

# VNA Frequency Extender



Data Sheet  
EN01A



**SIGLENT TECHNOLOGIES CO., LTD.**

## Product Overview

The SVE series frequency extender from **SIGLENT** is used for frequency expansion of vector network analyzer, which can expand the upper limit of VNA measurement frequency to the maximum 110GHz. This module is applicable to **SIGLENT** SNA6000A series vector network analyzer with front panel jumpers and all modern vector network analyzers with millimeter wave measurement function on the market. It provides ideal solutions for MMW antenna measurements, material characterization and other application scenarios.



SIGLENT VNA mmWave test system with frequency extender

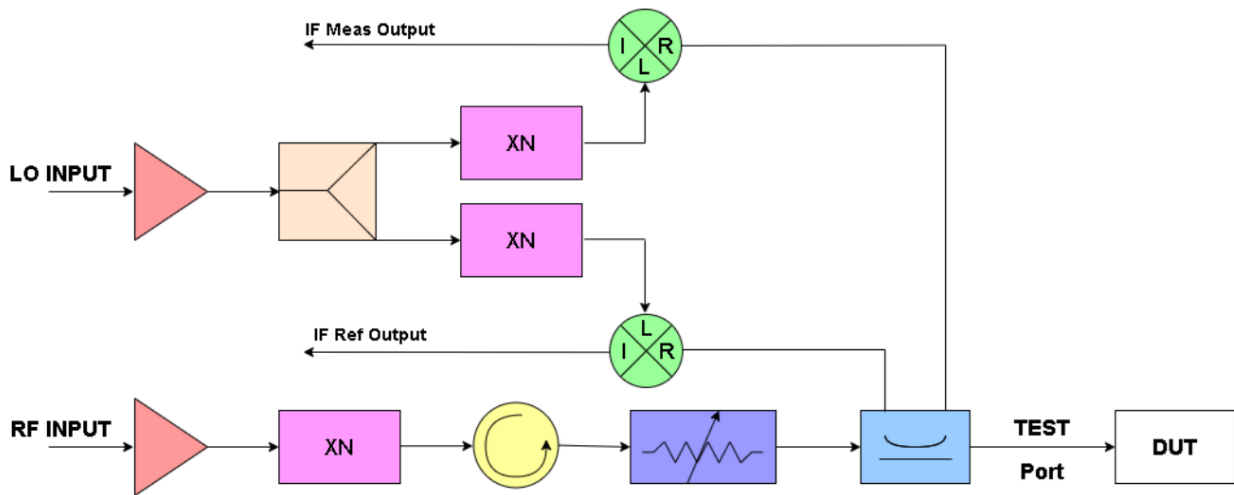
## Models and Key Specifications

Model	Frequency Range	Port Output Power <sup>1</sup>	Dynamic Range <sup>2</sup>	Variable Attenuators
SVE5075-16	50-75 GHz	16 dBm Typ	110dB Typ	
SVE5075-16-A	50-75 GHz	16 dBm Typ	110dB Typ	√
SVE75110-10	75-110GHz	10 dBm Typ	105dB Typ	
SVE75110-10-A	75-110GHz	10 dBm Typ	105dB Typ	√

