ADVANTEST

ADVANTEST CORPORATION

R3267/73 OPT07

Plotter Output Option

Operation Manual

MANUAL NUMBER FOE-8335216A00

Applicable models

R3267
R3273

First printing April 20, 1999
Printed in Japan

Safety Summary

To ensure thorough understanding of all functions and to ensure efficient use of this instrument, please read the manual carefully before using. Note that Advantest bears absolutely no responsibility for the result of operations caused due to incorrect or inappropriate use of this instrument.

If the equipment is used in a manner not specified by Advantest, the protection provided by the equipment may be impaired.

- **Warning Labels**

  Warning labels are applied to Advantest products in locations where specific dangers exist. Pay careful attention to these labels during handling. Do not remove or tear these labels. If you have any questions regarding warning labels, please ask your nearest Advantest dealer. Our address and phone number are listed at the end of this manual.

  Symbols of those warning labels are shown below together with their meaning.

  DANGER: Indicates an imminently hazardous situation which will result in death or serious personal injury.

  WARNING: Indicates a potentially hazardous situation which will result in death or serious personal injury.

  CAUTION: Indicates a potentially hazardous situation which will result in personal injury or a damage to property including the product.

- **Basic Precautions**

  Please observe the following precautions to prevent fire, burn, electric shock, and personal injury.

  - Use a power cable rated for the voltage in question. Be sure however to use a power cable conforming to safety standards of your nation when using a product overseas.
  - When inserting the plug into the electrical outlet, first turn the power switch OFF and then insert the plug as far as it will go.
  - When removing the plug from the electrical outlet, first turn the power switch OFF and then pull it out by gripping the plug. Do not pull on the power cable itself. Make sure your hands are dry at this time.
  - Before turning on the power, be sure to check that the supply voltage matches the voltage requirements of the instrument.
  - Connect the power cable to a power outlet that is connected to a protected ground terminal. Grounding will be defeated if you use an extension cord which does not include a protected ground terminal.
  - Be sure to use fuses rated for the voltage in question.
  - Do not use this instrument with the case open.
  - Do not place anything on the product and do not apply excessive pressure to the product. Also, do not place flower pots or other containers containing liquid such as chemicals near this

product.

- When the product has ventilation outlets, do not stick or drop metal or easily flammable objects into the ventilation outlets.
- When using the product on a cart, fix it with belts to avoid its drop.
- When connecting the product to peripheral equipment, turn the power off.

- **Caution Symbols Used Within this Manual**

Symbols indicating items requiring caution which are used in this manual are shown below together with their meaning.

DANGER: Indicates an item where there is a danger of serious personal injury (death or serious injury).

WARNING: Indicates an item relating to personal safety or health.

CAUTION: Indicates an item relating to possible damage to the product or instrument or relating to a restriction on operation.

- **Safety Marks on the Product**

The following safety marks can be found on Advantest products.

 : ATTENTION - Refer to manual.

 : Protective ground (earth) terminal.

 : DANGER - High voltage.

 : CAUTION - Risk of electric shock.

- **Replacing Parts with Limited Life**

The following parts used in the instrument are main parts with limited life.
Replace the parts listed below before their expected lifespan has expired to maintain the performance and function of the instrument.
Note that the estimated lifespan for the parts listed below may be shortened by factors such as the environment where the instrument is stored or used, and how often the instrument is used.
The parts inside are not user-replaceable. For a part replacement, please contact the Advantest sales office for servicing.

Each product may use parts with limited life.
For more information, refer to the section in this document where the parts with limited life are described.

Main Parts with Limited Life

Part name	Life
Unit power supply	5 years
Fan motor	5 years
Electrolytic capacitor	5 years
LCD display	6 years
LCD backlight	2.5 years
Floppy disk drive	5 years
Memory backup battery	5 years

- **Hard Disk Mounted Products**

The operational warnings are listed below.

- Do not move, shock and vibrate the product while the power is turned on.
  Reading or writing data in the hard disk unit is performed with the memory disk turning at a high speed. It is a very delicate process.

- Store and operate the products under the following environmental conditions.
  An area with no sudden temperature changes.
  An area away from shock or vibrations.
  An area free from moisture, dirt, or dust.
  An area away from magnets or an instrument which generates a magnetic field.

- Make back-ups of important data.
  The data stored in the disk may become damaged if the product is mishandled. The hard disc has a limited life span which depends on the operational conditions. Note that there is no guarantee for any loss of data.

