

# Frequency stability test results

No.24-1-0032801T007\_TR1-A202-R01

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August 02, 2024

Test Standard(s)                      NA - NI

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Authorized

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Radio Labs

## NA # Frequency accuracy over temperature and voltage ~

### References

TC start	01.08.2024 08:20:58
Ambit temp [°C]   humidity [rel%]	not enabled   not enabled
System version	5.0.7.6
Standard   Version	NA   NI
Method	
Description	Frequency Accuracy over Temp. and Voltage
Information	

### Equipment

Signal analyzer,Rohde&Schwarz,FSV3030,1330.5000K30/101247,1.90
Switch matrix,cetecom advanced GmbH,USM,D001,1.0.0

### Test Parameter

Additional path loss [dB]	-37
Full path type	EUT_SA_GEN_SIG
Full path name	EUT1.MP.SIG1/EUT1.SA/
Switch bits	00000001:00000001:00000000:00000110
Temp Variation enabled   Voltage Variation enabled	Yes Yes
Message start	01.08.2024 08:21:01

### Equipment

Signal analyzer,Rohde&Schwarz,FSV3030,1330.5000K30/101247,1.90
Power supply,HEWLETT-PACKARD,E3632A,0,1.1-5.0-1.0
Climatic box,Voetsch,VT4002,56604682,LAN

### RESULT: Reference power with small filter

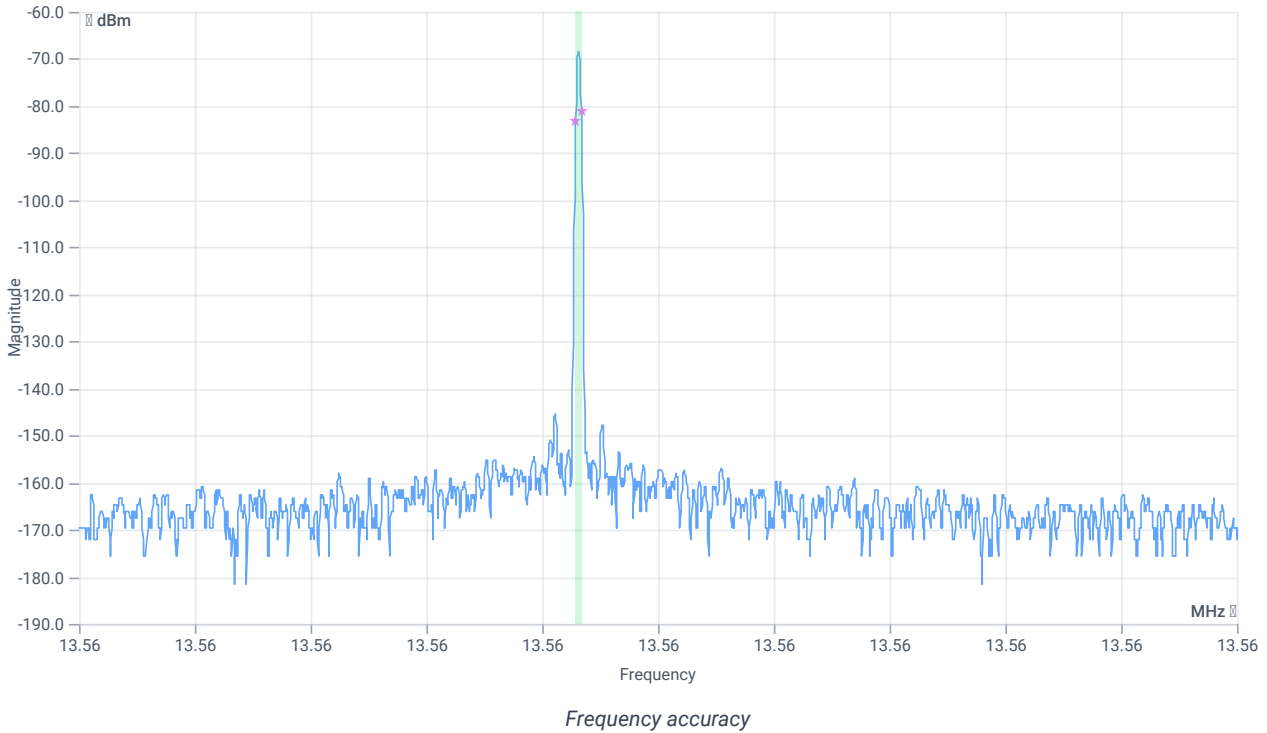
DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Ref. power 0.1MHz/0.1MHz	--	--	-66.01	dBm	INFO
Ref. frequency	--	--	13.562	MHz	INFO

