# **NoiseKen**

# INSTRUCTION MANUAL I/F BOX

MODEL 07-00027A

NOISE LABORATORY CO., LTD.

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## 1. IMPORTANT SAFETY PRECAUTIONS

The "Important Safety Precautions" explain rules that must be followed to prevent any risk of harm or injury to the user of the instrument.

- 1. This unit cannot be used in a fire prohibited area or other explosive areas. If used in such an area, this unit is liable to cause combustion or ignition due to electric discharge etc.
- 2. A person having a pace maker or other electronic medical device implanted into or connected to his body should not operate this unit and also should not enter the test area while the unit is operating.
- 3. When connecting cables and carrying out settings, place the unit in the STOP conditions and interrupt the EUT supply beforehand, otherwise, an electric shock due to high voltage may be caused or the unit may be damaged. [Precautions for human body and connection]
- 4. Safety recommendations are listed in Par. "Fundamental Safety Precautions for Safety Performance" mentioned later. Thoroughly read these recommendations before doing environmental setting and connection and starting a test.

## 2. APPLICATION FORM FOR INSTRUCTION MANUAL

We place an order for an instruction manual.

1-4-4 Chiyoda Chuo-ku Sagamihara City,

Kanagawa Pref., 252-0237 Japan

Tel: +81-(0)42-712-2051

Cut

Model: 07-00027A	
Applicant:	
Company name: _	
Address:	
Department:	
Person in charge: _	
Tel No.:	
Fax No.	
	<del>-</del>
	PPLICATION FORM FOR INSTRUCTION MANUAL" d keep it for future use with care.
	N MANUAL is required, fill in the above Application Form and ring sales department of our company.
To: Noise Laboratory C	co., Ltd.

Fax: +81-(0)42-712-2050

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#### 4. PREFACE

We thank you for your purchase of the I/F BOX 07-00027A. This instruction manual ("the Manual") contains how to use the Unit and other important information. In order to obtain the highest performance from the Unit, thoroughly understand the contents of the Manual and use as ready reference for operation.

- The Manual will help operators handle and utilize the I/F BOX 07-00027A in safety.
- Keep the Manual in a place where readily available.

### 5. BASIC SAFETY PRECAUTIONS

5-1. Meaning of Safety Symbols

# **⚠** DANGER

This symbol indicates that failure to comply with the associated precaution "is highly likely to result in the risk of death or serious injury".

# **⚠** CAUTION

This symbol indicates that failure to comply with the associated precaution "may result in damage but that only physical damage is likely to occur".

## **⚠** DANGER

- 1. This unit cannot be used in a fire prohibited area or other explosive areas. If used in such an area, this unit is liable to cause combustion or ignition due to electric discharge etc.
- Do not open the cover of the unit. Only service engineers qualified by the Company can open the cover for maintenance and repair. [Precautions for human body]
- 3. NOISE LABORATORY and its selling agents shall not be liable for any accident resulting in injury or any physical damage due to abuse or mishandling of this unit, and also shall not assume the responsibility for any resultant damages. [Precautions for human body, operation, environments and connection]

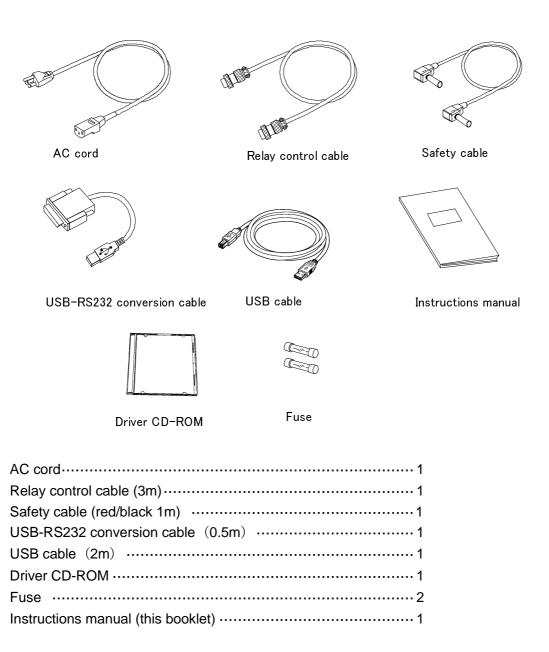
- 4. When connecting cables and carrying out settings, place the unit in the STOP conditions and interrupt the EUT supply beforehand, otherwise, an electric shock due to high voltage may be caused or the unit may be damaged. [Precautions for human body and connection]
- 5. To ensure safety in operation, use the accessories (use power cord and LINE input cable with relevant safety agency approval) and optional equipment supplied by our company. Use of others may degrade the safety and performance of this unit. [Precaution for handling and safety]