- **Precautions when Disposing of this Instrument**

When disposing of harmful substances, be sure dispose of them properly with abiding by the state-provided law.

Harmful substances: (1) PCB (polycarbon biphenyl)
(2) Mercury
(3) Ni-Cd (nickel cadmium)
(4) Other
Items possessing cyan, organic phosphorous and hexadic chromium and items which may leak cadmium or arsenic (excluding lead in solder).

Example: fluorescent tubes, batteries

Environmental Conditions

This instrument should be only be used in an area which satisfies the following conditions:

- An area free from corrosive gas
- An area away from direct sunlight
- A dust-free area
- An area free from vibrations
- Altitude of up to 2000 m

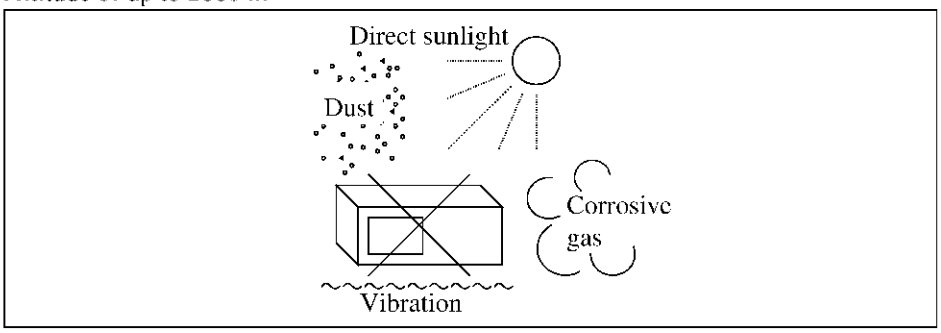


Figure-1 Environmental Conditions

- Operating position

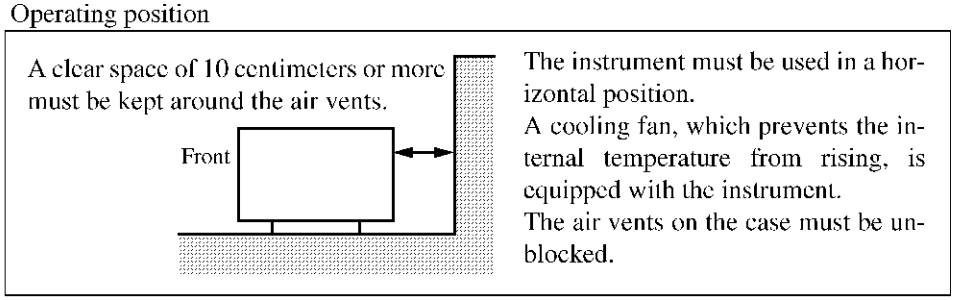


Figure-2 Operating Position

- Storage position

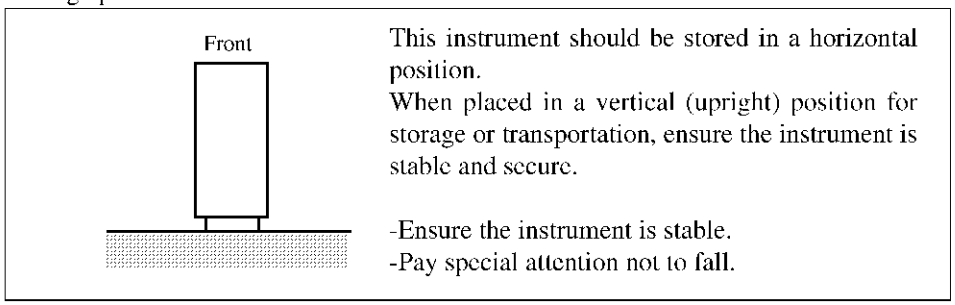


Figure-3 Storage Position

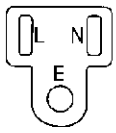
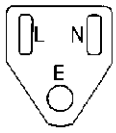
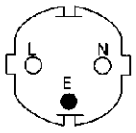
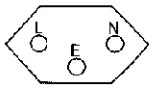
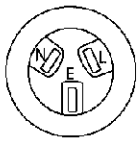
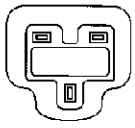
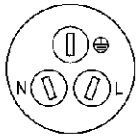
- The classification of the transient over-voltage, which exists typically in the main power supply, and the pollution degree is defined by IEC61010-1 and described below.