### READ SA SETTINGS:

RefLevel [dBm]   RefLevelOffset [dB]   InpAtt [dB]	-63.01   -36.54   0
Start [MHz]   Stop [MHz]	13.558   13.563
RBW [MHz]   VBW [MHz]	0.000010   0.000100
Detector   TraceMode	POS   MAXH

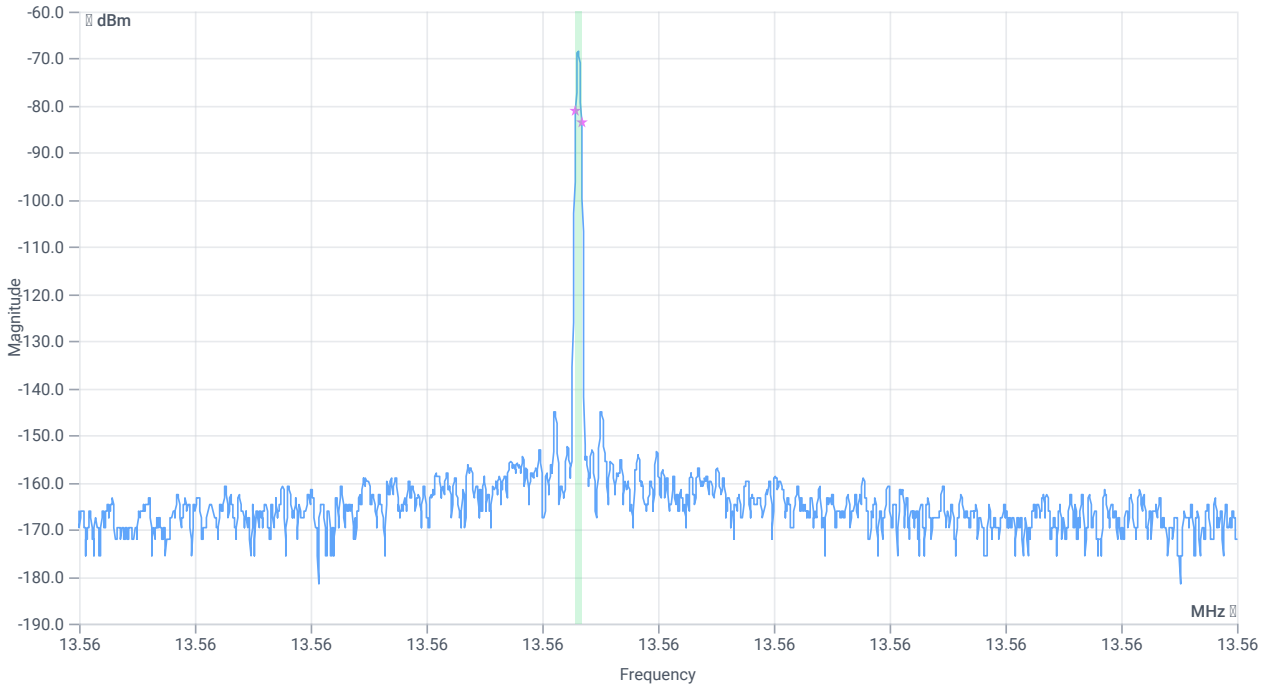
READ SA SETTINGS:

Sweep: time [ms] | count | points per Section | type 7980 | 2 | 3001 | SWE



RESULT Temperature [°C]: 20 | Voltage [V]: 12

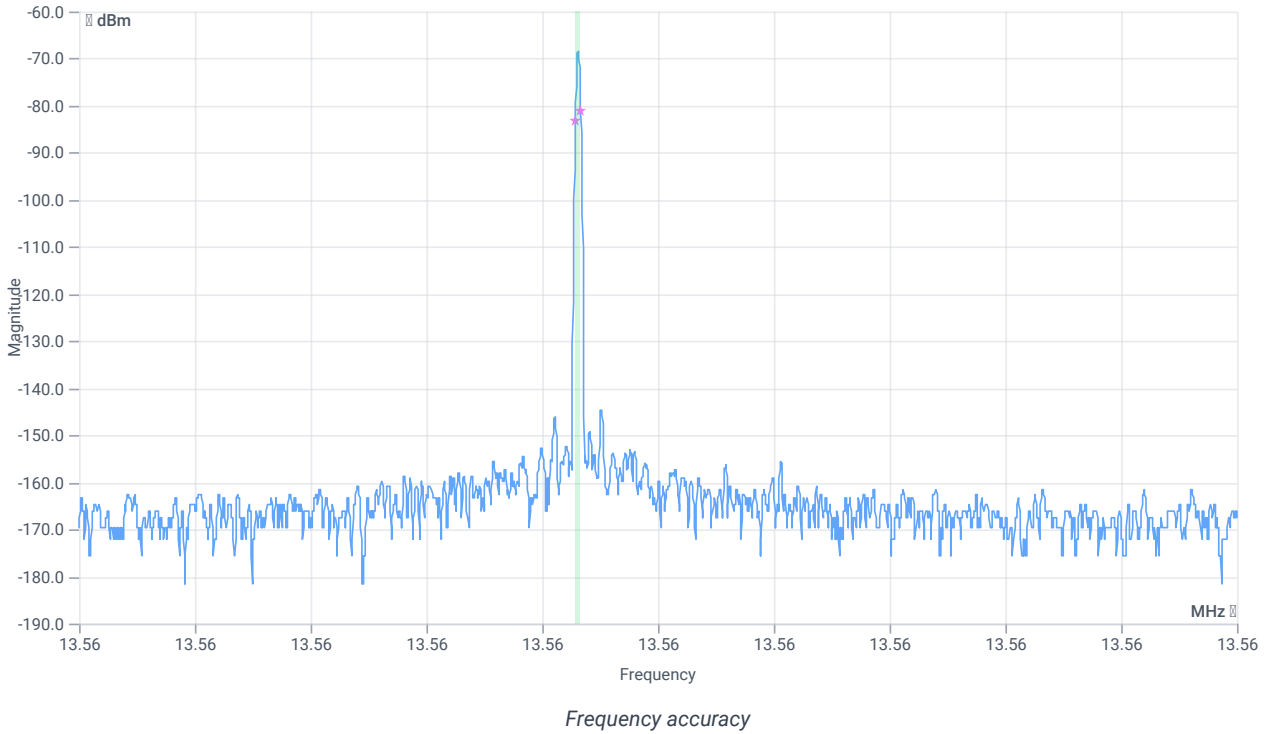
DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	---	---	0.000	MHz	INFO
T1 99%	---	---	13.5596	MHz	INFO
T2 99%	---	---	13.5597	MHz	INFO
F0	---	---	13.559657	MHz	INFO
Ftarget	---	---	13.560000	MHz	INFO
Foffset	---	---	-0.000343	MHz	INFO
Foffset	---	---	-0.343	kHz	INFO
Foffset (abs)	---	100	25.28	ppm	PASS



Frequency accuracy

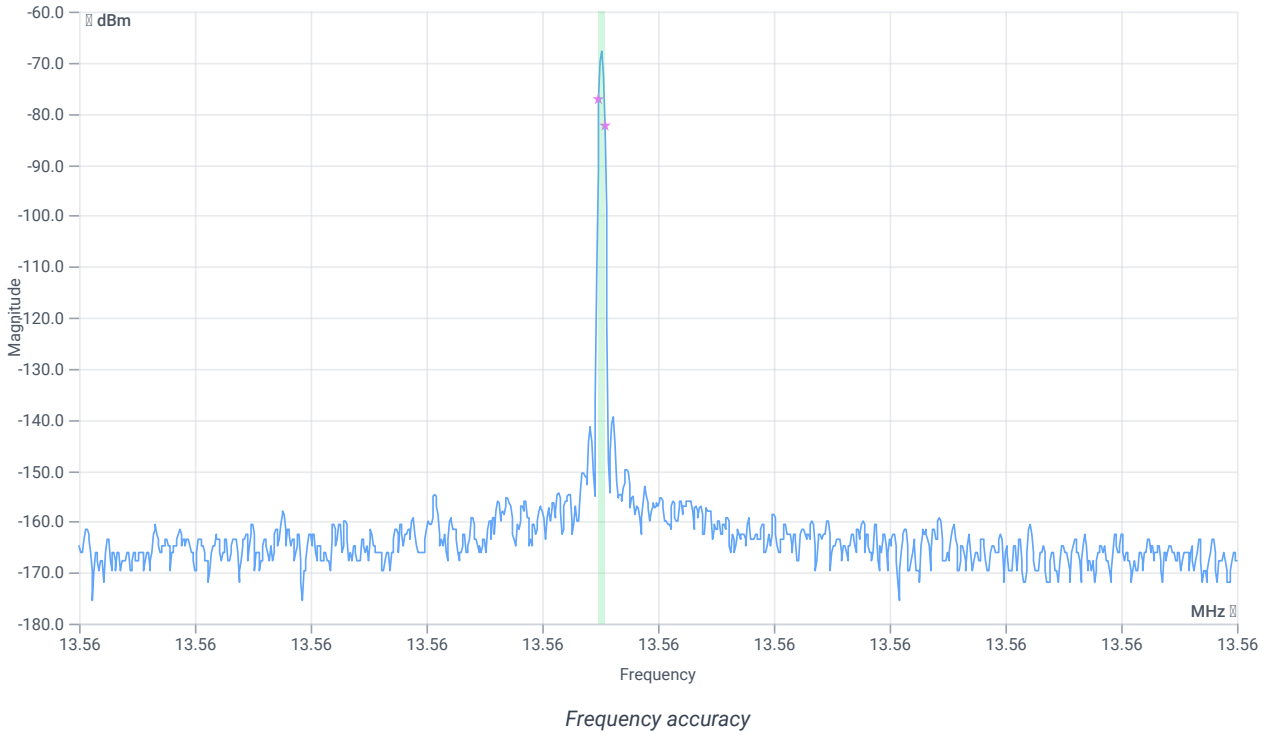
RESULT Temperature [°C]: 20 | Voltage [V]: 10.2

