

# SSU5000A Series Mechanical Switch



## Data Sheet EN04A



**SIGLENT TECHNOLOGIES CO., LTD.**

# SSU5000A

## General Description

SSU5000A series mechanical switch can expand the test ports of vector network analyzer, signal generator, spectrum analyzer and other equipment. This series is named SSU5XYZA, where XY represents the frequency range and Z represents the number of the mechanical switches inside. When XY is 18 / 26 / 50, the corresponding frequency range is DC - 18GHz / 26.5GHz / 50GHz respectively. When Z is 1~4, it means that there are 1~4 independent SPDT mechanical switches inside. When Z is 5 or 6, it means that there are 1 or 2 independent SP6T switches inside. The SSU5000A mechanical switch supports USB control and can be widely used in multi-channel and multi-port test environment.

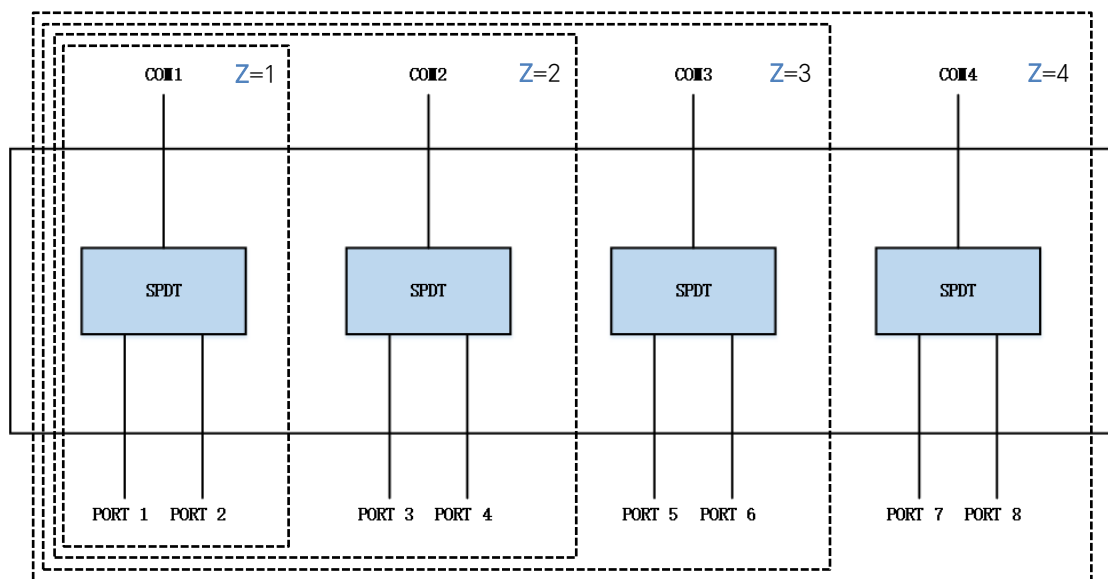
## Features

-  Characteristic impedance: 50  $\Omega$
-  Maximum frequency: 18 GHz / 26.5 GHz / 50 GHz
-  Maximum number of test ports: 12 (2 mechanical switches)
-  RF connector: SMA Female (18 / 26.5 GHz) or 2.4mm Female (50 GHz)
-  Driving voltage: 12V
-  Maximum driving current: 1.25A
-  Control mode: USB