  Impulse withstand voltage (over-voltage) category II defined by IEC60364-4-443

  Pollution Degree 2

Types of Power Cable

Replace any references to the power cable type, according to the following table, with the appropriate power cable type for your country.

Plug configuration	Standards	Rating, color and length	Model number (Option number)
	PSE: Japan Electrical Appliance and Material Safety Law	125 V at 7 A Black 2 m (6 ft)	Straight: A01402 Angled: A01412
	UL: United States of America CSA: Canada	125 V at 7 A Black 2 m (6 ft)	Straight: A01403 (Option 95) Angled: A01413
	CEE: Europe DEMKO: Denmark NEMKO: Norway VDE: Germany KEMA: The Netherlands CEBEC: Belgium OVE: Austria FIMKO: Finland SEMKO: Sweden	250 V at 6 A Gray 2 m (6 ft)	Straight: A01404 (Option 96) Angled: A01414
	SEV: Switzerland	250 V at 6 A Gray 2 m (6 ft)	Straight: A01405 (Option 97) Angled: A01415
	SAA: Australia, New Zealand	250 V at 6 A Gray 2 m (6 ft)	Straight: A01406 (Option 98) Angled: ---------
	BS: United Kingdom	250 V at 6 A Black 2 m (6 ft)	Straight: A01407 (Option 99) Angled: A01417
	CCC:China	250 V at 10 A Black 2 m (6 ft)	Straight: A114009 (Option 94) Angled: A114109

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1 INTRODUCTION

1.1 Product Description

The Plotter Output option (OPT 07) is software that makes it possible for you to output the R3267/3273 waveform information to a plotter compatible with HP-GL (Hewlett-Packard Graphics Language).

The following information can be output to the plotter when using this option:

- Waveform data (including graticule lines, center frequencies, span frequencies, etc.).
- List of marker data
- Measurement results such as ACP and OBW

There are three output formats available for this option:

- Full-size paper mode.
- Two-part mode in the upper and lower parts
- Four-part mode in the upper, lower, left and right parts

The plotter compatible with HP-GL can be connected to the R3267/3273. ADVANTEST Corp. checks that the plotters listed in Table 1-1 operate correctly.

Table 1-1 Operation Tested Plotters

Manufacturers	Model name
ADVANTEST	R9833
Hitachi Denshi	682-XA (Note) Set all of 4 pens to the pen slot.
Hewlett Packard	HP7470A, HP7440A, HP7475A, HP7550A

1.2 Accessories

Name of accessory	Type name	Quantity	Remarks
R3267/73 OPT07 Operation manual	ER3267/73OPT07	1	English

2 HOW TO USE THE PLOTTER

Connecting the GPIB cable to the plotter

1. Turn off the instrument and plotter powers, and then connect the GPIB cable to both units.

NOTE: ***Connect GPIB cable after AC power turned off.***

Setup for the plotter

1. Set the GPIB address to be used for the plotter.
   Setup listen only or 0 to 30 for the plotter address.

2. Set the form to be used for the plotter.
   Set A4 size paper in landscape orientation on the plotter.

NOTE: ***Some plotters need more setup in addition to the setup of the address, if it is necessary then read manual for details.***

Setup for the plot format

1. Press **CONFIG**, ***Copy Config*** and ***Plotter***.
   The Plotter dialog box is displayed.

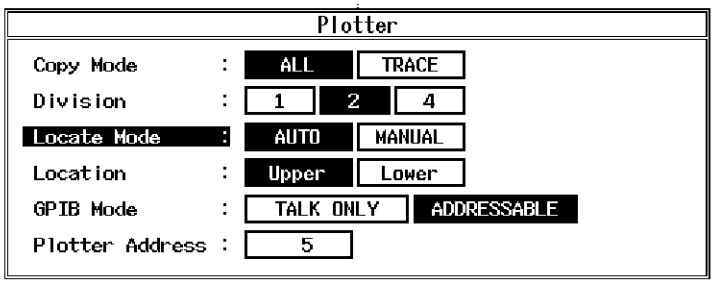


Figure 2-1 Plotter Dialog Box

2. Select ***Copy Mode***.
   ALL: All of the data on the screen is plotted.
   TRACE: Only trace on the screen is plotted.

3. Select ***Division***.
   1: The plot is carried out to the full size of the paper.
   2: The plot is carried out on the two part split size.
   4: The plot is carried out on the four part split size.

