SSU5000A Series

Mechanical Switch

UserManual

EN03B

SIGLENT TECHNOLOGIES CO.,LTD

Category

1 Copyright and statement

Declaration

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2   General safety summary

Carefully read the following safety precautions to avoid any personal injury or damage to the instrument and any products connected to it. To avoid potential hazards, please use the instrument as specified:

- Only qualified technicians can carry out maintenance of the product.
- Only the power cord designed for the instrument and authorized by the local country could be used.
- The instrument is grounded through the protective earth conductor of the power cord. To avoid electric shock, please make sure the instrument is grounded correctly before connecting its input or output terminals.
- The potential of the signal wire ground is equal to the earth, so do not connect the signal wire to a high voltage.
- To avoid fire or electric shock, please look over all ratings and safety labels on the instrument. Before connecting the instrument, please read the manual carefully to gain more information about the ratings.
- Do not touch exposed contacts or components when the power is on.
- To avoid short-circuiting to the interior of the device or electric shock, please do not operate the instrument in a humid environment.
- To avoid damage to the device or personal injury, it is important to operate the device away from an explosive atmosphere.
- To avoid the influence of dust and moisture in the air, please keep the surface of the device clean and dry.

3 General Care and Cleaning

Care:

Do not store or leave the instrument in direct sunshine for extended periods.

To avoid damage to the instrument or probes, please do not expose them to fog, liquid, or solvents.

Cleaning:

Please perform the following steps to clean the instrument and probes.

1. Disconnect the instrument from all power sources and then clean it with a soft damp cloth.

2. Clean the loose dust on the outside of the instrument and probe with a soft cloth.

To avoid damage to the surface of the instrument and probe, please do not use any corrosive liquid or chemical cleansers.

Make sure that the instrument is completely dry before restarting it to avoid potential short circuits or personal injury.

4 General inspection

1. **Inspect the shipping container:**

   Keep the shipping container or cushioning material until the contents of the shipment have been completely checked and the instrument has passed both electrical and mechanical tests. The consigner or carrier will be responsible for damages to the instrument resulting from shipment. **SIGLENT** will not provide free maintenance or replacement.

2. **Inspect the instrument:**

   If the instrument is found to be damaged, defective, or fails in electrical or mechanical tests, please contact **SIGLENT**.
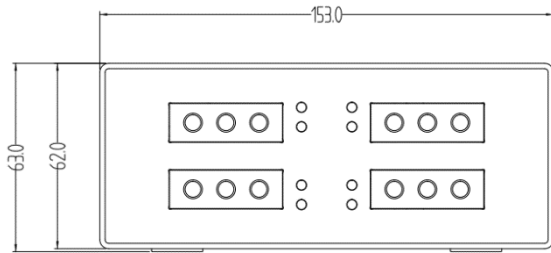
3. **Check the accessories:**

   Please check the accessories according to the packing list. If the accessories are incomplete or damaged, please contact your **SIGLENT** sales representative.
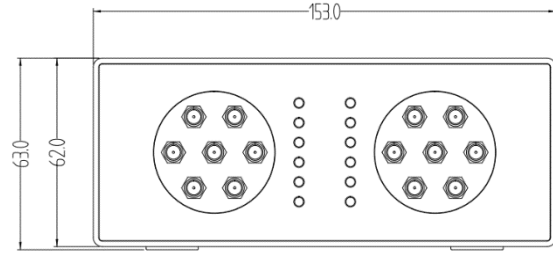
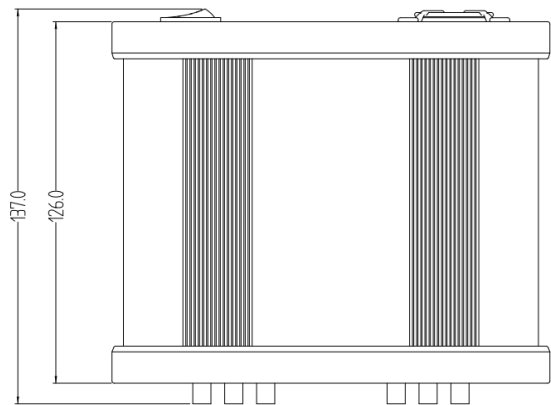# 5 Preparing for use