## **⚠** CAUTION

- 6. Be sure to connect the ground plane to the safety ground. [Precautions for operation and safety]
- 7. Supply power for test within the rated range (Do not let output terminals be short-circuited). Do not misplace the polarity. Otherwise the Unit may be damaged.

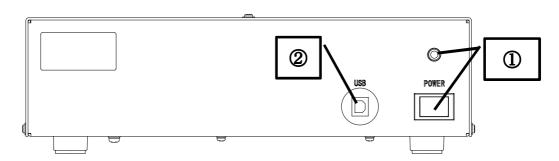
  [Precautions for operation and connection]
- 8. When this unit is off, drawing current at 5A or higher may cause damage to this unit or the digital multi-meter being connected.
- 9. Do not use nor keep the unit in a hot or cold environment (Operating temperature: 15°C~35°C/Operating humidity range: 25~75%) otherwise, the unit may be damaged or only exhibit limited performance. [Precaution for environments]
- 10. If condensation is found, fully dry the unit before operating it, otherwise, the unit may be damaged or only exhibit limited performance. [Precautions for environments]
- 11. Avoid using this unit in a high relative humidity or dusty environment. [Precaution for environments]
- 12. When repair, maintenance work or internal adjustment (except for the internal discharge gap adjustment) is required, our company's service engineer or our designated service engineer takes charge of such work.
- 13. Do not wipe off the body and peripheral equipment with thinner, alcohol or other solvent. When the unit is dirty, soak a cloth in a detergent, wring it and wipe the unit with this cloth. Using solvents may spoil the appearance. [Precautions for handling]
- 14. When installing the unit, do not block the vent. [Precaution for environments]
- 15. Operate this unit on the supply voltage and current specified. Misuse may cause damage of this unit or other equipment. [Precautions for supply connection]

## 6. Accessory



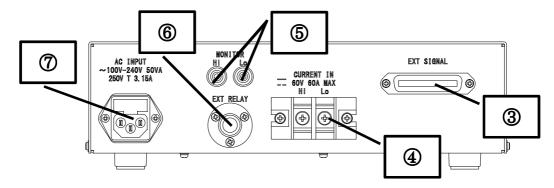
## 7. NAME AND FUNCTION OF EACH PART

#### 7-1. Front panel



- ① POWER switch and Lamp the Main power switch of this unit. Lights-up when the unit POWER is on.
- USB portThis USB port is connected to an external PC by using the supplied USB cable.

#### 7-2. Real panel



#### ③ 【EXT SIGNAL】(option)

External Signal port for an external test/inspection equipment for checking the ECU operating status (working normmalyy or malfunctiongng)