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	---	---	0.000	MHz	INFO
T1 99%	---	---	13.5596	MHz	INFO
T2 99%	---	---	13.5597	MHz	INFO
F0	---	---	13.559656	MHz	INFO
Ftarget	---	---	13.560000	MHz	INFO
Foffset	---	---	-0.000344	MHz	INFO
Foffset	---	---	-0.344	kHz	INFO
Foffset (abs)	---	100	25.35	ppm	PASS



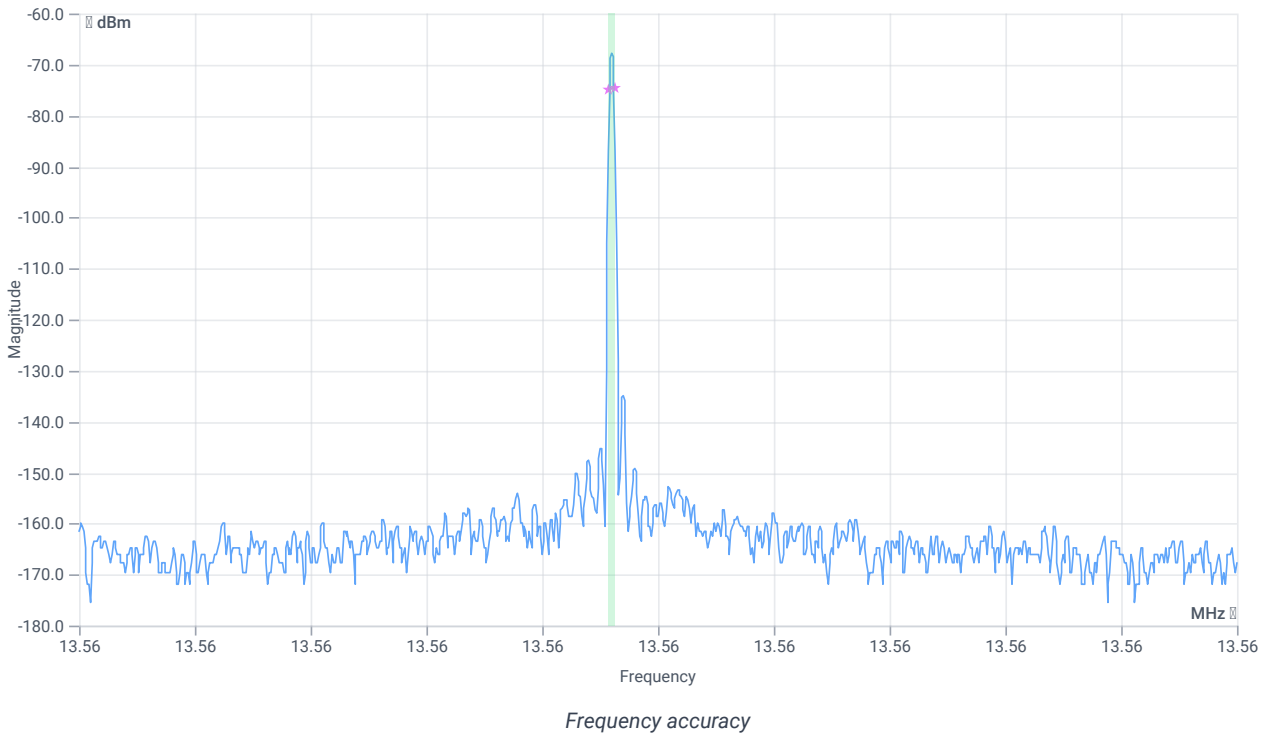
RESULT Temperature [°C]: 20 | Voltage [V]: 13.8