5.1 Dimensions

SSU5264A   SSU5266A

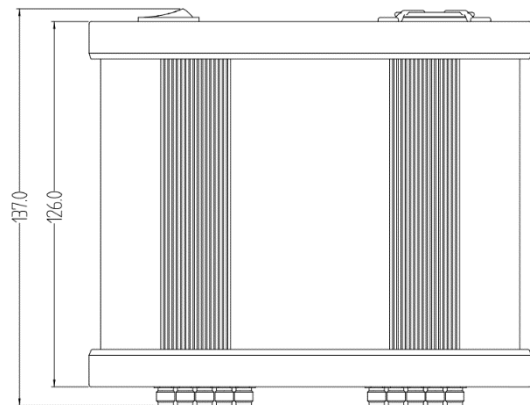Front View (unit: mm)   Front View (unit: mm)
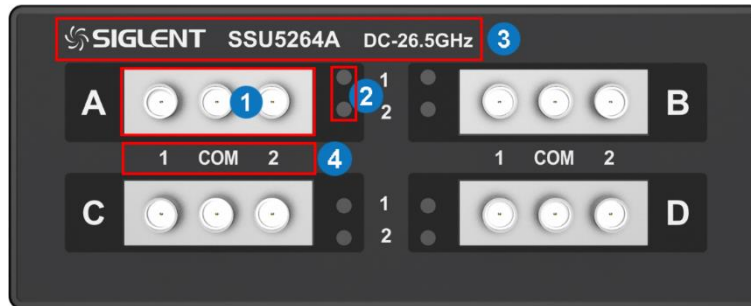

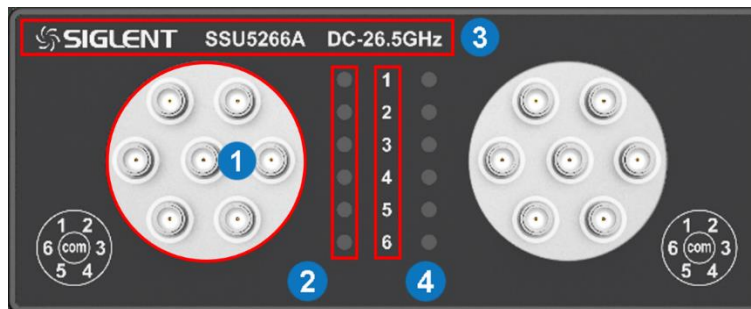Top View (unit: mm)   Top View (unit: mm)

5.2 Connect to DC power supply

The equipment accepts 12V, 2A, DC power supply. Please use the power adapter provided in the accessory to connect the instrument to the power source

5.3 Front panel

SSU5264A

SSU5266A

1. RF connectors.

SPDT RF ports and SP6T RF ports.

2. Indicator Lights.

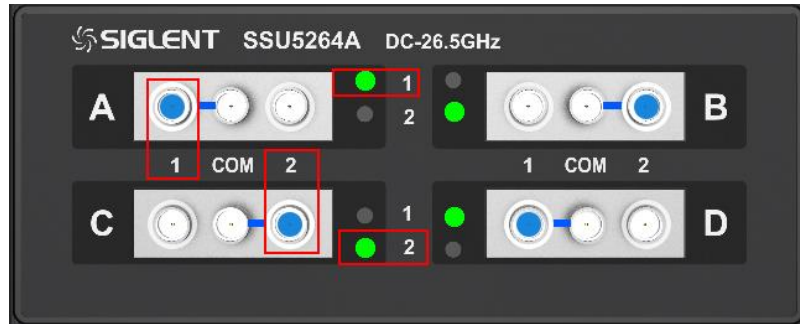Indicate which port the middle port links to.