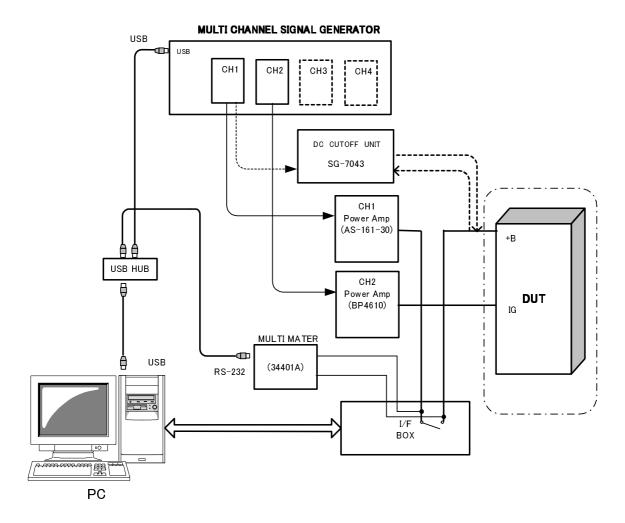
#### ④ 【CURRENT IN】

The positive (+) line from the bipolar power amplifier shall be connected to the EUT thorough CURRNET IN port of the I/B box. Care shall be taken not to connect in reverse polarity. When this unit is off, drawing current at 5A or higher may cause damage to this unit or the digital multi-meter being connected. Check to see that the pilot lamp lights-up before turning on the EUT.

- **5** MONITOR terminals
  - Connects these terminals to the digital multi-meter by using the supplied safety cables.
- 6 EXT RELAU (option)
  - Connector required in case of controlling an external relay
- Tused AC inlet
  - Connect the unit to an AC service outlet (100-240V). Protected at fuses rated 3.15A.

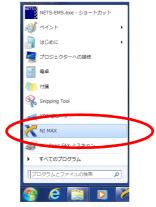
## 8. CONNECTIONS

#### 8-1. System configuration example

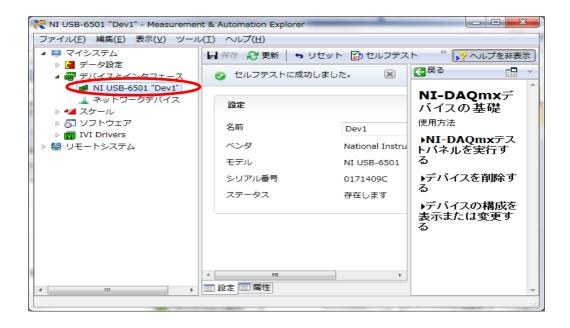


#### 8-2. Preparation for connecting this unit to a PC

- 1. Install NI-DAQmxX.X.X in the DVD (NATIONAL INSTRUMENTS) (X.X.X varies depending on its versions)
- 2. Connect the USB port of this unit to a PC by the USB cable.
- 3. Start N.I MAX application on START menu.

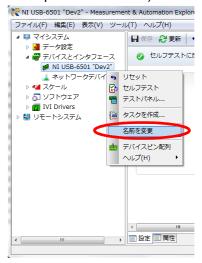


4. Check to see that NI USB-6525 device is marked "Dev1" under [my system]-[Device and Interface]. (The below example indicates "USB-6501" but actually your PC should indicate USB-6525). When "Dev1" is found there, you can terminate this process as no further sstep is required.



If aother name than "Dev1" has been shown, right-click NI USB-6525 icon and change its name to "Dev1". If two or more NI USB-6525 exit and "Dev1" is shown with an X mark, delete the icon with an X mark and rename "DevX" ("Dev2" in the example shown below) to "Dev1"

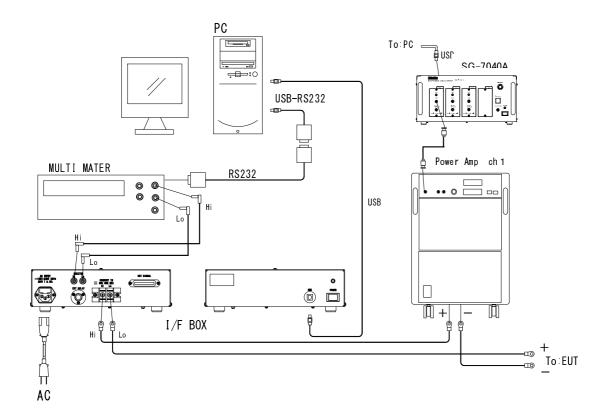




#### 8-3. Installation and connection

- Install SG-7040A, PC and bipolar amplifier according to the instructions shown in the relevant manuals.
- 2) Place this unit and multi-meter (34401A) on a stable, level and hard surface.
- 3) Install the application software into your PC.