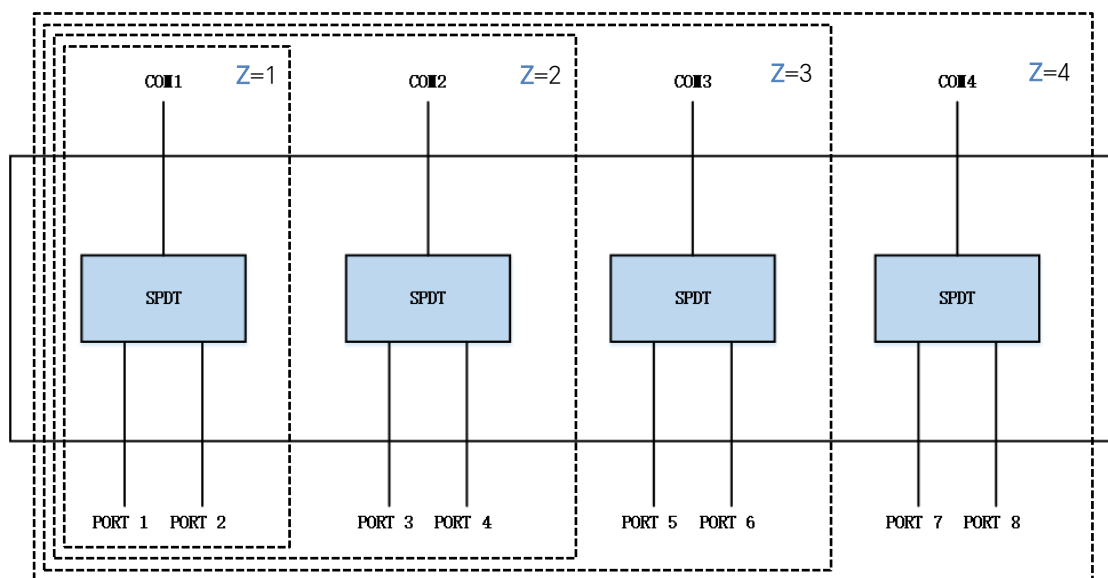
## Block diagrams

According to the maximum working frequency, the SSU5000A mechanical switch can be divided into three series: SSU518ZA, SSU526ZA and SSU550ZA, the corresponding frequency range is DC - 18GHz / 26.5GHz / 50GHz.

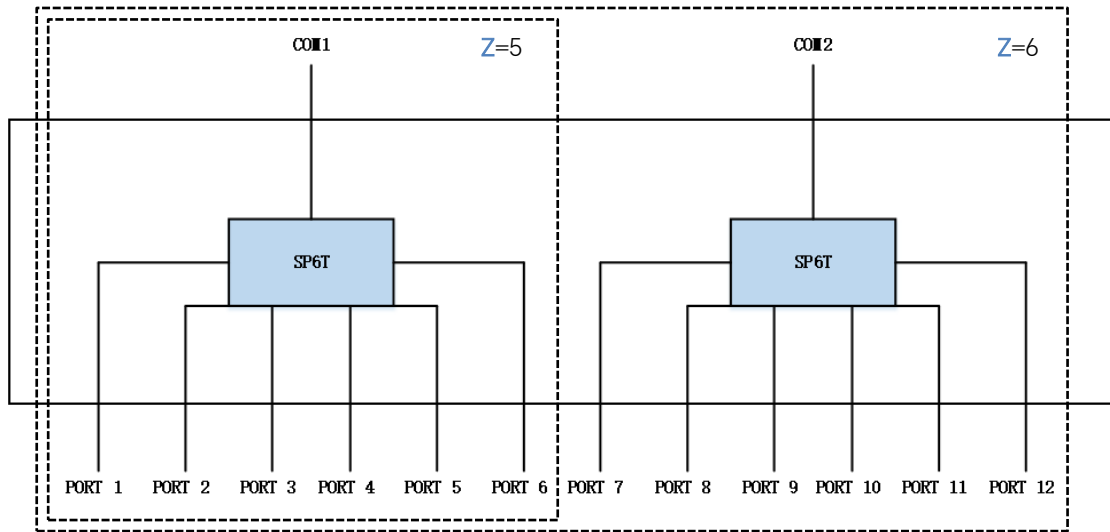
The SSU518ZA series has 1~4 independent single pole double throw mechanical switches ( $Z=1,2,3,4$ ). The SSU526ZA series has 1~4 independent single pole double throw mechanical switches ( $Z=1,2,3,4$ ) or 1~2 independent single pole six throw mechanical switches ( $Z=5,6$ ). The SSU550ZA series has 1~4 independent single pole double throw mechanical switches ( $Z=1,2,3,4$ ). The USB can be used to control the switching status of each mechanical switch inside the SSU5000A.