3. Model name.

Model name and operation frequency.

4. Illustration.

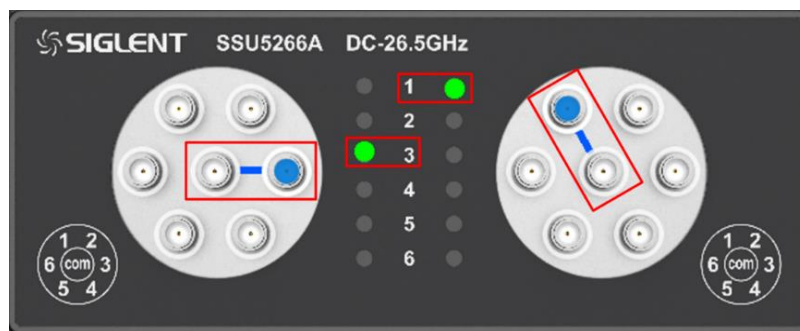Illustration of the indicator lights.

5.4 RF connectors

Front panel RF connectors (SSU5264A)

There are 4 groups of RF connectors. Every group is an independent SPDT.

When a SPDT is configurated, the middle connect will be link to left of right connect. And the indicator light will turn green 1 (Left) or green 2 (right).
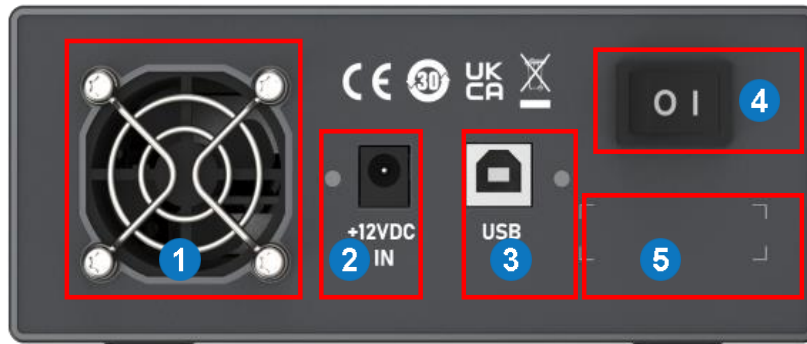

Front panel RF connectors (SSU5266A)

There are 2 groups of RF connectors. Every group is an independent SP6T.

The middle connector of the SP6T switch can be configured to connect to one of the six surrounding connectors. At this time, the connected connector indicator light lights up.

5.5 Rear panel

Rear panel

1. FAN

Used to cool down internal components of the instrument.

2. DC Power Port

12V DC power supply, 1.25A maxim current

The equipment accepts 12V, 2A DC power supply. Please connect the equipment to the DC Power Adapter provided.

3. USB Device

For commuication with host

USB port for data exchange with peripherals.

4. Power Switch

Power down or up.

5. Serial Number Label

The label of serial number of this instrument.
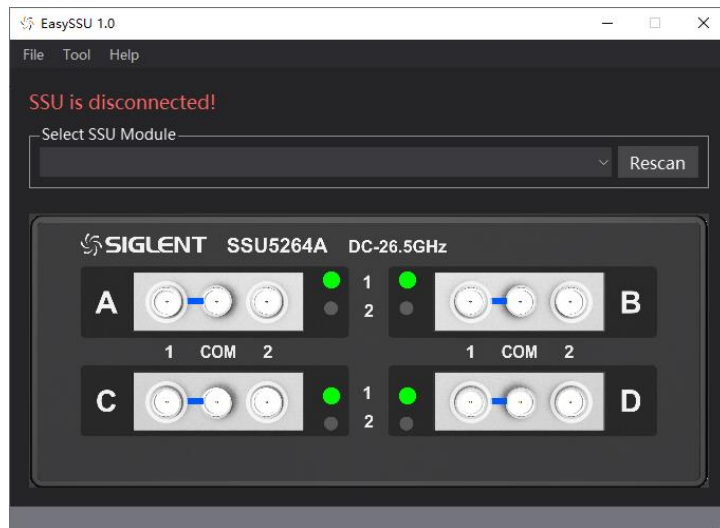
5.6 User interface

The host communicates with the instrument by USB cable. Use the SCPI instruction set. For windows system, we offer the EasySSU application to user.

