



Certificate of Calibration

ISO/IEC 17025:2017 and ANSI/NCSL Z540.1-1994

Certificate Number 1-10704424027-1



AC-1498

Model Number	11667B	Customer	Keysight Technologies Inc
Manufacturer	Keysight Technologies Inc		10090 Foothills Blvd
Description	Power splitter, DC to 26.5 GHz, 3.5 mm female connectors		ROSEVILLE CA 95747
Serial Number	13230		United States
Customer Asset No.	11667B13230	Location of Calibration	Keysight Technologies Inc
Date of Calibration	7 Jan 2019		10090 Foothills Blvd.
Procedure	STE-50114535-B.02.06		Roseville CA 95747-7102
Temperature	(23 ± 5) °C		UNITED STATES
Humidity	(50 ± 30) %RH		

This certifies that the equipment has been calibrated using applicable Keysight Technologies procedures and in compliance with ISO/IEC 17025:2017 and ANSI/NCSL Z540.1-1994 (R2002). The quality management system is registered to ISO 9001:2015.

As Received Conditions

The measured values of the equipment were observed in specification at the points tested. Additionally, the expanded measurement uncertainty intervals about the measured values were in specification.

Action Taken

- No corrective actions were necessary.

As Completed Conditions

The measured values of the equipment were observed in specification at the points tested. Additionally, the expanded measurement uncertainty intervals about the measured values were in specification.

Remarks or Special Requirements

This calibration certificate may refer to instruments manufactured by HP, Agilent and Keysight as being manufactured by Keysight Technologies, Inc.

The test limits stated in the report correspond to the published specifications of the equipment, at the points tested.

Based on the customer's request, the next calibration is due on 7 Jan 2021.

Keysight Technologies Inc
10090 Foothills Blvd.
Roseville CA 95747-7102
UNITED STATES

Wes Fischbach Roseville Serv. Cntr. Mgr.

Traceability Information

Technician ID Number 00807001

Measurements are traceable to the International System of Units (SI) via national metrology institutes (www.keysight.com/find/NMI) that are signatories to the CIPM Mutual Recognition Arrangement.

This certificate shall not be reproduced, except in full, without prior written approval of the laboratory.

Calibration Equipment Used

Model Number	Model Description	Equipment ID	Cal Due Date
85052B	Standard mechanical calibration kit, DC to 26.5 GHz, 3.5 mm	85052B01873	5 Feb 2019
N5230C	PNA-L network analyzer	N5230C01146	24 Apr 2019

Traceability Table

	Model	Model Description	Equipment ID	Certificate Number	Trace Value
W,R	85052B	Standard mechanical calibration kit, DC to 26.5 GHz, 3.5 mm	85052B01873	1-9661335340-1-ANAB:AC-1498	Reflection Coefficient Transmission Coefficient
W,R	N5230C	PNA-L network analyzer	N5230C01146	1-9920055444-1-ANAB:AC-1498	Reflection Coefficient Transmission Coefficient

Legend

W - Working Standard The calibration equipment used for the calibration of the Model indicated on the first page of the Certificate of calibration.

R - Reference Standard The Reference Standard (Accredited or NMI-calibrated ETE) used to provide traceability to the SI-Units for the calibration parameters listed.

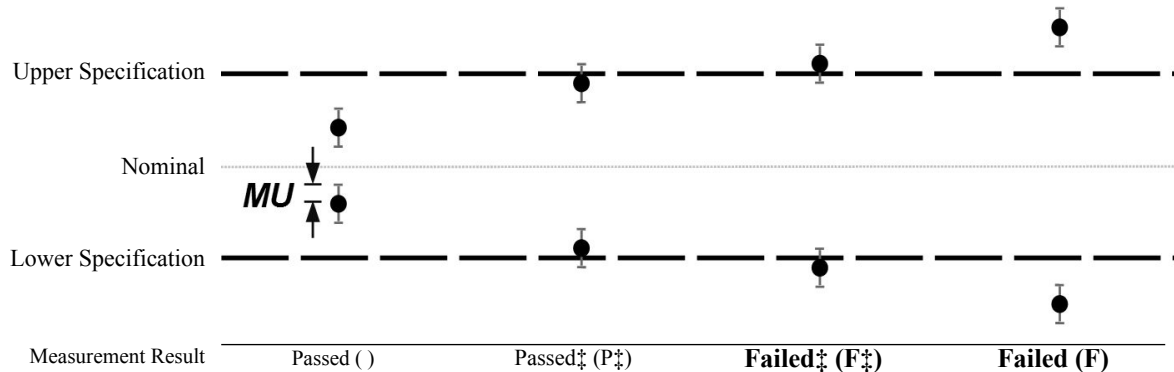
Compliance with Specification

The uncertainty of measurement has been taken into account when determining compliance with specification, as per ILAC-G8:03/2009. If the expanded measurement uncertainty intervals centered about one or more measured values were both in as well as out of specification (upper or lower), it is not possible to state compliance or non-compliance based on a 95% coverage probability for the expanded measurement uncertainty.

