

LT 6280A  
HDMI SOURCE DEVICE CHECKER

INSTRUCTION MANUAL

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# GENERAL SAFETY SUMMARY

## ■ Read This before Using the Instrument

This instrument should only be used by persons with sufficient knowledge of electronics who thoroughly understand the contents of this manual.

This instrument is not designed or manufactured for households or ordinary consumers.




If unqualified personnel are to use the instrument, be sure the instrument is handled under the supervision of qualified personnel (those who have electrical knowledge). This is to prevent the possibility of personal injury or damage to the instrument.

## ■ Note about Reading This Manual

The contents of this manual contain specialized terminology and may be difficult to understand. If you have any questions about the contents of this manual, please contact your local LEADER agent.

## ■ Symbols and Terms

The following symbols and terms are used in this instruction manual and on the instrument to indicate important warnings and notes.

<p>&lt;Symbol&gt;</p> 	<p>This symbol appears in this instruction manual and on the instrument to indicate an area where improper handling could result in personal injury, damage to the instrument, or malfunction of the instrument or devices connected to it.</p> <p>When you encounter this symbol on the instrument, be sure to refer to the information in this instruction manual that corresponds to the area that the symbol marks.</p>
<p>&lt;Term&gt;</p>  WARNING	<p>Ignoring the precautions that this term indicates could lead to death or serious injury.</p>
<p>&lt;Term&gt;</p>  CAUTION	<p>Ignoring the precautions that this term indicates could lead to personal injury or damage to the instrument.</p>

# GENERAL SAFETY SUMMARY

Read the warnings and information below thoroughly to avoid death, personal injury, and damage and deterioration of the instrument.



## ■ Warnings Concerning the Case and Panels

Do not remove the instrument's case or panels for any reason. Touching the internal components of the instrument could lead to fire or electric shock.

Also, do not allow foreign materials, such as liquids, combustible matter, and metal, to enter the instrument. Turning the instrument on when such materials are inside it could lead to fire, electric shock, damage to the instrument, or some other accident.

## ■ Installation Environment

### ● Operating Temperature Range

Use this instrument in a 0 to 40 °C environment. Using the instrument with its vents blocked or in a high temperature environment could lead to fire.

Drastic changes in temperature, such as might be caused by moving the instrument between two rooms with different temperatures, can damage the instrument by causing condensation to form within it. If there is a possibility that the instrument has condensation within it, wait for approximately 30 minutes before turning on the power.

### ● Operating Humidity Range

Use this instrument in an environment whose relative humidity is 85 % or less where there is no threat of condensation forming.

Also, do not operate this instrument with wet hands. Doing so could lead to electric shock or fire.

### ● Do Not Operate in an Explosive Atmosphere

Using this instrument in an environment where flammable gasses, explosive gasses, or steam is emitted or stored could lead to an explosion or fire. Do not use the instrument in such an environment.

### ● Do Not Insert Foreign Materials

If foreign materials, such as metal, flammable objects, or liquid are allowed into the instrument (through the vents for example), fire, electric shock, damage to the instrument, or some other accident may result.

## ■ If You Notice Something Wrong during Operation

If you notice smoke, fire, a strange smell, or something else that is wrong with the instrument while you are operating it, stop operation immediately. Failing to do so could lead to fire. Turn OFF the power switch, and remove the power cord from the outlet. After making sure that fire has not spread anywhere, contact your local LEADER agent.

# GENERAL SAFETY SUMMARY



## ■ Warnings Concerning the Power Source

Do not use a power source with a voltage other than the rated power source voltage for the instrument. Doing so could lead to fire.

Confirm the voltage of the power source before you connect the power cord to it.

Only use a power source whose frequency is 50/60 Hz.

Use a power cord that is appropriate for the voltage of the power source. Also, use a power cord that meets the safety standards of the country that you are using it in.

Using a power cord that does not meet the standards could lead to fire. If the power cord is damaged, stop using it, and contact your local LEADER agent. Using a damaged power cord could lead to electrical shock or fire.

When removing the plug from the power outlet, do not pull on the cord. Pull from the plug.

## ■ Warnings Concerning Grounding

The instrument has a ground terminal to protect the user and the instrument from electric shock.

Ensure that the product is properly grounded for safe operation.



## ■ Cautions Concerning the Input and Output Connectors

To avoid damaging the instrument, only apply signals to the input connectors that conform to the specifications in this instruction manual. Do not short or apply external voltage to the output connectors.

Doing so could damage the instrument.

## ■ If You Will Not Use the Instrument for an Extended Period of Time

If you will not use the instrument for an extended period of time, remove the power plug from the outlet.

## ■ Cautions Concerning the Ethernet Port

When you are connecting the instrument to the communication provider's equipment, connect to the Ethernet port through a hub that is authorized for use in the country that you are using the instrument in.

# GENERAL SAFETY SUMMARY

## ■ Calibration and Repairs

This instrument has been carefully examined at the factory to ensure that its performance is in accordance with the standards. However, because of factors such as parts wearing out over time, the performance of the instrument may degrade. To ensure stable performance, we recommend that you have the instrument calibrated regularly. Also, if the instrument malfunctions, repairs are necessary. For repairs and calibration, contact your local LEADER agent.

## ■ Routine Maintenance

When you clean the instrument, remove the power plug from the outlet.

