

D-Band VNA Frequency Extender

110-170GHz/WR-6.5

Model: TLVE-110170-N5

TLVE-110170-N5 frequency extenders are a dedicated Test & Measurement solution for extending the range of your Vector Network Analyzer (VNA) to 110GHz to 170GHz.

Features:

- Frequency range: 110-170GHz
- Port Output Power (No Attenuation): 0dBm Typ
- Dynamic Range @10Hz BW: 110dB Typ
- Unconditional stability

Applications:

- VNA Frequency Extension
- Antenna measurements
- Material characterisation

Electrical Characteristics:

Parameter	Min	Typ	Max	Units
Frequency range	110		170	GHz
Test Port Output Power		0		dBm
Test Port Input Power (Damage)			20	dBm
Output Power Attenuation (Option:Variable attenuators)	0		30	dB
Dynamic Range @ 10Hz BW		110		dB
RF Input Frequency	9.16		14.17	GHz
RF Input Power	3	5	7	dBm
RF Multiplication Factor		12		
LO Input Frequency	9.16		14.17	GHz
LO Input Power	3	5	7	dBm
LO Multiplication Factor		12		
IF Frequency Range	1		1000	MHz
Effective Directionality@10Hz BW	45	50		dB
Payload Matching@10Hz BW	50	55		dB
ReflectionTracking@10Hz BW		±0.05	±0.1	dB
Transmission Tracking@10Hz BW		±0.05	±0.1	dB
Amplitude stability@300 Hz BW		±0.1		dB
Phase Stability@300Hz BW		±4		°

Mechanical Specifications:

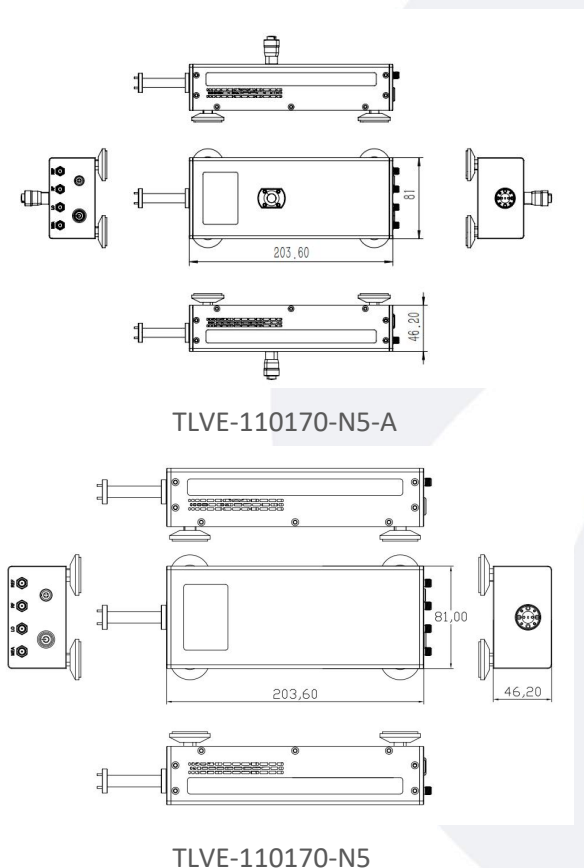
Parameter	Value
RF/LO Input Connector	SMA Female
MEA/REF IF Output Connector	SMA Female
Test Port Connector	WR-6.5/UG-387/U
Power Supply Pin	FGG 0B 4 Core
Size	203.6*81*46.2mm

Absolute Maximum Ratings :