An overall statement of compliance for all tests performed as received, and as completed (if any adjustments / repairs were performed) is included at the beginning of this report. Statements of compliance apply only to warranted specifications. When functional verification tests are performed, results are reported in the “Functional Test” section, and do not affect these statements of compliance. The status summaries relate to the tested item only. A final decision about whether the item's performance actually satisfies requirements of the user can only be made by the user.

Measurement results are reported as:

- Passed () - The measured values of the equipment were observed in specification at the points tested. Additionally, the expanded measurement uncertainty intervals about the measured values were in specification.
- Passed‡ (P‡) - The measured values of the equipment were observed in specification at the points tested. However, a portion of the expanded measurement uncertainty intervals about one or more measured values exceeded specification. Consequently, compliance with specification cannot be declared based on the stated coverage probability.
- Failed‡ (F‡) - One or more measured values of the equipment were observed out of specification at the points tested. However, a portion of the expanded measurement uncertainty intervals about one or more measured values were in specification. Consequently, non-compliance with specification cannot be declared based on the stated coverage probability.
- Failed (F) - One or more measured values of the equipment were observed out of specification at the points tested. Additionally, the expanded measurement uncertainty intervals about one or more measured values were entirely outside the specification.



() This result is indicated on the measurement report as a blank space in the column labeled “Status” or “Sts”.
 MU = 95% expanded measurement uncertainty.

Uncertainty of Measurement

The uncertainty evaluation has been performed in accordance with ISO/IEC Guide 98-3:2008 (GUM). The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k such that the coverage probability corresponds to approximately 95%. This probability corresponds to a coverage factor of k=2 for a normal distribution.

Calibration Test Results Summary

<u>Test Name</u>	<u>As Received Status</u>
INPUT REFL COEF	Passed
PORT2 INSERTION LOSS	Done
PORT3 INSERTION LOSS	Done
PORT2 to PORT3 TRACKING	Passed
EQUIVALENT SOURCE MATCH	Passed

INPUT REFL COEF

Passed

The PHASE(deg) column is the measured PHASE.

The MAG column is the measured MAGNITUDE.

The MAXIMUM column is the spec for MAGNITUDE.

The UNCERT column is the uncertainty for MAGNITUDE.

TEST COND	PHASE	MAG	MAXIMUM	UNCERT.	Status
50 MHz	28.3°	0.004	0.099	0.0048	
100 MHz	27.5°	0.006	0.099	0.0043	
500 MHz	10.3°	0.011	0.099	0.0047	
1000 MHz	-13.7°	0.013	0.099	0.0051	
1500 MHz	-36.3°	0.015	0.099	0.0045	
2000 MHz	-61.1°	0.017	0.099	0.0046	
2500 MHz	-83.9°	0.018	0.099	0.0049	
3000 MHz	-105.9°	0.019	0.099	0.0050	
3500 MHz	-129.4°	0.020	0.099	0.0070	
4000 MHz	-151.6°	0.021	0.099	0.0068	
4500 MHz	-174°	0.024	0.099	0.0068	
5000 MHz	162.2°	0.028	0.099	0.0068	
5500 MHz	136.8°	0.031	0.099	0.0068	
6000 MHz	108.7°	0.032	0.099	0.0070	
6500 MHz	81.5°	0.034	0.099	0.0072	
7000 MHz	54.8°	0.033	0.099	0.0071	
7500 MHz	30.9°	0.030	0.099	0.0070	
8000 MHz	7°	0.027	0.099	0.0070	
8500 MHz	-12.9°	0.024	0.099	0.0079	
9000 MHz	-34.9°	0.023	0.099	0.0080	
9500 MHz	-63.5°	0.024	0.099	0.0080	
10000 MHz	-95.1°	0.026	0.099	0.0082	
10500 MHz	-129.6°	0.027	0.099	0.0083	
11000 MHz	-164.4°	0.029	0.099	0.0082	
11500 MHz	163.4°	0.030	0.099	0.0082	
12000 MHz	135.2°	0.030	0.099	0.0083	
12500 MHz	113.7°	0.029	0.099	0.0084	
13000 MHz	94.9°	0.029	0.099	0.0084	
13500 MHz	77.5°	0.031	0.099	0.0084	
14000 MHz	54.9°	0.032	0.099	0.0085	
14500 MHz	29.8°	0.030	0.099	0.0084	
15000 MHz	-0.2°	0.028	0.099	0.0084	
15500 MHz	-30.6°	0.024	0.099	0.0085	
16000 MHz	-71.7°	0.019	0.099	0.0086	
16500 MHz	-117.8°	0.017	0.099	0.0086	
17000 MHz	-158.1°	0.019	0.099	0.0086	
17500 MHz	162.4°	0.023	0.099	0.0086	
18000 MHz	128°	0.028	0.099	0.0087	
18500 MHz	102.2°	0.032	0.127	0.0088	
19000 MHz	75.9°	0.036	0.127	0.0088	
19500 MHz	54°	0.037	0.127	0.0088	
20000 MHz	25.8°	0.037	0.127	0.0089	
20500 MHz	-0.7°	0.035	0.127	0.010	
21000 MHz	-28.6°	0.037	0.127	0.010	