6 Firmware operation

6.1 Switch status change

1. Connect the device with a USB cable, click Rescan to get the switch information and connect.
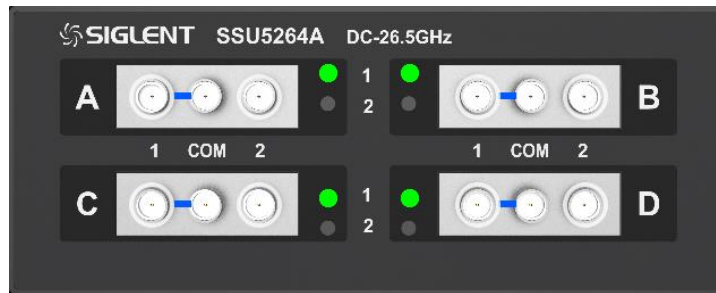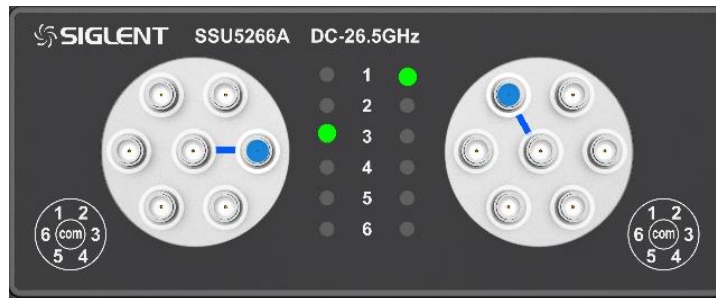
    1) SSU5264A

    2) SSU5266A

2. Click the switch button to complete the switch state change.
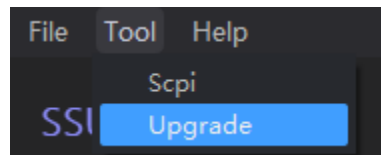
    1) SSU5264A

2) SSU5266A

6.2 Firmware upgrade

Follow this procedure to update the instrument firmware:

1. Download the firmware package from official SIGLENT websites only.

2. Connect PC to instrument with USB cable. Run the EasySSU, enter the menu Tool-Upgrade.

3. Click the Browse button to choose the firmware file, then click Begin button to update the system
    software.

4. The progress bar will appear on the screen while updating, the instrument will restart automatically
    if updates succeed or display a pop-up prompt box if updates fail.
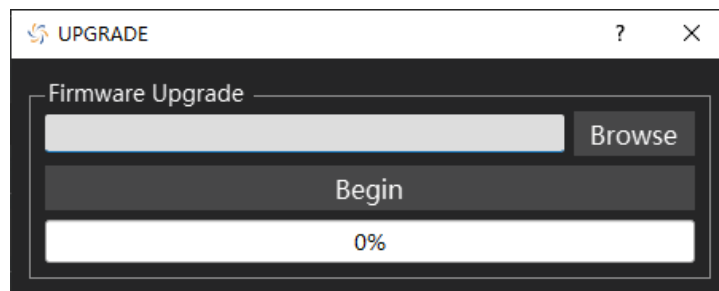
Note: Please ensure that line power is constant during the upgrade by using an Uninterruptible Power
Supply (UPS), Failure to maintain line power may be cause upgrade failure or instrument damage.

7　Remote control

The mechanical switch supports communication with compatible computers via USB interface. By using this interface, in combination with programming languages and/ or NI-VISA software, users can remotely control the mechanical switch.