#### 8-4. Connection



- 1) Check to see that each unit is in power OFF state.
- 2) Connect I/F box unit to AC by using the supplied AC cord.
- 3) PIC-I/O board on the rear side of the PC shall be connected to USB connector on the front of I/F box by using the supplied USB cable.
- 4) MONITOR terminals of I/F box unit and the digital multi-meter current input ports are connected with the correct polarity by using the supplied safety cables.
- 5) Connect the digital multi-meter to AC, and RS-232 port on the rear shall be connected to a USB port of the PC though supplied RS-232 cable and USB-RS232 conversion cable. (use a USB-HUB when required)
- 6) The positive (+) line from the bipolar power amplifier shall be connected to the EUT thorough CURRNET IN port of I/B box. Care shall be taken not to connect in reverse polarity. When this unit is off, drawing current at 5A or higher may cause damage to this unit or the digital multi-meter being connected. Check to see that the pilot lamp lights-up before turning on the EUT.

## 9. OPERATION

#### 9-1. Initial setting

1) Check the BIAS setting and input gain selection the bipolar power amplifier.

#### 9-2. Power-on steps

- 2) Turn on the PC.
- 3) Turn on I/F box.
- 4) Turn on the SG-7040A multi-channel signal generator
- 5) Turn on all the associated bipolar bower amplifiers.
- 6) Start the application software. The software will control testing and measurement.

## [Warning]

When this unit is off, drawing current at 5A or higher may cause damage to this unit or the digital multi-meter being connected. Check to see that the pilot lamp lights-up before turning on the EUT.

## 10. SPECIFICATIONS

Power supply AC100V-240V 50/60Hz
Dimensions W300×D286×H100 mm

PC interface USB 2.0 Weight Approx. 2kg

#### 10-1. External interface signals (option)

Function of each signal is software defined.

#### 1) EXT SIGNAL

Pin	Signal	Pion	Signal
no.		No.	
1	Input 1 (not used)	19	Output 1 (not used)
2	Input 2 (not used)	20	Output 2 (not used)
3	Input 3 (not used)	21	Output 3 (not used)
4	Input 4 (not used)	22	Output 4 (not used)
5	Input 5 (not used)	23	Output 5 (not used)
6	Input 6 (not used)	24	
7		25	
8		26	
9		27	
10		28	
11		29	
12		30	
13		31	
14		32	
15		33	
16		34	
17	+12V output	35	OV
18	+12V output	36	OV

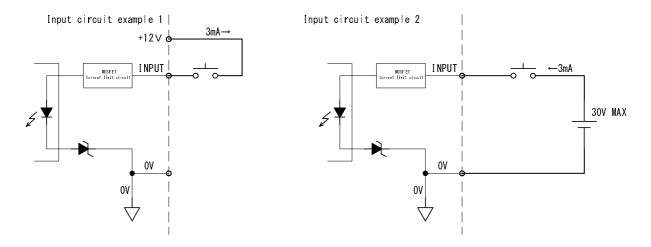
Connector 57-40360(DDK) mating connector: 57-30360

#### 2) EXT RELAY

Pin	Signal	
No.		
1	+12V Output	
2	Output 1 (not used)	
3	Input 1 (not used)	
4	Input 2 (not used)	
5	Output 2 (not used)	
6	OV	

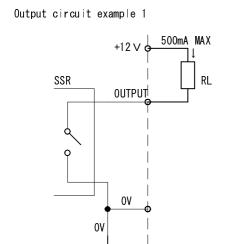
Connector SCH-1606R (Sanwa) Mating connect: SCH-1606P

#### 10-2. Signal input

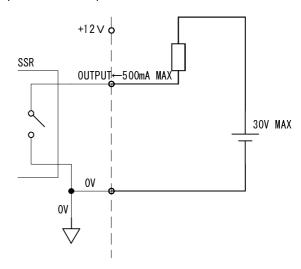


- Photo-coupler input, pulled up. Turns on with 0V and short-circuit. Detects falling edge.
- Input current 3 mA (per channel)
- Minimum pulse width 200 µs
- Propagation delay : 65 μs