Model 11667B Serial 13230
Options Tested

Test Date 7 Jan 2019
Condition As Received

INPUT REFL COEF (cont.)

TEST COND	PHASE	MAG	MAXIMUM	UNCERT.	Status
21500 MHz	-61°	0.038	0.127	0.010	
22000 MHz	-97.5°	0.040	0.127	0.010	
22500 MHz	-139.1°	0.045	0.127	0.010	
23000 MHz	-176.9°	0.049	0.127	0.010	
23500 MHz	150.6°	0.052	0.127	0.010	
24000 MHz	122.8°	0.052	0.127	0.010	
24500 MHz	98.7°	0.051	0.127	0.010	
25000 MHz	78.5°	0.051	0.127	0.010	
25500 MHz	60.7°	0.054	0.127	0.010	
26000 MHz	39.5°	0.058	0.127	0.010	
26500 MHz	14.1°	0.060	0.127	0.010	

The PHASE uncertainty is $\text{Arcsin}(\text{UNCERT}/\text{MAG})$ degree, except where MAG is less than UNCERT, in which case PHASE uncertainty is +/- 180 degree.

PORT2 INSERTION LOSS

Done

TEST COND	PHASE	MAG	UNCERT.
NO SPECS FOR THIS PARAMETER			
50 MHz	-3.2°	6.05 dB	0.047 dB
100 MHz	-6.3°	6.05 dB	0.047 dB
500 MHz	-30.9°	6.07 dB	0.048 dB
1000 MHz	-61.6°	6.09 dB	0.049 dB
1500 MHz	-92.3°	6.10 dB	0.049 dB
2000 MHz	-123°	6.11 dB	0.049 dB
2500 MHz	-153.7°	6.12 dB	0.075 dB
3000 MHz	175.6°	6.14 dB	0.076 dB
3500 MHz	144.9°	6.16 dB	0.091 dB
4000 MHz	114.3°	6.18 dB	0.093 dB
4500 MHz	83.7°	6.20 dB	0.095 dB
5000 MHz	53.1°	6.21 dB	0.096 dB
5500 MHz	22.5°	6.22 dB	0.097 dB
6000 MHz	-8°	6.22 dB	0.099 dB
6500 MHz	-38.7°	6.22 dB	0.10 dB
7000 MHz	-69.4°	6.22 dB	0.10 dB
7500 MHz	-100.1°	6.22 dB	0.10 dB
8000 MHz	-130.9°	6.22 dB	0.10 dB
8500 MHz	-161.7°	6.24 dB	0.11 dB
9000 MHz	167.6°	6.28 dB	0.11 dB
9500 MHz	136.9°	6.31 dB	0.11 dB
10000 MHz	106.3°	6.34 dB	0.12 dB
10500 MHz	75.7°	6.36 dB	0.12 dB
11000 MHz	45.2°	6.36 dB	0.12 dB
11500 MHz	14.4°	6.36 dB	0.12 dB
12000 MHz	-16.4°	6.36 dB	0.12 dB
12500 MHz	-47.3°	6.37 dB	0.12 dB
13000 MHz	-78.2°	6.39 dB	0.12 dB

PORT2 INSERTION LOSS (cont.)