Do not use thinner or benzene when you clean the instrument's case, panels, or knobs. Doing so could lead to paint chipping and the corrosion of plastic components. To clean the case, panels, and knobs, use a soft cloth with mild detergent, and wipe gently. While cleaning, make sure that foreign materials, such as water and detergent, do not enter the instrument. If liquid or a metal object enters into the instrument, fire or electric shock may result.

## ■ About the European WEEE Directive



This instrument and its accessories are subject to the European WEEE Directive.

Follow the applicable regulations of your country or region when discarding this instrument or its accessories. Follow the EU Battery Directive when discarding the batteries that you removed from this instrument.

(WEEE stands for Waste Electrical and Electronic Equipment.)

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Follow the warnings and precautions that have been listed in this section to use the instrument correctly and safely. Precautions are also contained in various other sections of this instruction manual. To use the instrument correctly, be sure to follow those precautions as well.

If you have any questions or comments about this instruction manual, please contact your local LEADER agent.

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## 1. INTRODUCTION

Thank you for purchasing this LEADER instrument. To use this instrument safely, read this instruction manual thoroughly, and make sure that you know how to use the instrument properly.

If some point about the operation of this instrument is still unclear after you have read this instruction manual, refer to the contact information on the back cover of the manual to contact LEADER, or contact your local LEADER agent.

After you have finished reading this manual, keep it in a convenient place so that you can refer to it when necessary.

### 1.1 Scope of Warranty

This LEADER instrument has been manufactured under the strictest quality control guidelines. LEADER shall not be obligated to furnish the following free services during the warranty period.

1. Repair of malfunction or damages resulting from fire, natural calamity, or improper voltage applied by the user.
2. Repair of an instrument that has been improperly repaired, adjusted, or modified by personnel other than a factory-trained LEADER representative.
3. Repair of malfunctions or damages resulting from improper use.
4. Repair of malfunctions caused by devices other than this instrument.
5. Repair of malfunctions or damages without the presentation of a proof of purchase or receipt bill for the instrument.

### 1.2 Operating Precautions

#### 1.2.1 Mechanical Shock

This instrument contains sensitive components, so it may be damaged if it is dropped or otherwise exposed to a strong shock.

#### 1.2.2 Electrostatic Damage

Electronic components can be damaged by static discharge. Static electricity can build up in the core wire of a coaxial cable. Before connecting a coaxial cable to the instrument, short the core wire of the cable with the external conductor.

#### 1.2.3 Warming Up

To ensure more accurate measurements, turn ON the instrument approximately 30 minutes before you intend to use it to allow its internal temperature to stabilize.

### 1.3 Trademark Acknowledgments

The company and product names in this document are trademarks or registered trademarks of their respective holders.

## 2. SPECIFICATIONS

### 2.1 Description

The LT 6280A is a tester designed for HDMI source device production lines. In combination with an external PC, the LT 6280A can be used to check the video data, audio data, EDID, InfoFrame, HDCP, and CEC of HDMI source devices.

- \* The LT 6280A is a production tool, so HDMI logos and version are not indicated on the product. If you require them, contact your local LEADER agent.

### 2.2 Features

- **Video Data Checking**

The LT 6280A can receive video data from an HDMI source device and compare it against known data. Then the LT 6280A can send the comparison result and the number of mismatched data points or the mismatched data positions to a PC.

- **Audio Data Checking**

The LT 6280A can send the output level of the audio data that is being received from an HDMI source device to a PC. 5.1ch L-PCM is supported.

- **EDID Simulation**

EDID that is created on a PC can be output to an HDMI source device.

- **InfoFrame Output**

The LT 6280A can send the InfoFrames it has received from an HDMI source device to a PC.

- **HDCP Status Output**

The HDCP authentication status can be sent to a PC.

- **CEC Checking**

In CEC Checking, the LT 6280A receives data from a PC and sends it to a source device as well as receive data from a source device and sends it to a PC.

- **Remote Control Function**

The LT 6280A can be remotely controlled from a PC via Ethernet.



## 2. SPECIFICATIONS

### 2.3 Specifications

#### 2.3.1 HDMI Input

HDMI Rx	Sil9233A (Silicon Image Inc.)
Input Format	1920x1080p@59.94/60, 1920x1080p@29.97/30, 1920x1080p@23.98/24, 1920x1080i@59.94/60, 1280x720p@59.94/60, 1280x720p@29.97/30, 1280x720p@23.98/24, 720x480p@59.94/60, 720(1440)x480i@59.94/60, 1920x1080p@50, 1920x1080p@25, 1920x1080i@50, 1280x720p@50, 1280x720p@25, 720x576p@50, 720(1440)x576i@50, 1280x720p@59.94/60 3D Frame Packing
Input Protection	Built-in ESD protection circuit
TMDS Input Format	YUV/RGB 444 24/30/36bit, YUV 422 16/20/24bit
Audio	
Format	IEC 60958-3
Channels	Max. 5.1ch (L-PCM)
Connector	HDMI connector (Type A)