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	---	---	0.000	MHz	INFO
T1 99%	---	---	13.5596	MHz	INFO
T2 99%	---	---	13.5597	MHz	INFO
F0	---	---	13.559656	MHz	INFO
Ftarget	---	---	13.560000	MHz	INFO
Foffset	---	---	-0.000344	MHz	INFO
Foffset	---	---	-0.344	kHz	INFO
Foffset (abs)	---	100	25.4	ppm	PASS



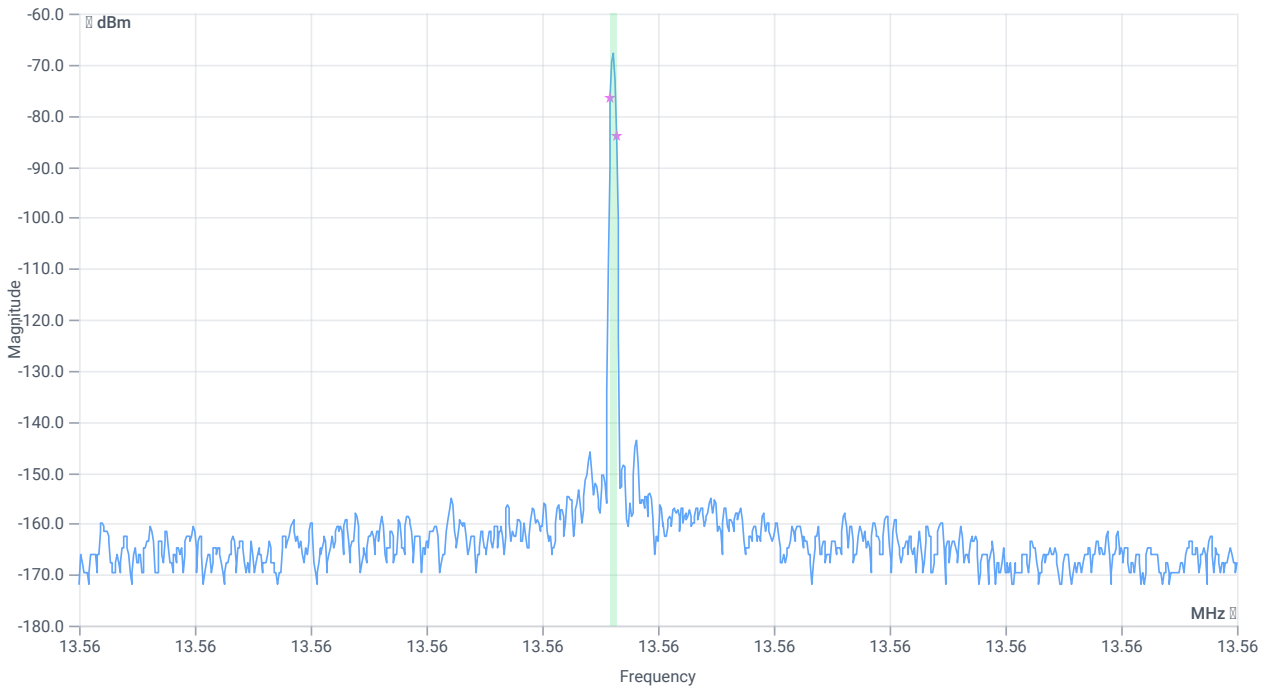
RESULT Temperature [°C]: -40 | Voltage [V]: 12

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	--	--	0.000	MHz	INFO
T1 99%	--	--	13.5597	MHz	INFO
T2 99%	--	--	13.5598	MHz	INFO
F0	--	--	13.559757	MHz	INFO
Ftarget	--	--	13.560000	MHz	INFO
Foffset	--	--	-0.000243	MHz	INFO
Foffset	--	--	-0.243	kHz	INFO
Foffset (abs)	--	100	17.93	ppm	PASS



RESULT Temperature [°C]: -30 | Voltage [V]: 12

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	---	---	0.000	MHz	INFO
T1 99%	---	---	13.5598	MHz	INFO
T2 99%	---	---	13.5598	MHz	INFO
F0	---	---	13.559800	MHz	INFO
Ftarget	---	---	13.560000	MHz	INFO
Foffset	---	---	-0.000200	MHz	INFO
Foffset	---	---	-0.200	kHz	INFO
Foffset (abs)	---	100	14.73	ppm	PASS