TEST COND	PHASE	MAG	UNCERT.
13500 MHz	-109.1°	6.43 dB	0.12 dB
14000 MHz	-140°	6.47 dB	0.12 dB
14500 MHz	-170.7°	6.51 dB	0.13 dB
15000 MHz	158.6°	6.54 dB	0.13 dB
15500 MHz	127.9°	6.56 dB	0.13 dB
16000 MHz	97.1°	6.57 dB	0.13 dB
16500 MHz	66.2°	6.58 dB	0.13 dB
17000 MHz	35.3°	6.60 dB	0.13 dB
17500 MHz	4.4°	6.62 dB	0.13 dB
18000 MHz	-26.6°	6.65 dB	0.13 dB
18500 MHz	-57.4°	6.67 dB	0.13 dB
19000 MHz	-88.4°	6.69 dB	0.14 dB
19500 MHz	-119.4°	6.71 dB	0.14 dB
20000 MHz	-150.5°	6.72 dB	0.14 dB
20500 MHz	178.4°	6.75 dB	0.15 dB
21000 MHz	147.4°	6.79 dB	0.15 dB
21500 MHz	116.4°	6.84 dB	0.15 dB
22000 MHz	85.5°	6.88 dB	0.15 dB
22500 MHz	54.6°	6.89 dB	0.15 dB
23000 MHz	23.7°	6.89 dB	0.16 dB
23500 MHz	-7.5°	6.85 dB	0.16 dB
24000 MHz	-38.9°	6.82 dB	0.16 dB
24500 MHz	-70.5°	6.81 dB	0.16 dB
25000 MHz	-102.1°	6.83 dB	0.16 dB
25500 MHz	-133.8°	6.88 dB	0.16 dB
26000 MHz	-165.4°	6.94 dB	0.16 dB
26500 MHz	163.2°	7.00 dB	0.16 dB

PORT3 INSERTION LOSS

Done

TEST COND	PHASE	MAG	UNCERT.
NO SPECS FOR THIS PARAMETER			
50 MHz	-3.2°	6.06 dB	0.049 dB
100 MHz	-6.3°	6.06 dB	0.049 dB
500 MHz	-30.9°	6.09 dB	0.050 dB
1000 MHz	-61.6°	6.10 dB	0.050 dB
1500 MHz	-92.3°	6.12 dB	0.051 dB
2000 MHz	-123°	6.12 dB	0.053 dB
2500 MHz	-153.7°	6.14 dB	0.077 dB
3000 MHz	175.6°	6.16 dB	0.077 dB
3500 MHz	144.9°	6.17 dB	0.093 dB
4000 MHz	114.3°	6.19 dB	0.094 dB
4500 MHz	83.7°	6.22 dB	0.096 dB
5000 MHz	53.1°	6.23 dB	0.097 dB
5500 MHz	22.5°	6.24 dB	0.098 dB
6000 MHz	-8°	6.24 dB	0.10 dB
6500 MHz	-38.6°	6.24 dB	0.10 dB
7000 MHz	-69.3°	6.23 dB	0.10 dB
7500 MHz	-100°	6.23 dB	0.10 dB

PORT3 INSERTION LOSS (cont.)