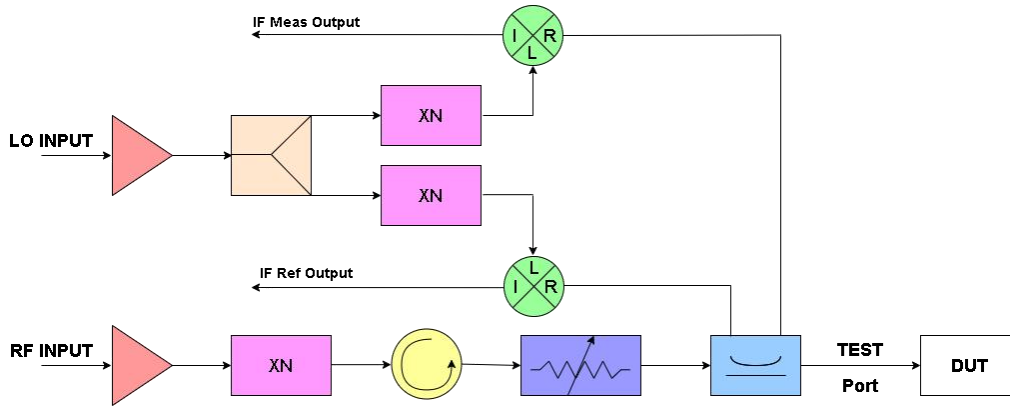
Description	Parameter	Units
Test Port Input Power	+20	dBm
RF/LO Port Damage Level	+10	dBm
Supply Bias Voltage	+240 V AC	
ESD sensitivity (HBm)	Class 0, passed 150V	

Outline Drawing:

Unit:mm



Block Diagrams:



Environmental And Physical Characteristics:

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

Ordering Information:

Part Number	Description	Revision
TLVE-110170-N5	D-band VNA Frequency Extender, 110-170GHz, Output Power: 0dBm typ; Dynamic Range: 110dB@10Hz BW typ; Magnitude Stability @300Hz BW: ± 0.1 dB, Phase Stability @300Hz BW: $\pm 4^\circ$	Rev.1.1
TLVE-110170-N5-A	D-band VNA Frequency Extender, 110-170GHz, Output Power: 0dBm typ; Dynamic Range: 110dB@10Hz BW typ; Magnitude Stability @300Hz BW: ± 0.1 dB, Phase Stability @300Hz BW: $\pm 4^\circ$, with Micrometer driven variable attenuators	Rev.1.1

Components Included:

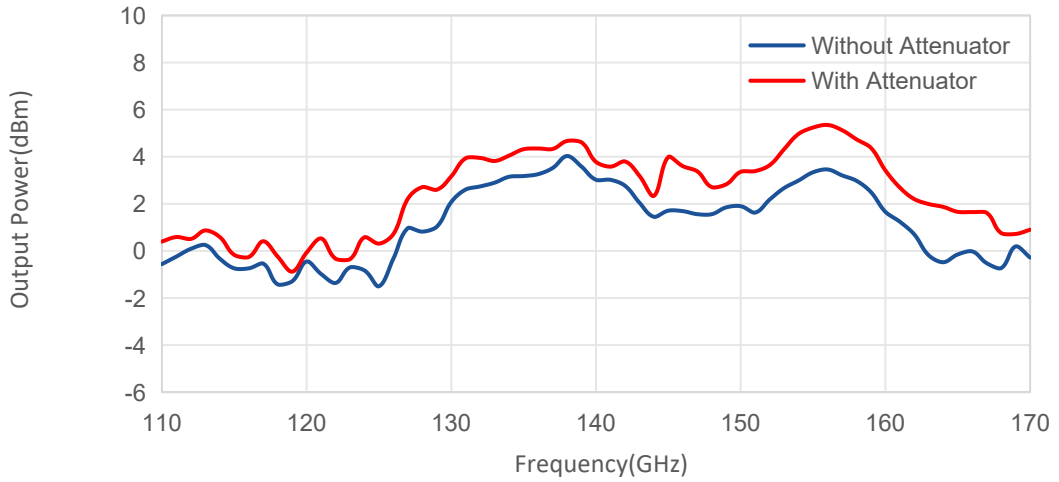
Part Number	Description	Quantity
S1-SMAMSMAM-1.2m	COAXIAL CABLE ASSEMBLY	4 PCS
TLACTDC-22012	AC-to-DC Power Adapter	1 PCS

Notes:

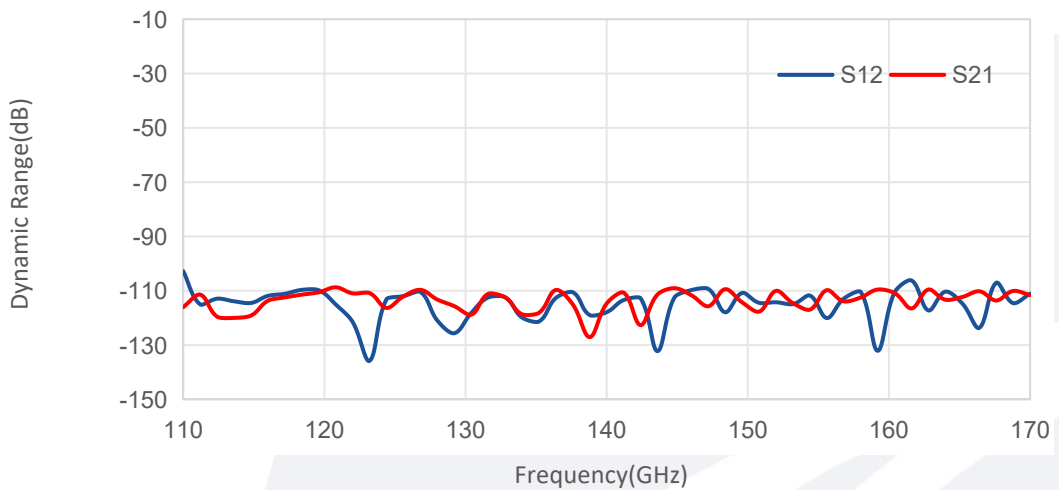
1. Dimensions and specifications may be changed without prior notice.
2. Standard Warranty: three years.

Typical Performance Data:

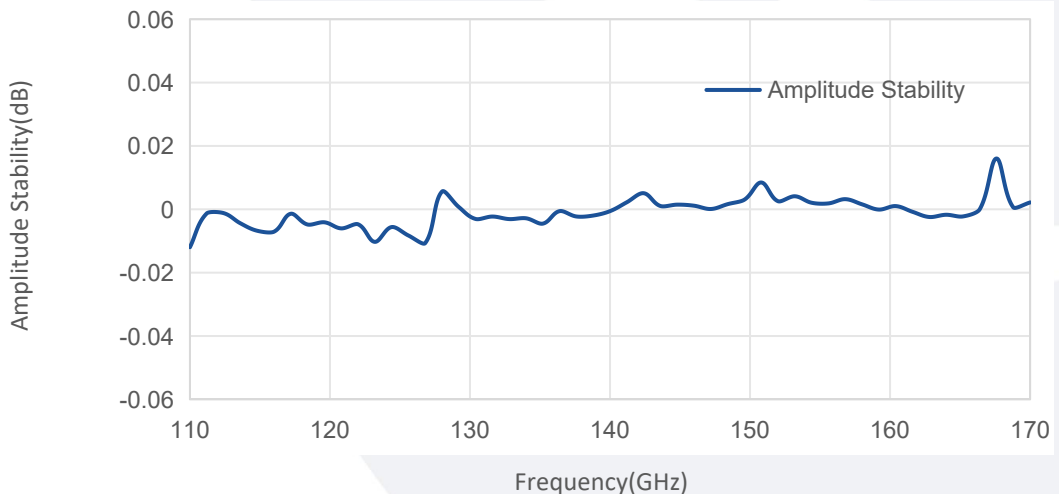
Output Power vs Frequency



Dynamic Range vs Frequency



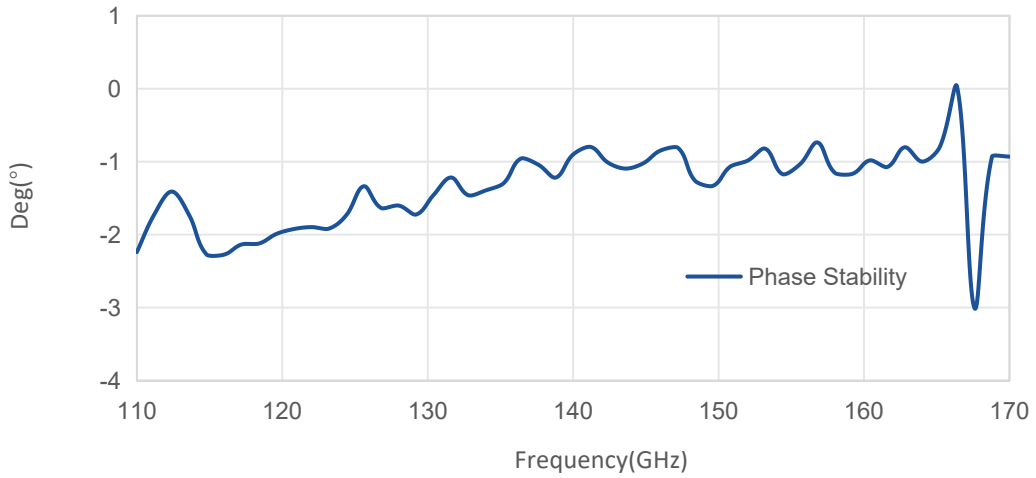
Amplitude Stability@1h vs Frequency



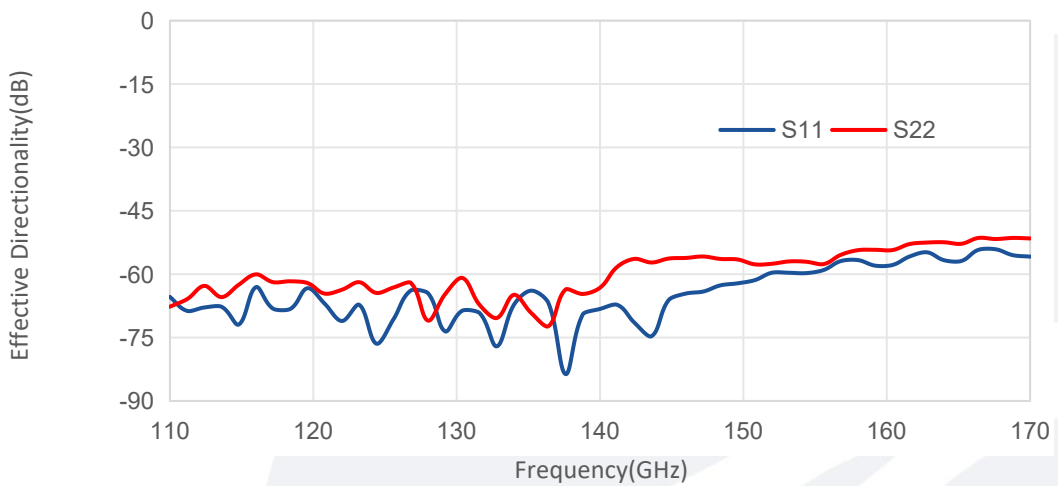
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

Typical Performance Data:

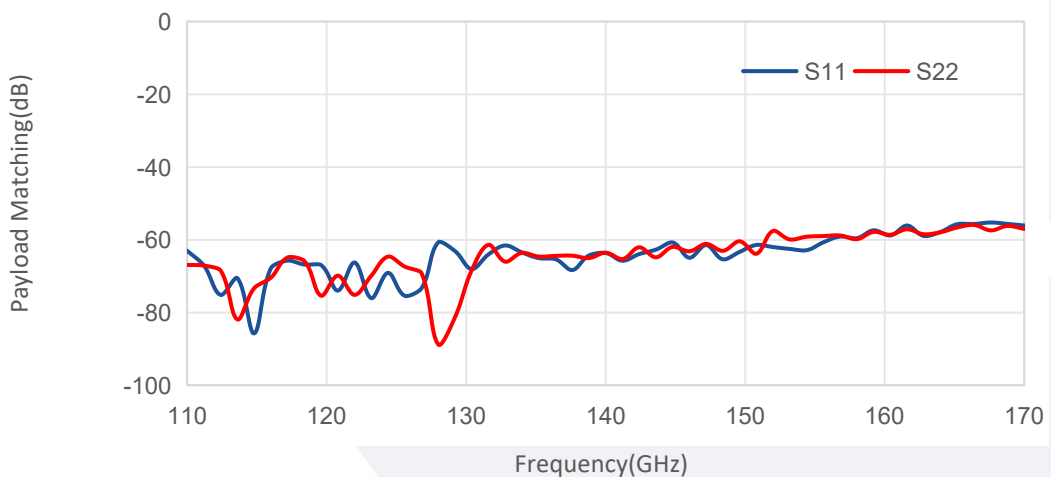
Phase Stability@1h vs Frequency



Effective Directionality vs Frequency



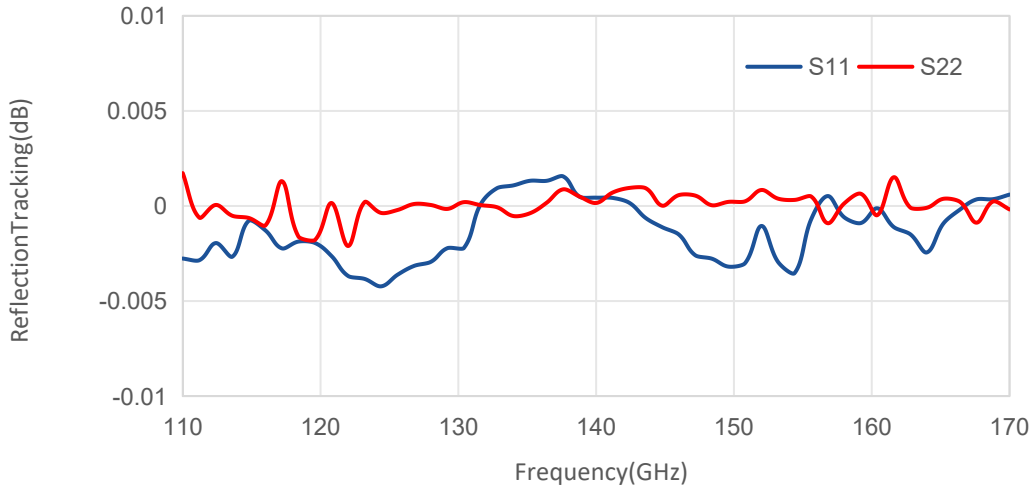
Payload Matching vs Frequency



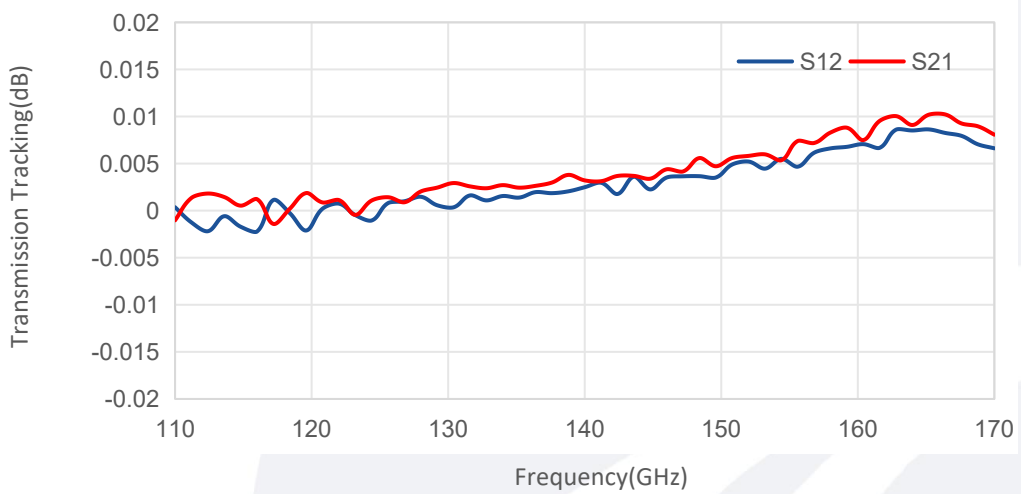
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

Typical Performance Data:

Reflection Tracking vs Frequency



Transmission Tracking vs Frequency



Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.