#### 2.3.2 External Interface

Ethernet	
Function	Remote control from PC
Command Protocol	Telnet

#### 2.3.3 Features

Video Data Checking	Compares received video data with reference data Sends the comparison result and the number of mismatched data points or the mismatched data positions to a PC
TMDS Input Format	YUV/RGB 444 24bit, YUV 422 16bit
Reference Data Generation	Receives image reference data through the HDMI connector and stores the data in the internal memory
Audio Data Checking	Sends the output level of the received audio data to a PC
EDID Simulation	Receives EDIDs that have been created on a PC and sends them in accordance with a protocol
InfoFrame Output	Sends received InfoFrames to a PC
HDCP Status Output	Sends HDCP authentication status to a PC
CEC Checking	
Send	Sends data received from a PC to an HDMI source device
Receive	Sends data received from an HDMI source device to a PC
Status LED	
At Power-on	Displays the LT 6280A status
After Ethernet Connection	Controlled from the PC

## 2. SPECIFICATIONS

### 2.3.4 General Specifications

#### Environmental Conditions

Operating Temperature	0 to 40°C
Operating Humidity Range	85 %RH or less (no condensation)
Optimal Temperature	10 to 35°C
Operating Environment	Indoors
Elevation	Up to 2,000 m
Overvoltage Category	II
Pollution Degree	2

#### Power Requirements

Voltage	90 to 250 VAC
Frequency	50/60 Hz
Power Consumption	15 W max.

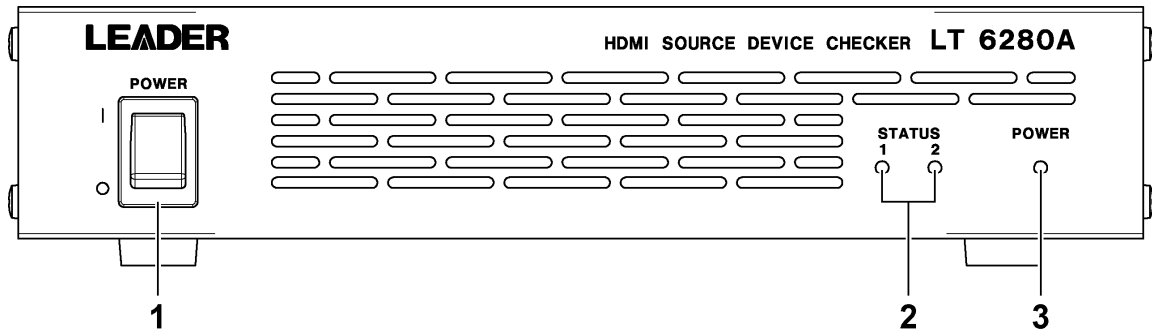
Dimensions 213 (W) × 44 (H) × 200 (D) mm (excluding protrusions)

Weight 1.5 kg

Accessories Power Cord ..... 1  
CD-ROM (sample programs, instruction manual, etc.) 1

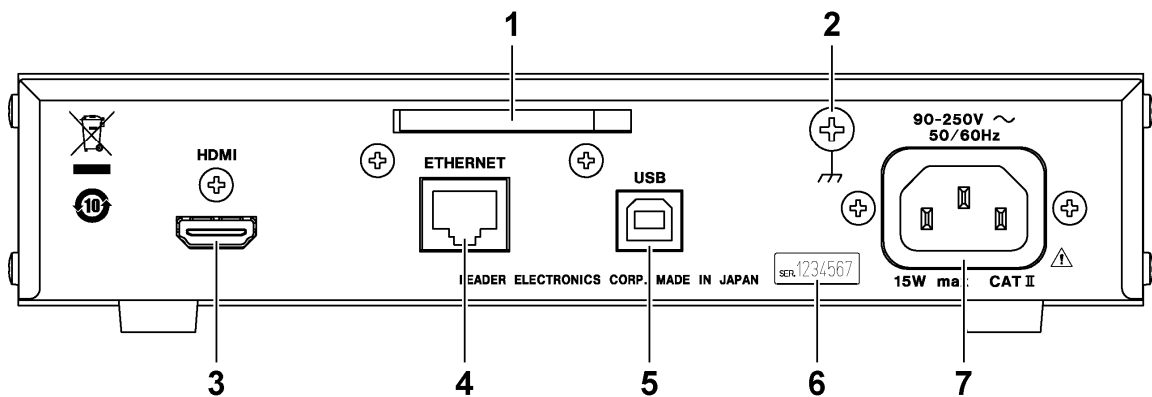
### 3. PANEL DESCRIPTION

#### 3.1 Front Panel



No.	Name	Description
1	POWER	This is the power switch.
2	STATUS 1 (green) STATUS 2 (red)	At power-on, the LEDs indicate the startup status. When the LT 6280A is connected to the Ethernet, the LED can be turned on and off remotely.
3	POWER	Lights when the power is on.