<u>TEST COND</u>	<u>PHASE</u>	<u>MAG</u>	<u>UNCERT.</u>
8000 MHz	-130.8°	6.24 dB	0.10 dB
8500 MHz	-161.6°	6.26 dB	0.11 dB
9000 MHz	167.6°	6.29 dB	0.11 dB
9500 MHz	137°	6.32 dB	0.12 dB
10000 MHz	106.4°	6.35 dB	0.12 dB
10500 MHz	75.8°	6.37 dB	0.12 dB
11000 MHz	45.2°	6.37 dB	0.12 dB
11500 MHz	14.5°	6.37 dB	0.12 dB
12000 MHz	-16.3°	6.36 dB	0.12 dB
12500 MHz	-47.3°	6.37 dB	0.12 dB
13000 MHz	-78.3°	6.39 dB	0.12 dB
13500 MHz	-109.2°	6.42 dB	0.12 dB
14000 MHz	-140.1°	6.47 dB	0.13 dB
14500 MHz	-170.8°	6.52 dB	0.13 dB
15000 MHz	158.5°	6.55 dB	0.13 dB
15500 MHz	127.8°	6.57 dB	0.13 dB
16000 MHz	97°	6.59 dB	0.13 dB
16500 MHz	66.1°	6.60 dB	0.13 dB
17000 MHz	35.2°	6.61 dB	0.13 dB
17500 MHz	4.3°	6.64 dB	0.13 dB
18000 MHz	-26.6°	6.66 dB	0.13 dB
18500 MHz	-57.5°	6.68 dB	0.14 dB
19000 MHz	-88.5°	6.71 dB	0.14 dB
19500 MHz	-119.5°	6.73 dB	0.14 dB
20000 MHz	-150.5°	6.74 dB	0.14 dB
20500 MHz	178.4°	6.76 dB	0.15 dB
21000 MHz	147.3°	6.81 dB	0.15 dB
21500 MHz	116.3°	6.85 dB	0.15 dB
22000 MHz	85.4°	6.89 dB	0.15 dB
22500 MHz	54.5°	6.90 dB	0.16 dB
23000 MHz	23.6°	6.89 dB	0.16 dB
23500 MHz	-7.6°	6.86 dB	0.16 dB
24000 MHz	-39°	6.82 dB	0.16 dB
24500 MHz	-70.6°	6.82 dB	0.16 dB
25000 MHz	-102.2°	6.82 dB	0.16 dB
25500 MHz	-133.9°	6.87 dB	0.16 dB
26000 MHz	-165.5°	6.93 dB	0.16 dB
26500 MHz	163°	6.98 dB	0.16 dB

PORT2 to PORT3 TRACKING

Passed

PORT2 is the right hand port and PORT3 is the left hand port, as seen reading the model number label.

The PHASE(deg) column is the measured PHASE.
 The MAG column is the measured MAGNITUDE.
 The MINIMUM and MAXIMUM columns are specs for MAGNITUDE.
 The UNCERT column is the uncertainty for MAGNITUDE.

TEST COND	PHASE	MINIMUM	MAG	MAXIMUM	UNCERT.	Status
50 MHz	0°	-0.250 dB	0.008 dB	0.250 dB	0.053 dB	
100 MHz	0°	-0.250 dB	0.008 dB	0.250 dB	0.054 dB	
500 MHz	0°	-0.250 dB	0.010 dB	0.250 dB	0.053 dB	
1000 MHz	0°	-0.250 dB	0.011 dB	0.250 dB	0.049 dB	
1500 MHz	-0.1°	-0.250 dB	0.009 dB	0.250 dB	0.055 dB	
2000 MHz	-0.1°	-0.250 dB	0.008 dB	0.250 dB	0.062 dB	
2500 MHz	-0.1°	-0.250 dB	0.008 dB	0.250 dB	0.062 dB	
3000 MHz	-0.1°	-0.250 dB	0.009 dB	0.250 dB	0.056 dB	
3500 MHz	-0.1°	-0.250 dB	0.004 dB	0.250 dB	0.057 dB	
4000 MHz	-0.1°	-0.250 dB	0.007 dB	0.250 dB	0.066 dB	
4500 MHz	-0.1°	-0.250 dB	0.009 dB	0.250 dB	0.071 dB	
5000 MHz	-0.2°	-0.250 dB	0.005 dB	0.250 dB	0.066 dB	
5500 MHz	-0.2°	-0.250 dB	0.003 dB	0.250 dB	0.062 dB	
6000 MHz	-0.2°	-0.250 dB	0.005 dB	0.250 dB	0.069 dB	
6500 MHz	-0.3°	-0.250 dB	0.006 dB	0.250 dB	0.077 dB	
7000 MHz	-0.2°	-0.250 dB	0.007 dB	0.250 dB	0.074 dB	
7500 MHz	-0.3°	-0.250 dB	0.003 dB	0.250 dB	0.067 dB	
8000 MHz	-0.3°	-0.250 dB	0.006 dB	0.250 dB	0.070 dB	
8500 MHz	-0.3°	-0.250 dB	0.005 dB	0.250 dB	0.080 dB	
9000 MHz	-0.3°	-0.250 dB	0.004 dB	0.250 dB	0.083 dB	
9500 MHz	-0.3°	-0.250 dB	0.008 dB	0.250 dB	0.077 dB	
10000 MHz	-0.4°	-0.250 dB	0.000 dB	0.250 dB	0.075 dB	
10500 MHz	-0.3°	-0.250 dB	0.004 dB	0.250 dB	0.085 dB	
11000 MHz	-0.4°	-0.250 dB	-0.001 dB	0.250 dB	0.092 dB	
11500 MHz	-0.4°	-0.250 dB	0.005 dB	0.250 dB	0.087 dB	
12000 MHz	-0.4°	-0.250 dB	0.005 dB	0.250 dB	0.081 dB	
12500 MHz	-0.4°	-0.250 dB	0.005 dB	0.250 dB	0.088 dB	
13000 MHz	-0.4°	-0.250 dB	0.011 dB	0.250 dB	0.099 dB	
13500 MHz	-0.4°	-0.250 dB	0.000 dB	0.250 dB	0.10 dB	
14000 MHz	-0.4°	-0.250 dB	0.002 dB	0.250 dB	0.095 dB	
14500 MHz	-0.4°	-0.250 dB	-0.001 dB	0.250 dB	0.099 dB	
15000 MHz	-0.5°	-0.250 dB	-0.003 dB	0.250 dB	0.11 dB	
15500 MHz	-0.5°	-0.250 dB	0.002 dB	0.250 dB	0.11 dB	
16000 MHz	-0.5°	-0.250 dB	-0.002 dB	0.250 dB	0.10 dB	
16500 MHz	-0.5°	-0.250 dB	0.009 dB	0.250 dB	0.10 dB	
17000 MHz	-0.5°	-0.250 dB	0.002 dB	0.250 dB	0.11 dB	
17500 MHz	-0.5°	-0.250 dB	0.001 dB	0.250 dB	0.12 dB	
18000 MHz	-0.6°	-0.250 dB	-0.007 dB	0.250 dB	0.11 dB	
18500 MHz	-0.6°	-0.400 dB	0.003 dB	0.400 dB	0.10 dB	
19000 MHz	-0.7°	-0.400 dB	-0.012 dB	0.400 dB	0.11 dB	