4. Select ***Locate Mode***.
   AUTO: Location can be moved automatically.
   At the two part split size.
   Upper→Lower→Upper
   At the four part split size.
   UpperL→ UpperR→LowerL→LowerR→UpperL
   MANUAL:
   Location cannot be moved automatically.

5. Select ***Location***.
   Plot is set for the split pot.

6. Set ***GPIB Mode***.
   TALK ONLY:
   Talk only mode is set.
   ADDRESSABLE:
   Addressable mode is set.

7. Set ***Plotter Address***.
   When addressable mode is set for the Spectrum analyzer, specify the address of the connected plotter. Moreover, also specify the same address for the connected plotter.

NOTE: This setting is not available if the talk only output is already set.

---

8. Press ***Plotter***.
   The Plotter dialog box is removed.

Specify the destination

9. Press ***Copy Device***.
   The Copy Device dialog box is displayed.

10. Select ***Plotter***.

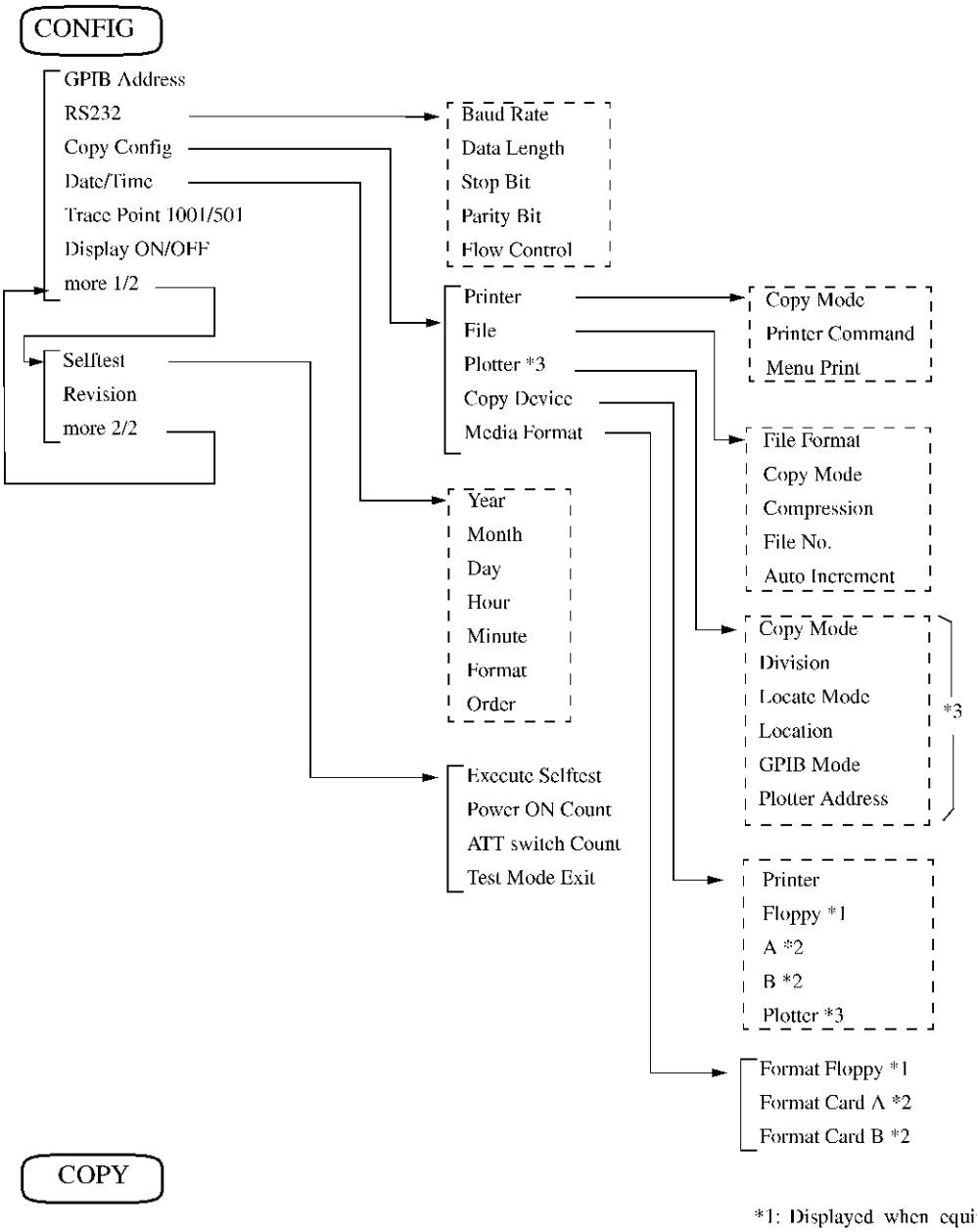
Output to the plotter

CAUTION: ***The following types of screen data cannot be plotted:***
- Pseudo analog display
- Spurious measurement result screen
- Option screen such as modulation analysis option