SCPI Command control

1.　Get Instrument Information

Command Format	*IDN?
Instruction	Returns the information of the connected device.
Parameter Type	None
Parameter Range	None
Return	Instrument information
Example	*IDN? Return: Siglent,SSU5184A,1001,V1.0

2.　Get Model Name

Command Format	MN?
Instruction	Returns the model name of the connected device.
Parameter Type	None
Parameter Range	None
Return	model name
Example	MN? Return:SSU5184A

3.　Get Serial Number

Command Format	SHOW:SERial?
Instruction	Returns the serial number of the connected device.
Parameter Type	None
Parameter Range	None
Return	serial number
Example	SHOW:SERial? Return:10001

4. Get Software Version

Command Format	SV?
Instruction	Returns the software version of the connected device.
Parameter Type	None
Parameter Range	None
Return	software version
Example	SV? Return:V1.0.0.0

5. Set Single Switch State(SSU5264A)

Command Format	SET[switch_name]=[state]
Instruction	Sets an individual switch state whilst leaving any other switches unchanged.
Parameter Type	character; Boolean
Parameter Range	A~D; 0~1
Return	None
Example	Set switch A to state 0 (Com port connected to port 1) SETA=0 Set switch C to state 1 (Com port connected to port 2) SETC=1

6. Get Single Switch State(SSU5264A)

Command Format	GET[switch_name]?
Instruction	Returns an individual switch state.
Parameter Type	character
Parameter Range	A~D
Return	0~1
Example	Get switch B state GETB? Return:0

7. Set All Switches State(SSU5264A)

Command Format	SETP=[states]
Instruction	Sets the states of all switches simultaneously.
Parameter Type	Integer (decimal)
Parameter Range	0~15

Return	None
Example	SETP=14

Bit	Bit3	Bit2	Bit1	Bit0(LSB)
Switch	D	C	B	A
Value	1	1	1	0

[states] = 1110(binary) = 14(decimal)

8.　Get All Switch State(SSU5264A)

Command Format	SWPORT?
Instruction	Returns the states of all switches.
Parameter Type	None
Parameter Range	None
Return	The states of all switches (decimal)
Example	SWPORT? Return:14

9.　Set Single Switch State(SSU5266A)

Command Format	SP6T[switch_name]:STATE:[state]
Instruction	Sets an individual switch state whilst leaving any other switches unchanged.
Parameter Type	character; Boolean
Parameter Range	A~B; 0~6
Return	None
Example	Set switch A to state 1 (Com port connected to port 1) SP6TA:STATE:1

10.　Get Single Switch State(SSU5266A)

Command Format	SP6T[switch_name]:STATE?
Instruction	Returns an individual switch state.
Parameter Type	character
Parameter Range	A~B
Return	0~6
Example	Get switch A state SP6TA:STATE? Return:1

8 Product certification

SIGLENT guarantees this product conforms to the national and industrial standards in China as well as the ISO9001: 2008 standard and the ISO14001: 2004 standard. Other international standard conformance certification is in progress.

9 For more product information

You can obtain the instrument information and installation status of all options through Utility menu, for more information of this product, please refer to the following manuals (you can also download them from the SIGLENT web site):

• **SSU5000A Series Mechanical Switch Data Sheet and programming manual:**
  Provides the main characteristics and specifications of this instrument. Provides detailed introductions of the SCPI commands and programming of this instrument.

SIGLENT®

About SIGLENT

SIGLENT is an international high-tech company, concentrating on R&D, sales, production and services of electronic test & measurement instruments.

SIGLENT first began developing digital oscilloscopes independently in 2002. After more than a decade of continuous development, SIGLENT has extended its product line to include digital oscilloscopes, isolated handheld oscilloscopes, function/arbitrary waveform generators, RF/MW signal generators, spectrum analyzers, vector network analyzers, digital multimeters, DC power supplies, electronic loads and other general purpose test instrumentation. Since its first oscilloscope was launched in 2005, SIGLENT has become the fastest growing manufacturer of digital oscilloscopes. We firmly believe that today SIGLENT is the best value in electronic test & measurement.

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