PORT2 to PORT3 TRACKING (cont.)

TEST COND	PHASE	MINIMUM	MAG	MAXIMUM	UNCERT.	Status
19500 MHz	-0.7°	-0.400 dB	0.002 dB	0.400 dB	0.12 dB	
20000 MHz	-0.6°	-0.400 dB	-0.007 dB	0.400 dB	0.12 dB	
20500 MHz	-0.7°	-0.400 dB	-0.027 dB	0.400 dB	0.11 dB	
21000 MHz	-0.8°	-0.400 dB	-0.002 dB	0.400 dB	0.11 dB	
21500 MHz	-0.8°	-0.400 dB	-0.009 dB	0.400 dB	0.13 dB	
22000 MHz	-0.7°	-0.400 dB	-0.023 dB	0.400 dB	0.13 dB	
22500 MHz	-0.7°	-0.400 dB	-0.020 dB	0.400 dB	0.12 dB	
23000 MHz	-0.6°	-0.400 dB	-0.027 dB	0.400 dB	0.11 dB	
23500 MHz	-0.6°	-0.400 dB	-0.041 dB	0.400 dB	0.12 dB	
24000 MHz	-0.7°	-0.400 dB	-0.038 dB	0.400 dB	0.13 dB	
24500 MHz	-0.7°	-0.400 dB	-0.030 dB	0.400 dB	0.12 dB	
25000 MHz	-0.6°	-0.400 dB	-0.013 dB	0.400 dB	0.11 dB	
25500 MHz	-0.6°	-0.400 dB	-0.029 dB	0.400 dB	0.12 dB	
26000 MHz	-0.6°	-0.400 dB	-0.020 dB	0.400 dB	0.14 dB	
26500 MHz	-0.6°	-0.400 dB	-0.039 dB	0.400 dB	0.14 dB	

The PHASE uncertainty is $\text{Arcsin}(\text{Lin_Mu}/\text{Lin_Mag})$ degree, except where Lin_Mag is less than Lin_Mu , in which case PHASE uncertainty is +/- 180 degree.
 Lin_Mu & Lin_Mag are linear mode of UNCERT & MAG, which can be calculated by:

$$\text{Lin_Mag} = 10^{(\text{MAG}/20)}$$

$$\text{Lin_Mu} = 10^{(\text{UNCERT}/20)}$$

EQUIVALENT SOURCE MATCH

Passed

PORT2 is the right hand port and PORT3 is the left hand port, as seen reading the model number label.