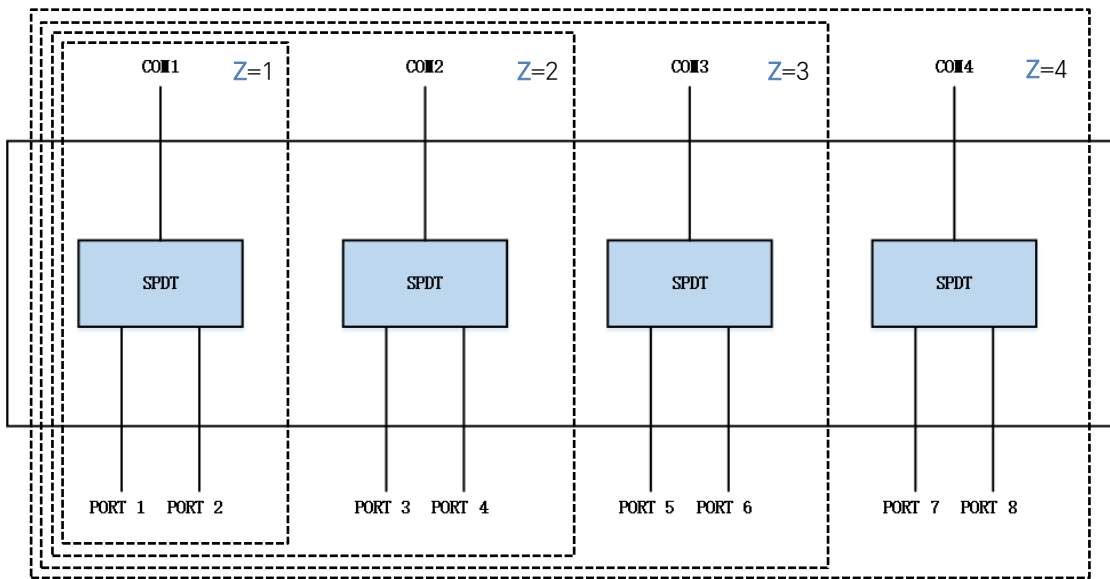
SSU518ZA ( $Z = 1,2,3,4$ )



SSU526ZA ( $Z = 1,2,3,4$ )



SSU526ZA (Z = 5,6)



SSU550ZA (Z = 1,2,3,4)

## Definitions

The data in this manual are technical indicators that include the measurement uncertainty unless otherwise noted.

**Specifications:** All products are guaranteed to meet published specifications at room temperature (approximately 25°C), unless otherwise noted.

**Typical:** Performance deemed typical implies that 80 percent of the measurement results will meet the typical published performance with a 95th percentile confidence level at room temperature (approximately 25°C). Typical performance is not warranted and does not include measurement uncertainty.

**Nominal:** This value indicates the expected mean or average performance, or an attribute whose performance is by design, such as the 50 Ohm connector.

## Specifications

| Model: SSU5181A SSU5182A SSU5183A SSU5184A |        |        |           |           |           |
|--------------------------------------------|--------|--------|-----------|-----------|-----------|
| Frequency (GHz)                            | DC - 3 | 3 - 8  | 8 - 12.4  | 12.4 - 18 |           |
| VSWR                                       | <1.1   | <1.2   | <1.2      | <1.4      |           |
| Insertion loss (dB)                        | <0.15  | <0.2   | <0.25     | <0.35     |           |
| Isolation (dB)                             | <-80   | <-75   | <-65      | <-60      |           |
| Model: SSU5261A SSU5262A SSU5263A SSU5264A |        |        |           |           |           |
| Frequency (GHz)                            | DC - 3 | 3 - 8  | 8 - 12.4  | 12.4 - 18 | 18 - 26.5 |
| VSWR                                       | <1.1   | <1.2   | <1.2      | <1.4      | <1.5      |
| Insertion loss (dB)                        | <0.15  | <0.2   | <0.25     | <0.35     | <0.5      |
| Isolation (dB)                             | <-80   | <-75   | <-65      | <-60      | <-55      |
| Model: SSU5265A SSU5266A                   |        |        |           |           |           |
| Frequency (GHz)                            | DC - 3 | 3 - 8  | 8 - 12.4  | 12.4 - 18 | 18 - 26.5 |
| VSWR                                       | <1.2   | <1.3   | <1.4      | <1.5      | <1.7      |
| Insertion loss (dB)                        | <0.2   | <0.3   | <0.4      | <0.5      | <0.7      |
| Isolation (dB)                             | <-80   | <-70   | <-60      | <-60      | <-50      |
| Model: SSU5501A SSU5502A SSU5503A SSU5504A |        |        |           |           |           |
| Frequency (GHz)                            | DC - 6 | 6 - 18 | 18 - 26.5 | 26.5 - 40 | 40 - 50   |
| VSWR                                       | <1.3   | <1.5   | <1.7      | <1.9      | <1.9      |
| Insertion loss (dB)                        | <0.3   | <0.5   | <0.7      | <0.8      | <1.1      |
| Isolation (dB)                             | <-70   | <-60   | <-55      | <-50      | <-50      |