#### 3.2 Rear Panel



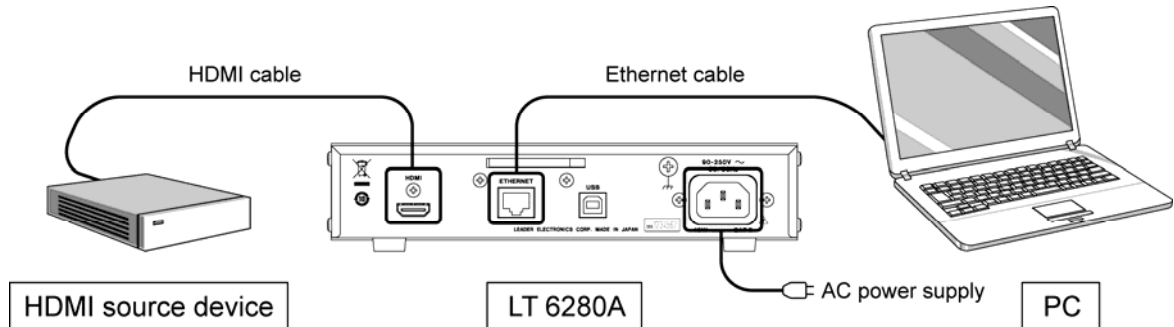
No.	Name	Description
1	Fan	Cooling fan.
2	Ground terminal	Connect to an external ground.
3	HDMI	Connect to an HDMI source device. Data is exchanged through this connector.
4	ETHERNET	Connect to a PC. Use Telnet to control the LT 6280A.
5	USB	USB port. This port is normally not used.
6	Serial number label	The instrument's serial number is printed on this label.
7	AC inlet	-

## 4. HOW TO USE

### 4.1 Connection

As shown below, connect a PC and HDMI source device to the LT 6280A. (The LT 6280A and PC can be connected in a one-to-one configuration or over a network.)

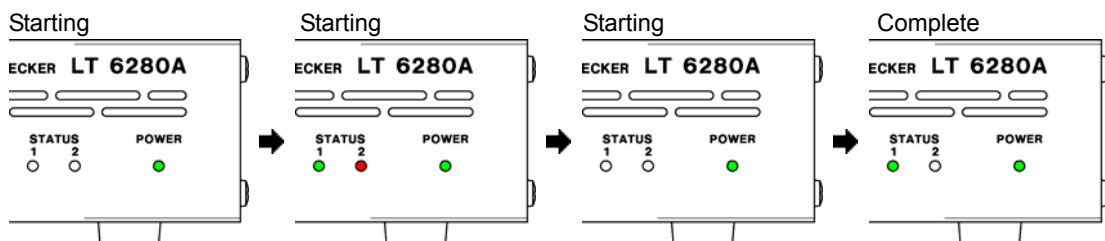
By controlling the LT 6280A remotely from a PC, you can check the operation of the HDMI source device. For information on remote control, see the next chapter.



### 4.2 Turning the Power On

When you turn on the LT 6280A, the STATUS LED changes as shown below. It takes 30 seconds to several minutes for the LT 6280A to start up completely. During this period, the LT 6280A cannot be controlled remotely.

When the LT 6280A is connected to the Ethernet, the STATUS LED can be turned on and off remotely.



## 5. REMOTE CONTROL

### 5.1 Command Format

- **Connection Port**

Port number	23
Login name	root
Password	None

- **Transmission Commands**

Insert a space between a command and a parameter and between two parameters.  
The number of parameters varies depending on the command. (Some commands do not have any parameters.)

Command + Space + Tx parameter 1 + Space + Tx parameter 2 + . . . + CR

- **Response Messages**

The number of parameters varies depending on the response. (Some responses do not have any parameters.)

If there is an error in a transmission command, the LT 6280A returns an “ERR” response.

Command + Space + Rsp. parameter 1 + Space + Rsp. parameter 2 + . . . + CR

- **Connection Example**

As an example, the connection procedure using command prompt is indicated below.

>telnet 192.168.0.2 Type “telnet,” a space, and the IP address (changeable).



arago login: root Type “root” for the login name.



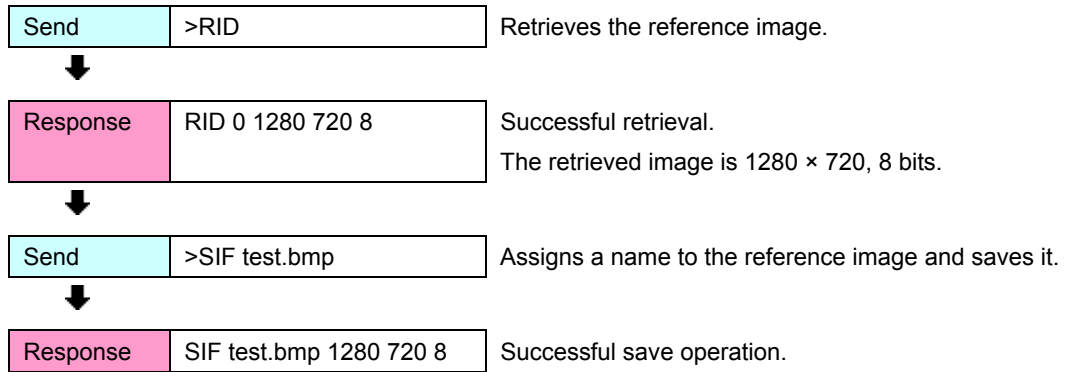
> From this point, send the available commands.

## 5.2 Control Example

As an example, the procedure for comparing image data is described below.