The PHASE(deg) column is the measured PHASE.
 The MAG column is the measured MAGNITUDE.
 The MAXIMUM column is the specs for MAGNITUDE.
 The UNCERT column is the uncertainty for MAGNITUDE.

TEST COND	PHASE	MAG	MAXIMUM	UNCERT.	Status
PORT2 EQUIVALENT SOURCE MATCH:					
50 MHz	20.5°	0.0030	0.0991	0.0030	
100 MHz	19.4°	0.0036	0.0991	0.0032	
500 MHz	3.3°	0.0055	0.0991	0.0043	
1000 MHz	-16.5°	0.0063	0.0991	0.0052	
1500 MHz	-35.2°	0.0059	0.0991	0.0048	
2000 MHz	-56.4°	0.0056	0.0991	0.0036	
2500 MHz	-71.9°	0.0052	0.0991	0.0042	
3000 MHz	-84.1°	0.0047	0.0991	0.0058	
3500 MHz	-133.9°	0.0033	0.0991	0.0059	
4000 MHz	-115.2°	0.0027	0.0991	0.0043	
4500 MHz	-124.9°	0.0032	0.0991	0.0040	

Model 11667B Serial 13230
 Options Tested

Test Date 7 Jan 2019
 Condition As Received

EQUIVALENT SOURCE MATCH (cont.)

TEST COND	PHASE	MAG	MAXIMUM	UNCERT.	Status
5000 MHz	-152.5°	0.0038	0.0991	0.0059	
5500 MHz	-177.7°	0.0057	0.0991	0.0066	
6000 MHz	162°	0.0082	0.0991	0.0053	
6500 MHz	140°	0.0108	0.0991	0.0038	
7000 MHz	116.6°	0.0139	0.0991	0.0057	
7500 MHz	95.7°	0.0170	0.0991	0.0071	
8000 MHz	74.8°	0.0201	0.0991	0.0063	
8500 MHz	52°	0.0227	0.0991	0.0043	
9000 MHz	28.4°	0.0248	0.0991	0.0052	
9500 MHz	3.5°	0.0258	0.0991	0.0075	
10000 MHz	-23.1°	0.0262	0.0991	0.0075	
10500 MHz	-51.9°	0.0274	0.0991	0.0054	
11000 MHz	-80.7°	0.0285	0.0991	0.0048	
11500 MHz	-111.8°	0.0300	0.0991	0.0074	
12000 MHz	-143.5°	0.0324	0.0991	0.0084	
12500 MHz	-173.5°	0.0355	0.0991	0.0067	
13000 MHz	158.9°	0.0391	0.0991	0.0046	
13500 MHz	133.4°	0.0422	0.0991	0.0071	
14000 MHz	108.2°	0.0443	0.0991	0.0094	
14500 MHz	83°	0.0450	0.0991	0.0087	
15000 MHz	58°	0.0446	0.0991	0.0057	
15500 MHz	31.7°	0.0435	0.0991	0.0061	
16000 MHz	5.5°	0.0392	0.0991	0.0091	
16500 MHz	-26.4°	0.0339	0.0991	0.0094	
17000 MHz	-59.1°	0.0304	0.0991	0.0067	
17500 MHz	-98.1°	0.0264	0.0991	0.0058	
18000 MHz	-141.1°	0.0248	0.0991	0.0091	
18500 MHz	177°	0.0281	0.0991	0.010	
19000 MHz	138.5°	0.0340	0.0991	0.0081	
19500 MHz	110.1°	0.0395	0.0991	0.0057	
20000 MHz	78.6°	0.0421	0.0991	0.0083	
20500 MHz	50.6°	0.0419	0.0991	0.011	
21000 MHz	20.4°	0.0432	0.0991	0.0095	
21500 MHz	-8.7°	0.0392	0.0991	0.0064	
22000 MHz	-42°	0.0372	0.0991	0.0079	
22500 MHz	-79°	0.0336	0.0991	0.011	
23000 MHz	-123.1°	0.0340	0.0991	0.010	
23500 MHz	-164.6°	0.0391	0.0991	0.0072	
24000 MHz	162.1°	0.0477	0.0991	0.0075	
24500 MHz	129.2°	0.0543	0.0991	0.011	
25000 MHz	97.6°	0.0639	0.0991	0.012	
25500 MHz	71.4°	0.0721	0.0991	0.0089	
26000 MHz	43.9°	0.0763	0.0991	0.0073	
26500 MHz	15.5°	0.0777	0.0991	0.011	

PORT3 EQUIVALENT SOURCE MATCH:

50 MHz	8.2°	0.0041	0.0991	0.0030
100 MHz	11°	0.0053	0.0991	0.0031
500 MHz	-11.5°	0.0067	0.0991	0.0042
1000 MHz	-28.3°	0.0080	0.0991	0.0051

Model 11667B Serial 13230
 Options Tested

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 Condition As Received

EQUIVALENT SOURCE MATCH (cont.)