1. Display the screen you wish to plot and press **COPY**.
   The output data is the data of the display at the time when **COPY** key is pressed. Operation of the panel key is available after output is started. (it is not necessary to wait after the completion of plot.)

NOTE: ***Even if COPY key is pressed again during plotting but this plot requirement is omitted.***
When you wish to cancel this operation after pressing COPY, press SHIFT and COPY. However, if the plotter has the buffer memory then the stored data in the buffer memory is plotted.

3 MENU MAP



*1: Displayed when equipped with the floppy disk drive.
*2: Displayed when equipped with the memory card drive (option).
*3: Displayed when equipped with the option 07.

4 REMOTE PROGRAMMING

4.1 GPIB Command Codes

Function		Listener code	Talker request	
			Code	Output format
Hard copy				
Device selection				
	Plotter	HCDEV PLT	-	-
	Printer	HCDEV PRT	-	-
	Floppy disk	HCDRV FDD	-	-
Plotter output				
Object to be plotted				
	All information	PLALL	-	-
	Only trace	PLTRACE	-	-
Split size				
	Full size	PLPIC1	-	-
	Two part split	PLPIC2	-	-
	Four part split	PLPIC4	-	-
Plot positions				
	Center	PLMID	-	-
	Upper	PLUP	-	-
	Lower	PLLOW	-	-
	Upper left	PLUPLEFT	-	-
	Upper right	PLUPRIGHT	-	-
	Lower left	PLLOWLEFT	-	-
	Lower right	PLLOWRIGHT	-	-
Moving for plot positions				
	Automatic	PLAUTO	-	-
	Manual	PLMAN	-	-
Address mode				
	Talk only	PLTALK ONLY	-	-
	Address	PLTALK ADRS	-	-
Plotter address		PLADRS *	PLADRS?	Integer (0 to 30)
Execution plot				
		PLOT	-	-
		HCOPY	-	-

4.2 Example Program

This section describes remote control examples used with GPIB port.

CAUTION: ***Visual Basic 4.0 is used in the sample programs shown here. Also, National Instruments-made GPIB board (referred to as NI-made for brevity henceforth) is used for the GPIB control board; NI-made driver is used for the control driver.***

Example:Outputting data from an analyzer with address 8 to a plotter with address 5

```
Dim res As Integer
Dim boardID As Integer
Dim spa As Integer

Call ibfind("GPIB0", boardID)          'Open the device.
Call ibdev(0, 8, 0, 13, 1, 0, spa)     'Initialize the device.

Call ibclr(spa)                        'Perform a device clear.

Call ibwrt(spa, "*CLS")                'Clear the status byte.
Call ibwrt(spa, "OPR 512")             'Enables the Printing bit of the Operation status register.
Call ibwrt(spa, "*SRE 128")            'Enables the Operation status bit of the status byte.
Call ibwrt(spa, "S0")                  'Set the mode to the SRQ send mode.

Call ibwrt(spa, "PLOT")                'Output request to the plotter.

Call ibcmd(boardID, "?_%H")            'Stop the addressing to the listener and the talker.
                                       'Set a listen address of 5, and a talk address of 8.
Call ibgts(boardID, 0)                 'Start to output data from this instrument.

Do
  Call WaitSRQ(boardID, res)           'Waits for the SRQ which checks if data to the plotter has been
                                       'sent.
  If res = 1 Then                      'Enter the loop when the SRQ wait timeout occurs.
        Exit Do                        'Exit from the loop on detecting the SRQ.
  End If
  DoEvents
Loop

Call ibwrt(spa, "CF 30MZ")             'Send the next command.
```

APPENDIX

A.1 Plotter Paper Size

Plotter model	Paper size
HP7470A	A4 (ISO A4)
HP7440A	A4 (ISO A4)
HP7475A	MET A4 (ISO A4)
HP7550A	MET A4 (ISO A4)
R9833	A4 landscape

A.2 Assignment of the Plotter Pen

Pen number	Object to be plotted
Pen 1	Frame
Pen 2	Marker and characters
Pen 3	Trace A
Pen 4	Trace B
Pen 5	Display line
Pen 6	XY cursor
Pen 7	Windows
Pen 8	Limit line

A.3 Error Message

Code	Error message	Remarks
303	Plotter problem. Check power and cable.	The plotter is not in an operational status, or the cable has a problem.
306	Not available in this mode.	The plotter output cannot be processed correctly under the current screen status.