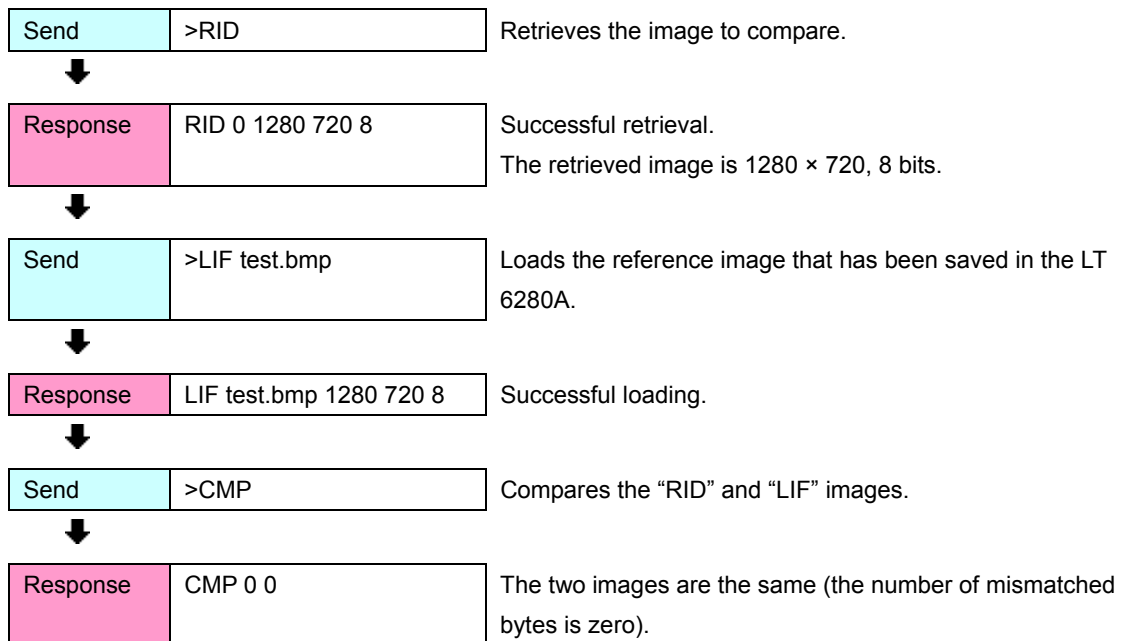
### • Preparation

Save the reference image data in the LT 6280A.



### • Comparison

Using the image data saved in “Preparation” as a reference, compare images.



## 5.3 Commands

No.	Command	Description
1	PWS	Get the 5 V power supply status
2	VST	Get the video data
3	AST	Get the audio data
4	RID	Get the image data
5	SIF	Save the image data
6	LIF	Load the reference image data
7	CMP	Compare the image data
8	ALV	Get the audio level
9	APP	Get the audio amplitude level
10	IFS	Get the InfoFrame receive status
11	RIF	Get the InfoFrame data
12	HDS	Get the HDCP authentication status
13	HEC	Clear the number of HDCP errors
14	HAC	Clear the number of HDCP authentication completions
15	RHD	Get the HDCP data
16	RPT	Set the HDCP operation mode
17	CRI	Clear the HDCP Ri
18	IED	Initialize the EDID data
19	WED	Write the EDID data
20	RED	Get the EDID data
21	SCE	Send the CEC data
22	RCE	Get the received CEC data
23	NCE	Get the number of received CEC data
24	LED	Set the STATUS LED
25	ERR	Get the error information
26	NET	Change the network settings and get them
27	INT	Initialize the network settings
28	MAC	Get the MAC address
29	VER	Get the version information

## 5.4 Command Description

No.	1			
Command	PWS			
Description	Get the 5 V power supply status			
		Data	Description	Format
Rsp. parameter	1	0	5 V not available	DEC
		1	5 V available	DEC

No.	2			
Command	VST			
Description	Get the video data			
		Data	Description	Format
Tx parameter (can be omitted)	1	0 (when omitted)	Get Rsp. parameters 1 to 4	DEC
		1	Get Rsp. parameters 1 to 13	DEC
Rsp. parameter	1	0, 1	Same as the Tx parameters	DEC
	2	0 to 1920	Image data width	DEC
	3	0 to 1470	Image data height	DEC
	4	0	Progressive	DEC
		1	Interlace	DEC
	5	-	H Resolution	DEC
	6	-	V Refresh	DEC
	7	-	Vsync Active Line	DEC
	8	-	V Front Porch	DEC
	9	-	H Front Porch	DEC
	10	-	Hsync Active Width	DEC
	11	-	Pixel Clock Timing	DEC
	12	-	Frame Rate	DEC
	13	0	3D OFF	DEC
		1	3D Frame Packing	DEC
		2	3D Side by Side(Half)	DEC
		3	3D Side by Side(Full)	DEC
		4	3D Top and Bottom	DEC



## 5. REMOTE CONTROL

No.	3			
Command	AST			
Description	Get the audio data			
		Data	Description	Format
Rsp. parameter	1	0	No audio mode information	DEC
		1	PCM	DEC
		2	DSD	DEC
		3	HBR	DEC
	2	0	No input channel information	DEC
		1	2 channel input	DEC
		2	3 channel input or more	DEC
	3	0 to 768000	Sampling frequency	DEC
	4	16 to 24	Number of bits	DEC

