following:

"The remote setting list (this window) will be opened"

The remote setting list window will be opened. If the window has already opened, it will be displayed in front.

"The data window will be opened. (Order in the setting list)"

The data window will be opened in the order according to the remote setting list. If all data windows for the remote setting have already opened, the operation is the same with "The remote setting list (this window) will be opened."

### Startup Options

When starting the LE-PC300R, following options can be used.

-r "<Setting name>"

Start measuring automatically by the specified Connection setting after starting LE-PC300R.

To start measuring by the multiple settings, ex. specify as follows.

-r "Remote01" -r "Remote02"

When starting the measurement by using AUTO measurement function, the warning message of loosing the existing data file will not be displayed. Also, when starting the measurement by using APPEND mode and the selected configuration file automatically, the existing data file will be erased without the warning message when starting LE-PC300R.

### -q

It saves measured data to the data file immediately, and try to keep the format of data file as normal. (LINE-EYE does not warrant the condition is normal.)

Also, it will allow to read the measured file which is in the process of saving data, and able to copy the data file. However, the data file which is in the process of saving data can not be opened by the other window of LE-PC300R.

It is possible that this function will deteriorate the ability of PC or storage of saving data file. Therefore, LINEEYE does not recommend using this function.

### Chapter 12 Specification

Applicable analyzer	LE-3500R/LE-2500R/LE-1500/LE-2500/LE-3500 *1				
Connection	Serial, USB, LAN (the LAN-serial converter SI-60, SI-60F), Wi-Fi				
No. of analyzers to be	Multiple analyzers can be connected and controlled simultaneously. (No. of				
connected	connectable analyzers	depends on the performance of the PC.)			
Measurement conditions	Measurement conditio	ons (communication parameters, triggers and simulation data)			
	can be set.				
Key emulation	Displays the analyzer	r's display and keys on the PC screen and can perform the			
	analyzer remote contro	ol.			
Remote monitor	Starts/stops the measu	rement, displays the measurement data on the PC screen, and			
	records the data contin	nuously			
	Recording mode	Fixed buffer mode: Meausres data up to the specified size			
		and stop automatically. Ring buffer mode: Records the latest			
		data of the specified size endlessly.			
	Recording capacity	Max. 256GB: Can be specified up to 2,000 files in the unit of			
		1/2/4/8/16/32/64/128 MB.			
Text-CSV conversion	Specified number of t	he recorded files can be converted to text or CSV format at			
	once.				
Screen image capture	Analyzer's display sho	wn by the key emulation can be saved as the bitmap files.			
Display modes	Standard display	Displays the communication data, idle time, time stamp and			
		data line status. Displays in ASCII, EBCDIC, JIS7, Baudot,			
		Transcode, IPARS, EBCD, EBCDIK, HEX(includes errors).			
	Translation display Translates and displays protocols such as SDLC, X				
		LAPD, PPP and IrLAP.			
		Displays frames of I <sup>2</sup> C and SPI.			
	Waveform monitor	Enlarges and reduces the waveform (Can measure time, and			
	display	rearrange signals.)			
Search	Finds and displays the	data that matches the search conditions.			
	Search conditions	Specified character (Hex: max.8 characters / String: max.16			
		characters) (don't care and bit mask can be specified)			
		Error (parity, framing, BCC, break/abort, short frame:			
		individual error type can be specified.)			
		Idle time beyond a specified duration.			
		Specific time stamp (don't care can be specified.)			
System requirements	PC	RAM: 250MB or more			
		HDD: 5MB + free space for saving the measurement data.			
		TIDD. SWID + nee space for saving the measurement data.			

\*1 You cannot use this PC link software together with OP-SB7GX at the same time.

There is a registration page on our web site.

( http://www.lineeye.com )

Please register your product for further support.

We will provide you the firmware update

information and sales information etc.

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