IMPORTANT INFORMATION FOR ADVANTEST SOFTWARE

PLEASE READ CAREFULLY: This is an important notice for the software defined herein. Computer programs including any additions, modifications and updates thereof, operation manuals, and related materials provided by Advantest (hereafter referred to as "SOFTWARE"), included in or used with hardware produced by Advantest (hereafter referred to as "PRODUCTS").

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Restrictions

(1) You may not use the SOFTWARE for any purpose other than for the use of the PRODUCTS.
(2) You may not copy, modify, or change, all or any part of, the SOFTWARE without permission from Advantest.
(3) You may not reverse engineer, de-compile, or disassemble, all or any part of, the SOFTWARE.

Liability

Advantest shall have no liability (1) for any PRODUCT failures, which may arise out of any misuse (misuse is deemed to be use of the SOFTWARE for purposes other than it's intended use) of the SOFTWARE. (2) For any dispute between you and any third party for any reason whatsoever including, but not limited to, infringement of intellectual property rights.

LIMITED WARRANTY

1. Unless otherwise specifically agreed by Seller and Purchaser in writing, Advantest will warrant to the Purchaser that during the Warranty Period this Product (other than consumables included in the Product) will be free from defects in material and workmanship and shall conform to the specifications set forth in this Operation Manual.

2. The warranty period for the Product (the "Warranty Period") will be a period of one year commencing on the delivery date of the Product.

3. If the Product is found to be defective during the Warranty Period, Advantest will, at its option and in its sole and absolute discretion, either (a) repair the defective Product or part or component thereof or (b) replace the defective Product or part or component thereof, in either case at Advantest's sole cost and expense.

4. This limited warranty will not apply to defects or damage to the Product or any part or component thereof resulting from any of the following:

   (a) any modifications, maintenance or repairs other than modifications, maintenance or repairs (i) performed by Advantest or (ii) specifically recommended or authorized by Advantest and performed in accordance with Advantest 's instructions;

   (b) any improper or inadequate handling, carriage or storage of the Product by the Purchaser or any third party (other than Advantest or its agents);

   (c) use of the Product under operating conditions or environments different than those specified in the Operation Manual or recommended by Advantest, including, without limitation, (i) instances where the Product has been subjected to physical stress or electrical voltage exceeding the permissible range and (ii) instances where the corrosion of electrical circuits or other deterioration was accelerated by exposure to corrosive gases or dusty environments;

   (d) use of the Product in connection with software, interfaces, products or parts other than software, interfaces, products or parts supplied or recommended by Advantest;

   (e) incorporation in the Product of any parts or components (i) provided by Purchaser or (ii) provided by a third party at the request or direction of Purchaser or due to specifications or designs supplied by Purchaser (including, without limitation, any degradation in performance of such parts or components);

   (f) Advantest's incorporation or use of any specifications or designs supplied by Purchaser;

   (g) the occurrence of an event of force majeure, including, without limitation, fire, explosion, geological change, storm, flood, earthquake, tidal wave, lightning or act of war; or

   (h) any negligent act or omission of the Purchaser or any third party other than Advantest.

5. **EXCEPT TO THE EXTENT EXPRESSLY PROVIDED HEREIN, ADVANTEST HEREBY EXPRESSLY DISCLAIMS, AND THE PURCHASER HEREBY WAIVES, ALL WARRANTIES, WHETHER EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, INCLUDING, WITHOUT LIMITATION, (A) ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND (B) ANY WARRANTY OR REPRESENTATION AS TO THE VALIDITY, SCOPE, EFFECTIVENESS OR USEFULNESS OF ANY TECHNOLOGY OR ANY INVENTION.**

6. **THE REMEDY SET FORTH HEREIN SHALL BE THE SOLE AND EXCLUSIVE REMEDY OF THE PURCHASER FOR BREACH OF WARRANTY WITH RESPECT TO THE PRODUCT.**