#### 10-3. Signal output



Output circuit example 2



- Solid-state relay, normal-open, 0Vand short-circuit with "1(ON)". Level signal output
- Switching voltage: DC30 V (maximum)
- Switching current: 500mA (maximum)

#### 11. WARRANTY

#### Servicing terms

The following terms are applicable to servicing by Noise Laboratory Co., Ltd., (hereafter referred to as the Company) provided to maintain the intended performance of its products.

#### 1. Scope

The following terms shall apply only to products made by the Company.

#### 2. Technical servicing fee

In the event of a failure of a product within the warranty period (see warranty section), the Company will repair a product without charge. After the warranty expires, repairs will be billed at a nominal cost.

#### 3. Ownership of defective parts

Any defective part exchanged under the Company's servicing belongs to it.

#### 4. Limited liability

In the event that damages resulting from servicing by the Company are intentional or caused by negligence, the Company will pay the cost but at the purchase value of the relevant product maximum. But, notwithstanding the foregoing, the Company shall not be responsible for any incidental or consequential damages of any nature, including without limitation thereof loss of would-be profit or compensation demanded from a third party

#### 5. Refusal to offer servicing

The company may not accept a repair order in the following cases:

- More than 5 years have passed since the product discontinued
- More than 8 years have passed after delivery
- Required component for servicing already discontinued and no alternative is available.
- Product changed, repaired or remodeled without obtaining a prior permission from the Company.
- Product severely damaged to the extent it has lost its original form

#### **Limited warranty**

Noise Laboratory Co., Ltd. (hereafter referred to as the Company) warrants its products to be free from defects in materials and workmanship under normal use and service for a period of one year from date of delivery. In the event of failure of a product covered by this warranty, the Company will repair the product or may, at its option, replace it in lieu of repair without charge.

Not withstanding the foregoing, the Company shall not be responsible for any incidental or consequential damages of any nature, including without limitation thereof loss of would-be profit or compensation demanded from a third party. This warranty is valid only in Japan.

#### 1. Scope

This warranty shall only apply to products made by the Company.

#### 2. Period

One year from date of delivery. The warranty may be valid in 6 months after servicing if the same failure on the same component has repeated.

#### 3. Exclusions

The followings are exclusions from this warranty:

- Consumable parts (including HV relay)
- Failure caused by misuse, neglect, accident or abnormal conditions of operation
- Failure caused by remodeling on the user side without prior permission from the Company
- Failure caused by servicing by unauthorized personnel by the Company
- Failure due to force majeure including but not limited to, acts of God, fire, war, riot, rebellion and others
- Failure due to shock or drop in or after transit
- Failure due to operation in environment being out of ambient specifications.
- A unit shipped to overseas.

## 12. MAINTENANCE

- 1. When repair, maintenance or internal adjustment of the unit is required, a qualified service engineer takes charge of such work.
- 2. Maintenance on the user side is restricted to the outside cleaning and functional check of the unit.
- 3. When checking or replacing the fuse, turn off the switch of the unit and disconnect the plug socket beforehand.
- 4. When cleaning the unit, turn off the switch of this unit and the connected equipment and disconnect the plug socket beforehand.
- 5. Avoid using chemicals for cleaning. Otherwise, the coating of the unit may peel off or the sight glass may be broken.
- 6. Do not open the cover of this unit.

## 13. NOISE LABORATORY SUPPORT NETWORK

- •If a symptom which seems a trouble is found, check the symptom against the following check sheet and inform the model name and serial Number of the product together with the symptom to Noise Laboratory or your nearest sales agent of Noise Laboratory.
- •When the product is returned to Noise Laboratory, write the state of the trouble, contents of your request, model name and serial number in a repair order, pack the product and repair order sheet in the former package or equivalent suitable for transit and send them back.

## NOISE LABORATORY CO., LTD.

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