No.	4			
Command	RID			
Description	Get the image data			
Notes	Retrieves image data from the HDMI source device into the LT 6280A. If there is no image data, Rsp. parameters 2 to 4 will be zero. If the image data is 2D, no Tx parameters are necessary.			
		Data	Description	Format
Tx parameter (can be omitted)	1	0 (when omitted)	Left image	DEC
		1	Right image	DEC
Rsp. parameter	1	0 or 1	Same as the Tx parameters	DEC
	2	0 to 1920	Image data width	DEC
	3	0 to 1080	Image data height	DEC
	4	8 to 12	Number of color bits in the image data	DEC

No.	5			
Command	SIF			
Description	Save the image data			
Notes	Saves the image data retrieved using "RID" in the LT 6280A in bitmap format. Set the file name as "*.bmp." If file fails to be saved, Rsp. parameters 2 to 4 will be zero.			
		Data	Description	Format
Tx parameter	1	Up to 50 characters	File name	STR
Rsp. parameter	1	Up to 50 characters	Same as the Tx parameters	STR
	2	0 to 1920	Image data width	DEC
	3	0 to 1080	Image data height	DEC
	4	8 to 12	Number of color bits in the image data	DEC

## 5. REMOTE CONTROL

No.	6			
Command	LIF			
Description	Load the reference image data			
Notes	Loads the image data that was saved using "SIF." This will be used as the reference in image data comparison. Set the file name as "*.bmp." If file fails to be loaded, Rsp. parameters 2 to 4 will be zero.			
		Data	Description	Format
Tx parameter	1	Up to 50 characters	File name	STR
Rsp. parameter	1	Up to 50 characters	Same as the Tx parameters	STR
	2	0 to 1920	Image data width	DEC
	3	0 to 1080	Image data height	DEC
	4	8 to 12	Number of color bits in the image data	DEC

No.		7																														
Command		CMP																														
Description		Compare the image data																														
Notes		Compares the image data retrieved using “RID” and that loaded using “LIF.” For example, addresses where data doesn't match in the case of 3 x 3, 8 bit images are as follows:																														
		<table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr><tr><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td></tr><tr><td>19</td><td>20</td><td>21</td><td>22</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td></tr></table>				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	24	25	26	27	28
		1	2	3	4	5	6	7	8	9																						
		10	11	12	13	14	15	16	17	18																						
19	20	21	22	24	25	26	27	28																								

## 5. REMOTE CONTROL

No.	8			
Command	ALV			
Description	Get the audio level			
Notes	Retrieves the maximum and minimum levels over the last 200 ms. For stereo input, values for channels other than channels 0 and 1 are void.			
		Data	Description	Format
Rsp. parameter	1	0 to 65535	Channel 0 maximum level	DEC
	2	0 to 65535	Channel 2 maximum level	DEC
	3	0 to 65535	Channel 4 maximum level	DEC
	4	0 to 65535	Channel 1 maximum level	DEC
	5	0 to 65535	Channel 3 maximum level	DEC
	6	0 to 65535	Channel 5 maximum level	DEC
	7	0 to 65535	Channel 0 minimum level	DEC
	8	0 to 65535	Channel 2 minimum level	DEC
	9	0 to 65535	Channel 4 minimum level	DEC
	10	0 to 65535	Channel 1 minimum level	DEC
	11	0 to 65535	Channel 3 minimum level	DEC
	12	0 to 65535	Channel 5 minimum level	DEC

No.	9			
Command	APP			
Description	Get the audio amplitude level			
Notes	Retrieves the maximum and minimum amplitude levels over the last 200 ms. For stereo input, values for channels other than channels 0 and 1 are void.			
		Data	Description	Format
Rsp. parameter	1	0 to 65535	Channel 0 amplitude maximum level	DEC
	2	0 to 65535	Channel 2 amplitude maximum level	DEC
	3	0 to 65535	Channel 4 amplitude maximum level	DEC
	4	0 to 65535	Channel 1 amplitude maximum level	DEC
	5	0 to 65535	Channel 3 amplitude maximum level	DEC
	6	0 to 65535	Channel 5 amplitude maximum level	DEC
	7	0 to 65535	Channel 0 minimum maximum level	DEC
	8	0 to 65535	Channel 2 minimum maximum level	DEC
	9	0 to 65535	Channel 4 minimum maximum level	DEC
	10	0 to 65535	Channel 1 minimum maximum level	DEC
	11	0 to 65535	Channel 3 minimum maximum level	DEC
	12	0 to 65535	Channel 5 minimum maximum level	DEC

## 5. REMOTE CONTROL

No.	10			
Command	IFS			
Description	Get the InfoFrame receive status			
		Data	Description	Format
Rsp. parameter	1	00 to FF	Receive data is available for items whose bits are 1. bit0: AVI                      bit4: ACP bit1: SPD                      bit5: other bit2: Audio                    bit6: GBD bit3: MPEG                   bit7: VSI	HEX

No.	11			
Command	RIF			
Description	Get the InfoFrame data			
		Data	Description	Format
Tx parameter (can be omitted)	1	0 (when omitted)	AVI	DEC
		1	SPD	DEC
		2	Audio	DEC
		3	MPEG	DEC
		4	ACP	DEC
		5	other	DEC
		6	GBD	DEC
		7	VSI	DEC
Rsp. parameter	1	0 to 7	Same as the Tx parameters	DEC
	2	Up to 32 bytes	InfoFrame data	HEX