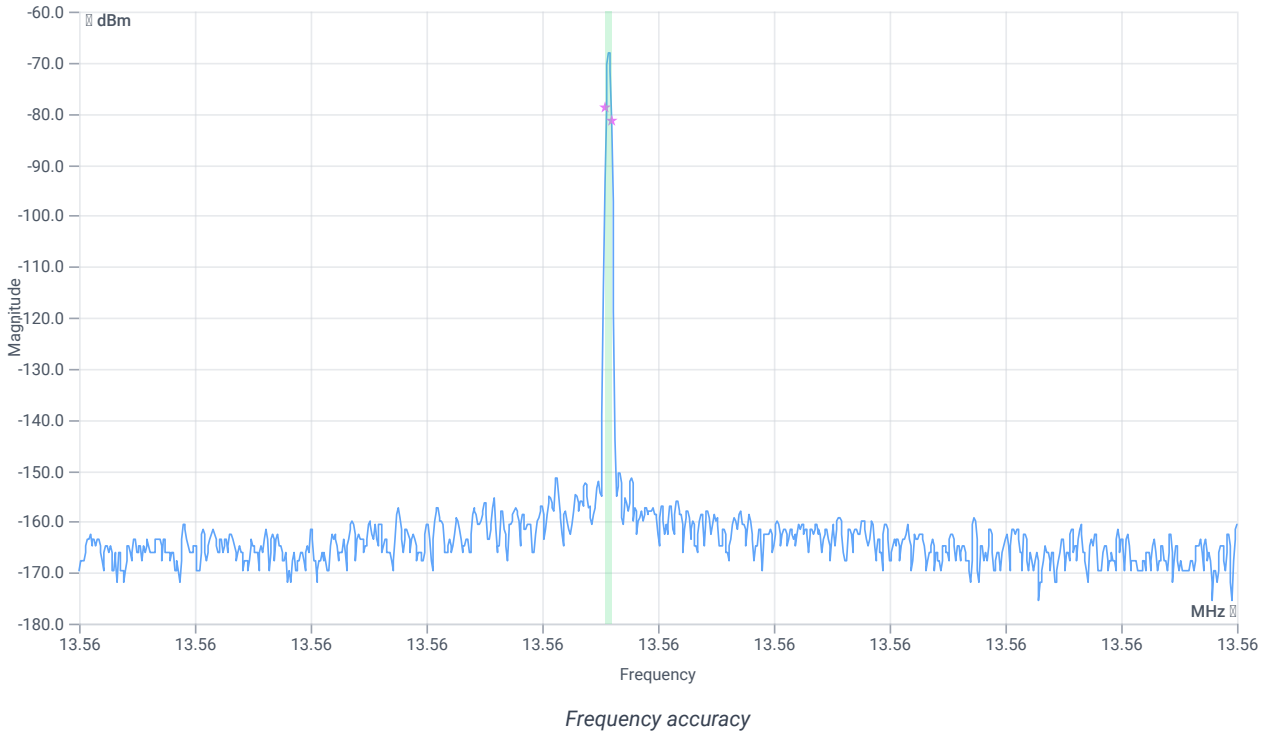


Frequency accuracy

RESULT Temperature [°C]: -20 | Voltage [V]: 12

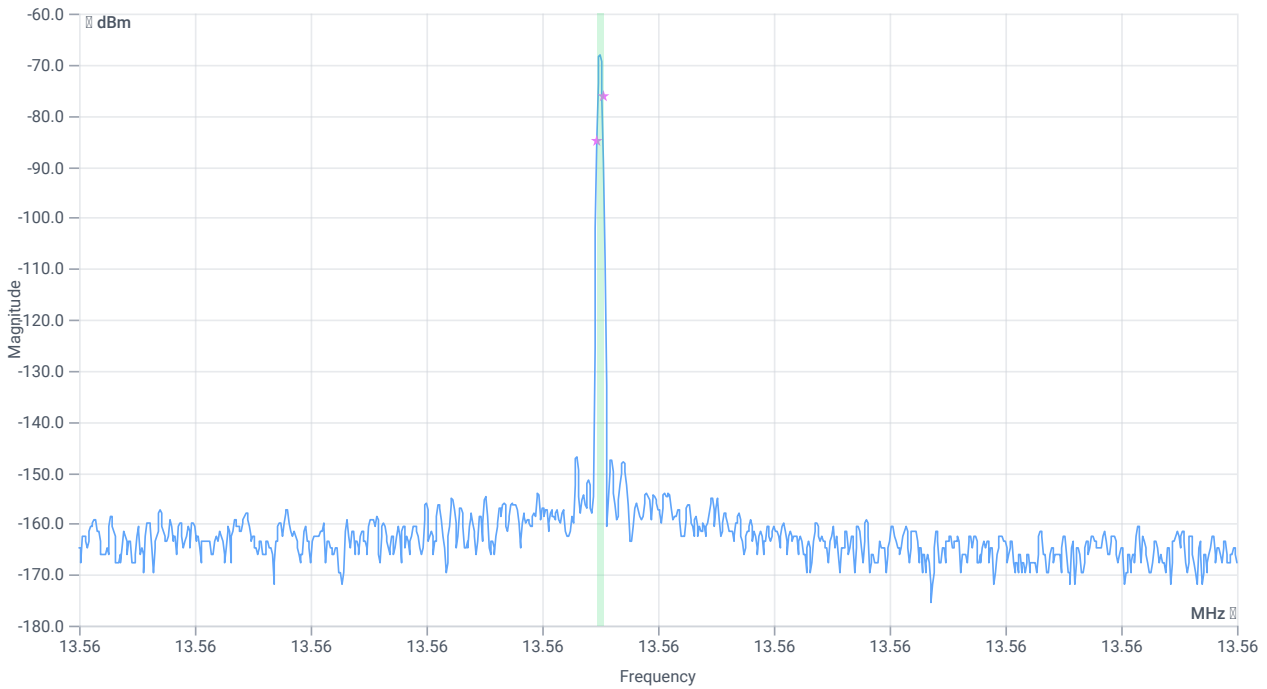
DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	---	---	0.000	MHz	INFO
T1 99%	---	---	13.5598	MHz	INFO
T2 99%	---	---	13.5598	MHz	INFO
F0	---	---	13.559806	MHz	INFO
Ftarget	---	---	13.560000	MHz	INFO
Foffset	---	---	-0.000194	MHz	INFO
Foffset	---	---	-0.194	kHz	INFO