## 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.

The user can switch the state of the switch through the control software (EasySSU).

## Switching times

| Model                                  | Switching time |
|----------------------------------------|----------------|
| SSU5181A, SSU5182A, SSU5183A, SSU5184A | <10ms          |
| SSU5261A, SSU5262A, SSU5263A, SSU5264A | <10ms          |
| SSU5501A, SSU5502A, SSU5503A, SSU5504A | <10ms          |
| SSU5265A, SSU5266A                     | <15ms          |

## General data

| Description                                       | Characteristics                            |
|---------------------------------------------------|--------------------------------------------|
| Temperature                                       | -25 to 65°C                                |
| Size                                              | Length × Width × High=153mm×62.4mm×137.5mm |
| Weight                                            | 890g (SSU5264A)                            |
| <b>Switch life</b>                                |                                            |
| SSU5181A, SSU5182A, SSU5183A, SSU5184A            | 10 million cycles                          |
| SSU5261A, SSU5262A, SSU5263A, SSU5264A            | 10 million cycles                          |
| SSU5501A, SSU5502A, SSU5503A, SSU5504A            | 2 million cycles                           |
| SSU5265A, SSU5266A                                | 5 million cycles                           |
| <b>Environmental and physical characteristics</b> |                                            |
| SSU5181A, SSU5182A, SSU5183A, SSU5184A            |                                            |
| Vibration                                         | 10g                                        |
| Shock                                             | 30g                                        |
| SSU5261A, SSU5262A, SSU5263A, SSU5264A            |                                            |
| Vibration                                         | 10g                                        |
| Shock                                             | 500g                                       |
| SSU5501A, SSU5502A, SSU5503A, SSU5504A            |                                            |
| Vibration                                         | 10g                                        |
| Shock                                             | 500g                                       |
| SSU5265A, SSU5266A                                |                                            |
| Vibration                                         | 10g                                        |
| Shock                                             | 500g                                       |

## Ordering Information

| Model    | Product Description                                  |
|----------|------------------------------------------------------|
| SSU5181A | DC-18GHz, including one SPDT mechanical switch       |
| SSU5182A | DC-18GHz, including two SPDT mechanical switches     |
| SSU5183A | DC-18GHz, including three SPDT mechanical switches   |
| SSU5184A | DC-18GHz, including four SPDT mechanical switches    |
| SSU5261A | DC-26.5GHz, including one SPDT mechanical switch     |
| SSU5262A | DC-26.5GHz, including two SPDT mechanical switches   |
| SSU5263A | DC-26.5GHz, including three SPDT mechanical switches |
| SSU5264A | DC-26.5GHz, including four SPDT mechanical switches  |
| SSU5265A | DC-26.5GHz, including one SP6T mechanical switch     |
| SSU5266A | DC-26.5GHz, including two SP6T mechanical switches   |
| SSU5501A | DC-50GHz, including one SPDT mechanical switch       |
| SSU5502A | DC-50GHz, including two SPDT mechanical switches     |
| SSU5503A | DC-50GHz, including three SPDT mechanical switches   |
| SSU5504A | DC-50GHz, including four SPDT mechanical switches    |

| Standard Configurations      | Quantity |
|------------------------------|----------|
| USB-cable                    | 1        |
| Quick-start                  | 1        |
| AC-DC adapter                | 1        |
| Power cord                   | 1        |
| Certificate of qualification | 1        |



## 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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