TEST COND	PHASE	MAG	MAXIMUM	UNCERT.	Status
1500 MHz	-47.6°	0.0063	0.0991	0.0047	
2000 MHz	-93.4°	0.0064	0.0991	0.0034	
2500 MHz	-108°	0.0075	0.0991	0.0042	
3000 MHz	-122.3°	0.0057	0.0991	0.0057	
3500 MHz	176.8°	0.0054	0.0991	0.0057	
4000 MHz	151.1°	0.0053	0.0991	0.0042	
4500 MHz	138.8°	0.0056	0.0991	0.0040	
5000 MHz	131.2°	0.0068	0.0991	0.0059	
5500 MHz	116.6°	0.0089	0.0991	0.0066	
6000 MHz	108.9°	0.0111	0.0991	0.0052	
6500 MHz	101.5°	0.0138	0.0991	0.0038	
7000 MHz	86.8°	0.0168	0.0991	0.0057	
7500 MHz	69.6°	0.0204	0.0991	0.0070	
8000 MHz	53.1°	0.0230	0.0991	0.0062	
8500 MHz	34°	0.0251	0.0991	0.0042	
9000 MHz	13.2°	0.0275	0.0991	0.0052	
9500 MHz	-10.1°	0.0288	0.0991	0.0074	
10000 MHz	-33.7°	0.0289	0.0991	0.0075	
10500 MHz	-62.5°	0.0289	0.0991	0.0054	
11000 MHz	-91.4°	0.0300	0.0991	0.0047	
11500 MHz	-122.8°	0.0320	0.0991	0.0073	
12000 MHz	-151.6°	0.0336	0.0991	0.0083	
12500 MHz	172.9°	0.0372	0.0991	0.0066	
13000 MHz	145.6°	0.0413	0.0991	0.0046	
13500 MHz	119°	0.0458	0.0991	0.0070	
14000 MHz	93.3°	0.0484	0.0991	0.0093	
14500 MHz	68.2°	0.0501	0.0991	0.0086	
15000 MHz	42.5°	0.0514	0.0991	0.0057	
15500 MHz	15.1°	0.0502	0.0991	0.0060	
16000 MHz	-14.5°	0.0486	0.0991	0.0090	
16500 MHz	-40.5°	0.0461	0.0991	0.0093	
17000 MHz	-74°	0.0418	0.0991	0.0067	
17500 MHz	-111.1°	0.0424	0.0991	0.0057	
18000 MHz	-145°	0.0441	0.0991	0.0090	
18500 MHz	178.6°	0.0469	0.0991	0.010	
19000 MHz	151.8°	0.0495	0.0991	0.0083	
19500 MHz	116.5°	0.0533	0.0991	0.0057	
20000 MHz	92.3°	0.0563	0.0991	0.0083	
20500 MHz	65.5°	0.0546	0.0991	0.011	
21000 MHz	38.7°	0.0528	0.0991	0.0097	
21500 MHz	7.9°	0.0461	0.0991	0.0066	
22000 MHz	-22.2°	0.0407	0.0991	0.0081	
22500 MHz	-60.6°	0.0330	0.0991	0.011	
23000 MHz	-111.5°	0.0297	0.0991	0.011	
23500 MHz	-161.2°	0.0339	0.0991	0.0073	
24000 MHz	158.5°	0.0428	0.0991	0.0076	
24500 MHz	128.4°	0.0574	0.0991	0.011	
25000 MHz	99.2°	0.0668	0.0991	0.012	
25500 MHz	69.5°	0.0754	0.0991	0.0089	
26000 MHz	42.6°	0.0806	0.0991	0.0072	
26500 MHz	14.8°	0.0850	0.0991	0.011	

Model 11667B Serial 13230
Options Tested

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Condition As Received

EQUIVALENT SOURCE MATCH (cont.)

The PHASE uncertainty is $\text{Arcsin}(\text{UNCERT}/\text{MAG})$ degree,
except where MAG is less than UNCERT, in which case
PHASE uncertainty is +/- 180 degree.