Foffset (abs)	---	100	14.28	ppm	PASS





**RESULT** Temperature [°C]: -10 | Voltage [V]: 12

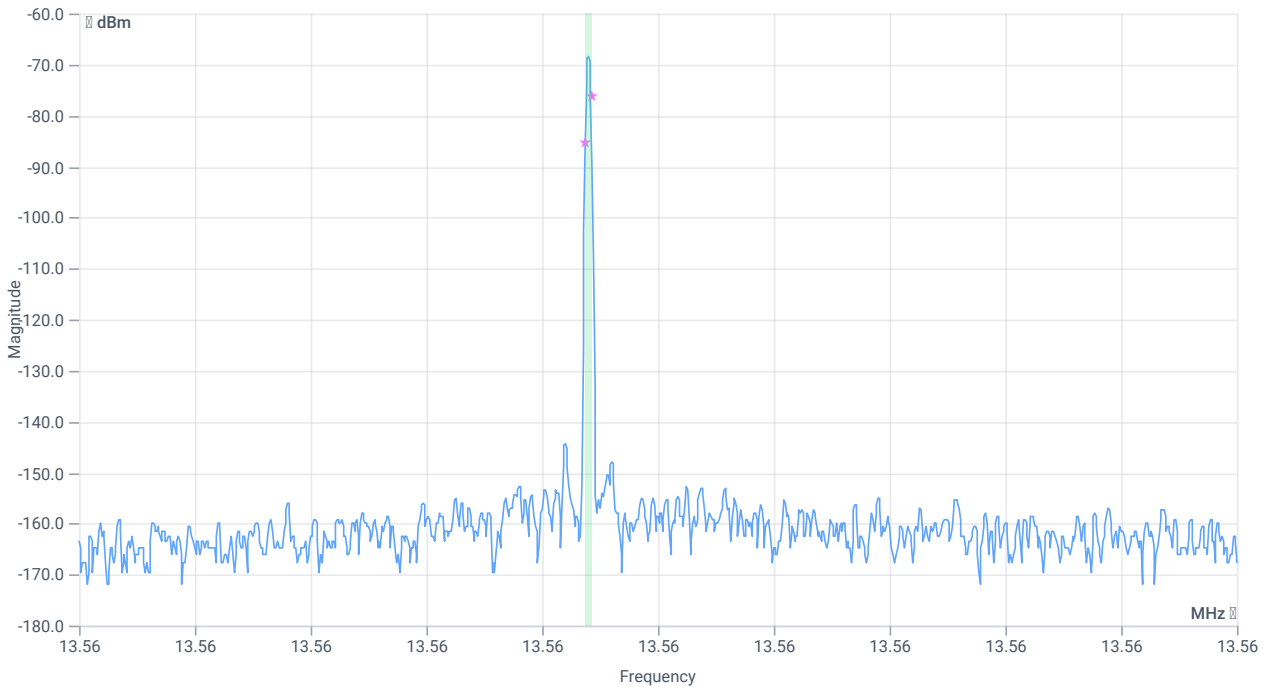
DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	---	---	0.000	MHz	INFO
T1 99%	---	---	13.5598	MHz	INFO
T2 99%	---	---	13.5598	MHz	INFO
F0	---	---	13.559787	MHz	INFO
Ftarget	---	---	13.560000	MHz	INFO
Foffset	---	---	-0.000213	MHz	INFO
Foffset	---	---	-0.213	kHz	INFO
Foffset (abs)	---	100	15.69	ppm	PASS