7. **ADVANTEST WILL NOT HAVE ANY LIABILITY TO THE PURCHASER FOR ANY INDIRECT, INCIDENTAL, SPECIAL, CONSEQUENTIAL OR PUNITIVE DAMAGES, INCLUDING, WITHOUT LIMITATION, LOSS OF ANTICIPATED PROFITS OR REVENUES, IN ANY AND ALL CIRCUMSTANCES, EVEN IF ADVANTEST HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES AND WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING, WITHOUT LIMITATION, NEGLIGENCE), STRICT LIABILITY, INDEMNITY, CONTRIBUTION OR OTHERWISE. TORT (INCLUDING, WITHOUT LIMITATION, NEGLIGENCE), STRICT LIABILITY, INDEMNITY, CONTRIBUTION OR OTHERWISE.**

8. **OTHER THAN THE REMEDY FOR THE BREACH OF WARRANTY SET FORTH HEREIN, ADVANTEST SHALL NOT BE LIABLE FOR, AND HEREBY DISCLAIMS TO THE FULLEST EXTENT PERMITTED BY LAW ANY LIABILITY FOR, DAMAGES FOR PRODUCT FAILURE OR DEFECT, WHETHER ARISING OUT OF BREACH OF CONTRACT, TORT (INCLUDING, WITHOUT LIMITATION, NEGLEGENCE), STRICT LIABILITY, INDEMNITY, CONTRIBUTION OR OTHERWISE.**

CUSTOMER SERVICE DESCRIPTION

In order to maintain safe and trouble-free operation of the Product and to prevent the incurrence of unnecessary costs and expenses, Advantest recommends a regular preventive maintenance program under its maintenance agreement.

Advantest's maintenance agreement provides the Purchaser on-site and off-site maintenance, parts, maintenance machinery, regular inspections, and telephone support and will last a maximum of ten years from the date the delivery of the Product. For specific details of the services provided under the maintenance agreement, please contact the nearest Advantest office listed at the end of this Operation Manual or Advantest 's sales representatives.

Some of the components and parts of this Product have a limited operating life (such as, electrical and mechanical parts, fan motors, unit power supply, etc.). Accordingly, these components and parts will have to be replaced on a periodic basis. If the operating life of a component or part has expired and such component or part has not been replaced, there is a possibility that the Product will not perform properly. Additionally, if the operating life of a component or part has expired and continued use of such component or part damages the Product, the Product may not be repairable. Please contact the nearest Advantest office listed at the end of this Operation Manual or Advantest's sales representatives to determine the operating life of a specific component or part, as the operating life may vary depending on various factors such as operating condition and usage environment.

SALES & SUPPORT OFFICES

Advantest Korea Co., Ltd.
22BF, Kyobo KangNam Tower,
1303-22, Seocho-Dong, Seocho-Ku, Seoul #137-070, Korea
Phone: +82-2-532-7071
Fax: +82-2-532-7132

Advantest (Suzhou) Co., Ltd.
Shanghai Branch Office:
Bldg. 6D, NO.1188 Gumei Road, Shanghai, China 201102 P.R.C.
Phone: +86-21-6485-2725
Fax: +86-21-6485-2726

Shanghai Branch Office:
406/F, Ying Building, Quantum Plaza, No. 23 Zhi Chun Road,
Hai Dian District, Beijing,
China 100083
Phone: +86-10-8235-3377
Fax: +86-10-8235-6717

Advantest (Singapore) Pte. Ltd.
438A Alexandra Road, #08-03/06
Alexandra Technopark Singapore 119967
Phone: +65-6274-3100
Fax: +65-6274-4055

Advantest America, Inc.
3201 Scott Boulevard, Suite, Santa Clara, CA 95054, U.S.A
Phone: +1-408-988-7700
Fax: +1-408-987-0691

ROHDE & SCHWARZ Europe GmbH
Mühldorfstraße 15 D-81671 München, Germany
(P.O.B. 80 14 60 D-81614 München, Germany)
Phone: +49-89-4129-13711
Fax: +49-89-4129-13723

ADVANTEST

http://www.advantest.co.jp

ADVANTEST CORPORATION
Shin-Marunouchi Center Building, 1-6-2 Marunouchi, Chiyoda-ku, Tokyo 100-0005, Japan
Phone: +81-3-3214-7500