No.	12			
Command	HDS			
Description	Get the HDCP authentication status			
		Data	Description	Format
Rsp. parameter	1	0	Waiting for authentication	DEC
		1	Authenticating	DEC
		2	Authentication complete (3rd authentication in progress)	DEC
	2	0 to 255	Number of HDCP errors	DEC
	3	0 to 255	Number of HDCP authentication completions	DEC

No.	13			
Command	HEC			
Description	Clear the number of HDCP errors			

No.	14			
Command	HAC			
Description	Clear the number of HDCP authentication completions			

## 5. REMOTE CONTROL

No.	15			
Command	RHD			
Description	Get the HDCP data			
Notes	If there is no corresponding data, Rsp. parameter 2 will not be returned.			
		Data	Description	Format
Tx parameter (can be omitted)	1	0 (when omitted)	BKSV	DEC
		1	Ri	DEC
		2	AKSV	DEC
		3	AN	DEC
Rsp. parameter	1	0 to 3	Same as the Tx parameters	DEC
	2	2 to 5 bytes	HDCP data	HEX

No.	16			
Command	RPT			
Description	Set the HDCP operation mode			
		Data	Description	Format
Tx parameter (can be omitted)	1	0 (when omitted)	Sink mode	DEC
		1	Repeater mode	DEC
Rsp. parameter	1	0 or 1	Same as the Tx parameters	DEC

No.	17			
Command	CRI			
Description	Clear the HDCP Ri			

No.	18			
Command	IED			
Description	Initialize the EDID data			
		Data	Description	Format
Rsp. parameter	1	256 bytes	EDID data after initialization	HEX

No.	19			
Command	WED			
Description	Write the EDID data			
		Data	Description	Format
Tx parameter	1	256 bytes	EDID data	HEX
Rsp. parameter	1	256 bytes	Same as the Tx parameters	HEX

No.	20			
Command	RED			
Description	Get the EDID data			
		Data	Description	Format
Rsp. parameter	1	256 bytes	EDID data	HEX

## 5. REMOTE CONTROL

No.	21			
Command	SCE			
Description	Send the CEC data			
Notes	Tx parameter 3 can be omitted. If transmission fails, Rsp. parameters 1 to 3 will not be returned.			
		Data	Description	Format
Tx parameter	1	00 to FF	Transmission header The higher 4 bits are the LT 6280A address. The lower 4 bits are the HDMI source device address.	HEX
	2	00 to FF	CEC OP code	HEX
	3	Up to 15 bytes	CEC parameter	HEX
Rsp. parameter	1	00 to FF	Same as Tx parameter 1	HEX
	2	00 to FF	Same as Tx parameter 2	HEX
	3	Up to 15 bytes	Same as Tx parameter 3	HEX

No.	22			
Command	RCE			
Description	Get the received CEC data			
Notes	If there is no received data, Rsp. parameters 1 to 3 will not be returned.			
		Data	Description	Format
Rsp. parameter	1	00 to FF	Transmission header The higher 4 bits are the HDMI source device address. The lower 4 bits are the LT 6280A address.	HEX
	2	00 to FF	CEC OP code	HEX
	3	Up to 15 bytes	CEC parameter	HEX

No.	23			
Command	NCE			
Description	Get the number of received CEC data			
		Data	Description	Format
Rsp. parameter	1	0 to 16	Number of received CEC data	DEC

No.	24			
Command	LED			
Description	Set the STATUS LED			
		Data	Description	Format
Tx parameter (can be omitted)	1	00 (when omitted)	STATUS 1: Off      STATUS 2: Off	HEX
		01	STATUS 1: Off      STATUS 2: Lit in red	HEX
		02	STATUS 1: Lit in green      STATUS 2: Off	HEX
		03	STATUS 1: Lit in green      STATUS 2: Lit in red	HEX
Rsp. parameter	1	00 to 03	Same as the Tx parameters	HEX

## 5. REMOTE CONTROL

No.	25			
Command	ERR			
Description	Get the error information			
		Data	Description	Format
Rsp. parameter	1	00	No error	HEX
		01	Fan error	HEX

No.	26			
Command	NET			
Description	Change the network settings and get them			
Notes	If you change the setting, restart the LT 6280A. If you omit the Tx parameters, the network settings will be retrieved.			
		Data	Description	Format
Tx parameter (can be omitted)	1	0	Fixed IP	DEC
		1	DHCP	DEC
	2	***.***.***.***	IP address	STR
	3	***.***.***.***	Subnet mask	STR
	4	***.***.***.***	Gateway	STR
Rsp. parameter	1	0 or 1	Same as Tx parameter 1	DEC
	2	***.***.***.***	Same as Tx parameter 2	STR
	3	***.***.***.***	Same as Tx parameter 3	STR
	4	***.***.***.***	Same as Tx parameter 4	STR

No.	27			
Command	INT			
Description	Initialize the network settings			
Notes	The settings will be initialized as indicated in the Rsp. parameter values. If the settings before initialization are different, restart the LT 6280A.			
		Data	Description	Format
Rsp. parameter	1	0	DHCP	DEC
	2	192.168.0.2	IP address	STR
	3	255.255.255.0	Subnet mask	STR
	4	0.0.0.0	Gateway	STR

No.	28			
Command	MAC			
Description	Get the MAC address			
		Data	Description	Format
Rsp. parameter	1	***.***.***.***	MAC address	STR

## 5. REMOTE CONTROL

No.	29			
Command	VER			
Description	Get the version information			
		Data	Description	Format
Rsp. parameter	1	00000000 to 99999999	Application version	DEC
	2	00000000 to 99999999	Sub microprocessor version	DEC
	3	0000 to 9999	FPGA version	DEC



## 6. SAMPLE PROGRAM

The following sample software application and source are on the included CD-ROM. Use them if necessary.