<sup>1</sup> No attenuation

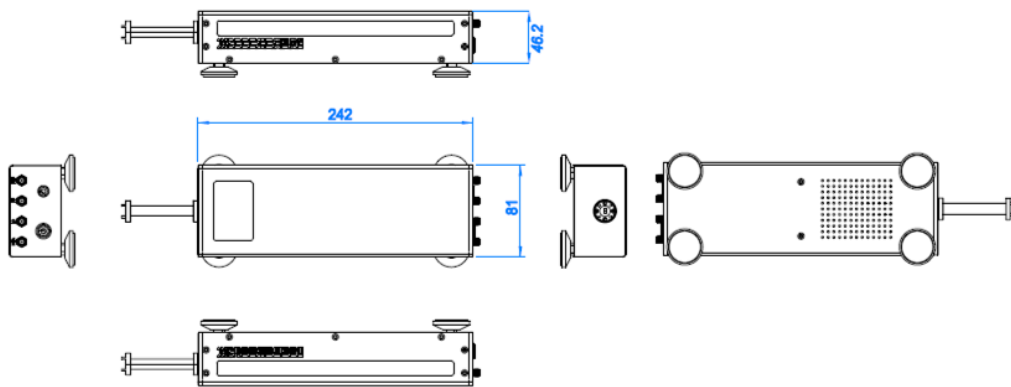
<sup>2</sup> @ 10Hz BW

## Block Diagram

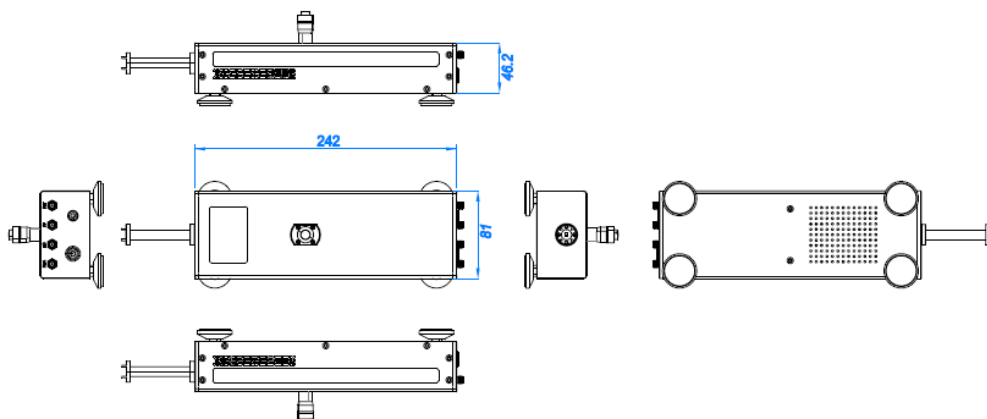


The block diagram of SVE series frequency extender

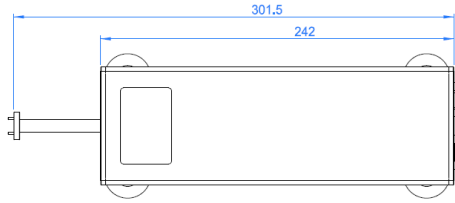
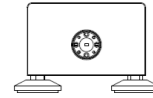
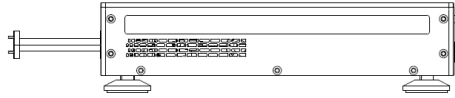
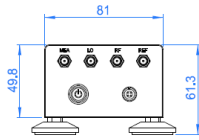
## Outline Drawing



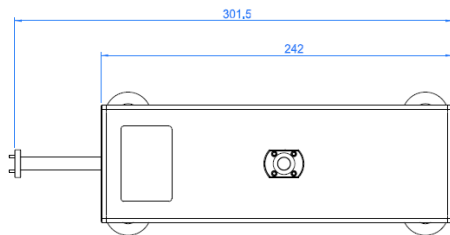
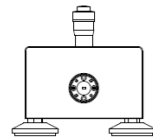
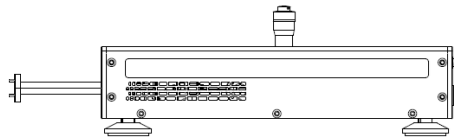
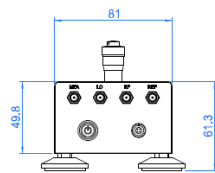
SVE5075-16 (Unit: mm)



SVE5075-16-A (Unit: mm)



SVE75110-10 (Unit: mm)



SVE75110-10-A (Unit: mm)

## Electrical Characteristics

### ● SVE5075 Series

Parameter	Min	Typ	Max	Units
Frequency range	50		75	GHz
Test Port Output Power		16		dBm
Output Power Attenuation (SVE5075-16-A Only)	0		30	dB
Dynamic Range @ 10 Hz BW	100	110		dB
Directivity		30		dB
RF Input Frequency	12.5		18.75	GHz
RF Input Power	3	5	7	dBm
RF Multiplication Factor		4		
LO Input Frequency	12.5		18.75	GHz
LO Input Power	3	5	7	dBm
LO Multiplication Factor		4		
IF Frequency Range	1		1000	MHz
Stability @ 300 Hz BW		±0.1		dB
Phase Stability @ 300 Hz BW		±2.5		°

### ● SVE75110 Series

参数	Min	Typ	Max	Units
Frequency range	75		110	GHz
Test Port Output Power		10		dBm
Output Power Attenuation (SVE75110-10-A Only)	0		30	dB
Dynamic Range @ 10 Hz BW	100	105		dB
RF Input Frequency	12.5		18.33	GHz
RF Input Power	3	5	7	dBm
RF Multiplication Factor		6		
LO Input Frequency	12.5		18.33	GHz
LO Input Power	3	5	7	dBm
LO Multiplication Factor		6		
IF Frequency Range	1		1000	MHz
Stability @ 300 Hz BW		±0.1		dB
Phase Stability @ 300 Hz BW		±2.5		°

## Mechanical Specifications

Parameter	Value
RF/LO Input Connector	SMA Female
MEA/REF IF Output Connector	SMA Female
Test Port Connector	WR-15/UG-385/U (SVE5075 series) WR-10/UG-387/U (SVE75110 series)
Power Supply Pin	FGG 0B 4 Core
Size	242*81*46.2mm (SVE5075 series) 242*81*49.8mm (SVE75110 series)

## Absolute Maximum Ratings

Description	Parameter	Units
Test Port Input Damage Level	+20	dBm
RF/LO Port Damage Level	+10	dBm
Supply Bias Voltage	+240 V AC	
ESD sensitivity (HBm)	Class 0, passed 150V	

## Compatible Instruments

VNA Model	SVE5075 Series	SVE75110 Series	Maximum Extended Ports (Internal Source LO)	Maximum Extended Ports (External Source LO)	Supported Version
SNA6152A	√	√	/	2	V1.0.0.2.15 and later
SNA6154A	√	√	2	4	
SNA6142A	√	√	/	2	
SNA6144A	√	√	2	4	
SNA6132A	√	√	/	2	
SNA6134A	√	√	2	4	
SNA6122A	√		/	2	
SNA6124A	√		2	4	
SIGLENT other VNAs	Unsupported, no front panel jumper				
VNAs of other brands	Supported, front panel jumper and millimeter wave measurement function are required				

## General Information

Description	Parameter	Units
Operating Temperature	0 to +45	°C
Storage Temperature	-55 to +125	°C
Material	Al	
Finish	Gray spray paint	

## Ordering Information

Product Model	Description
SVE5075-16	VNA Frequency Extender, 50-75 GHz
SVE5075-16-A	VNA Frequency Extender, with Micrometer driven variable attenuators, 50-75 GHz
SVE75110-10	VNA Frequency Extender, 75-110 GHz
SVE75110-10-A	VNA Frequency Extender, with Micrometer driven variable attenuators, 75-110 GHz

Standard Accessories	Quantity
Power Adapter	1
Power Cable	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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