⊙	CD-ROM
	└─ SAMPLE
	└─ LT6280A_Remote_Sample.exe ..... Sample software
	└─ LT6280A_Sample_Source.cs..... Sample source
	└─ Instruction_Manual_for_LT_6280A

### ● Note

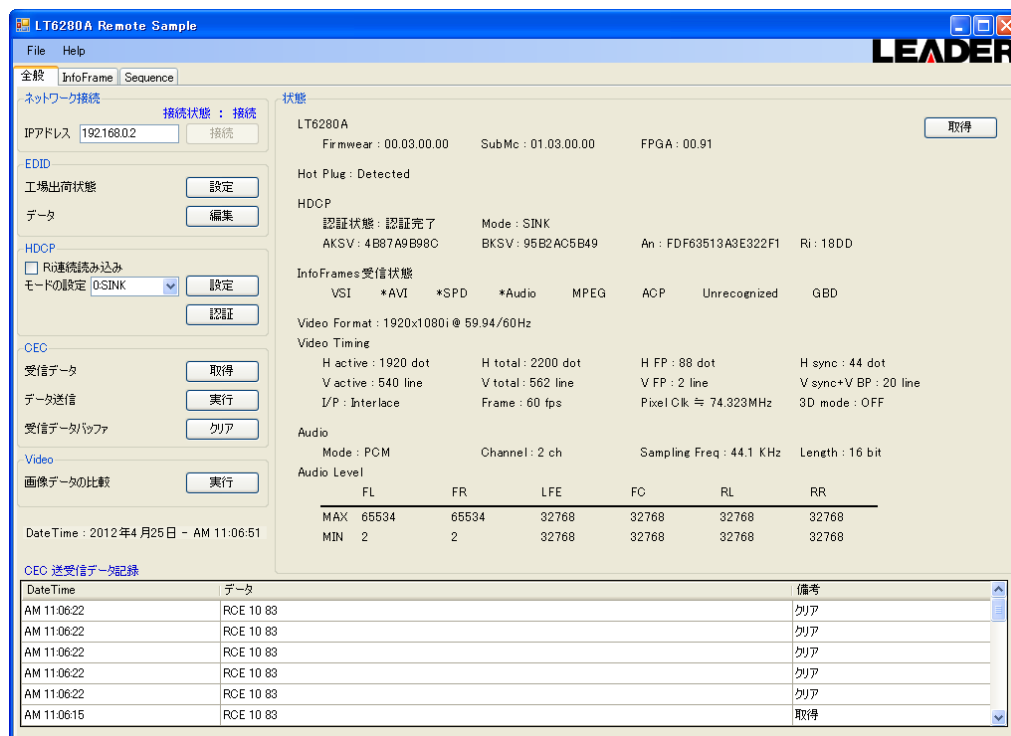
The sample program is provided for your reference. Leader does not provide any guarantee regarding the completeness, accuracy, and effectiveness of it.

### ● About the Sample Software Application

If you run “LT6280A\_Remote\_Sample.exe,” the following screen will appear. You can use the screen to remotely control the LT 6280A through easy operation.

To run the application, Microsoft .NET Framework 3.5 is required. If it is not installed in your PC, install it first.

This application has been confirmed to run on Microsoft Windows XP SP3 Japanese version.



### ● About the Sample Source

The sample source contains programs for establishing a connection with a network and for retrieving the 5 V power supply status.

# 所含有毒有害物质信息

部件号码: LT 6280A



此标志适用于在中国销售的电子信息产品, 依据2006年2月28日公布的《电子信息产品污染控制管理办法》以及SJ/T11364-2006《电子信息产品污染控制标识要求》, 表示该产品在使用完结后可再利用。数字表示的是环境保护使用期限, 只要遵守与本产品有关的安全和使用上的注意事项, 从制造日算起在数字所表示的年限内, 产品不会产生环境污染和对人体、财产的影响。产品适当使用后报废的方法请遵从电子信息产品的回收、再利用相关法令。详细请咨询各级政府主管部门。

产品中有毒有害物质或元素的名称及含量

部件名称 Parts	有毒有害物质或元素 Hazardous Substances in each Part					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
实装基板	×	○	○	○	○	○
主体部	×	○	○	○	○	○
开关电源	×	○	○	○	○	○
风扇	×	○	○	○	○	○
外筐	○	○	○	○	○	○
线材材料一套	×	○	○	○	○	○
附件	○	○	○	○	○	○
包装材	○	○	○	○	○	○
备注) ○: 表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006 规定的限量要求以下。 ×: 表示该有毒有害物质或元素至少在该部件的某一均质材料中的含量超出SJ/T11363-2006 标准规定的限量要求。						

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