Frequency accuracy

RESULT Temperature [°C]: 0 | Voltage [V]: 12

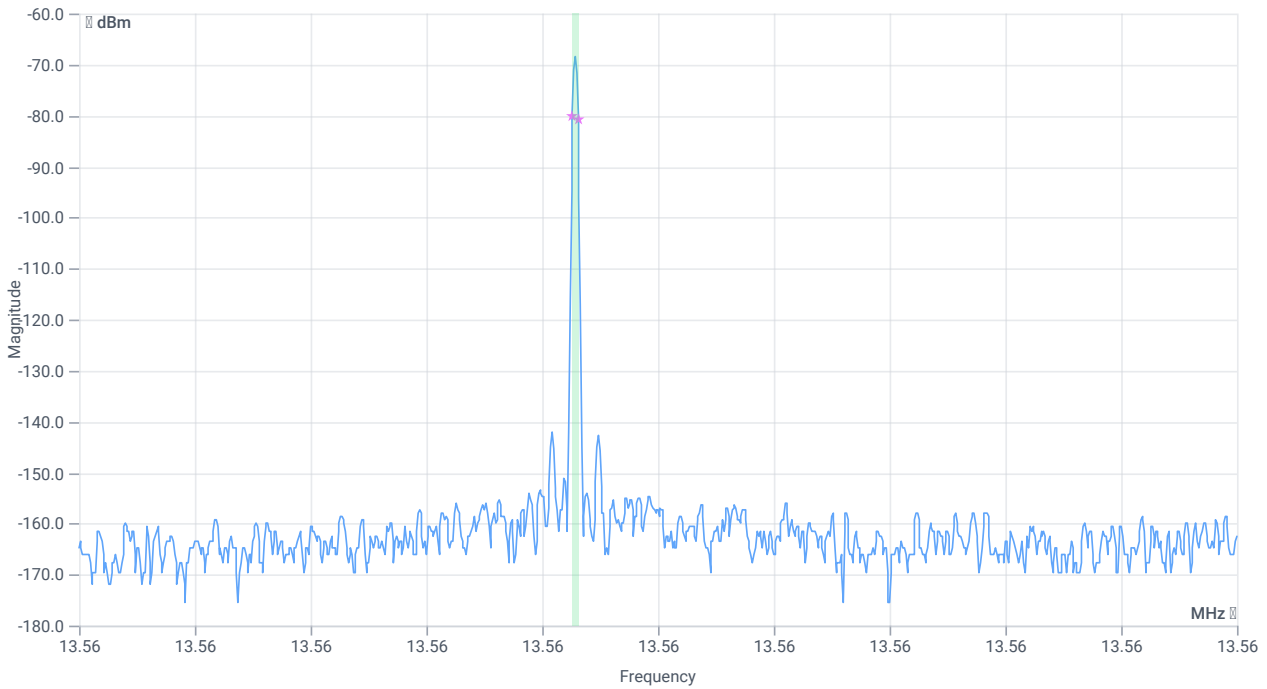
DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	---	---	0.000	MHz	INFO
T1 99%	---	---	13.5597	MHz	INFO
T2 99%	---	---	13.5598	MHz	INFO
F0	---	---	13.559749	MHz	INFO
Ftarget	---	---	13.560000	MHz	INFO
Foffset	---	---	-0.000251	MHz	INFO
Foffset	---	---	-0.251	kHz	INFO
Foffset (abs)	---	100	18.48	ppm	PASS



Frequency accuracy

RESULT Temperature [°C]: 10 | Voltage [V]: 12

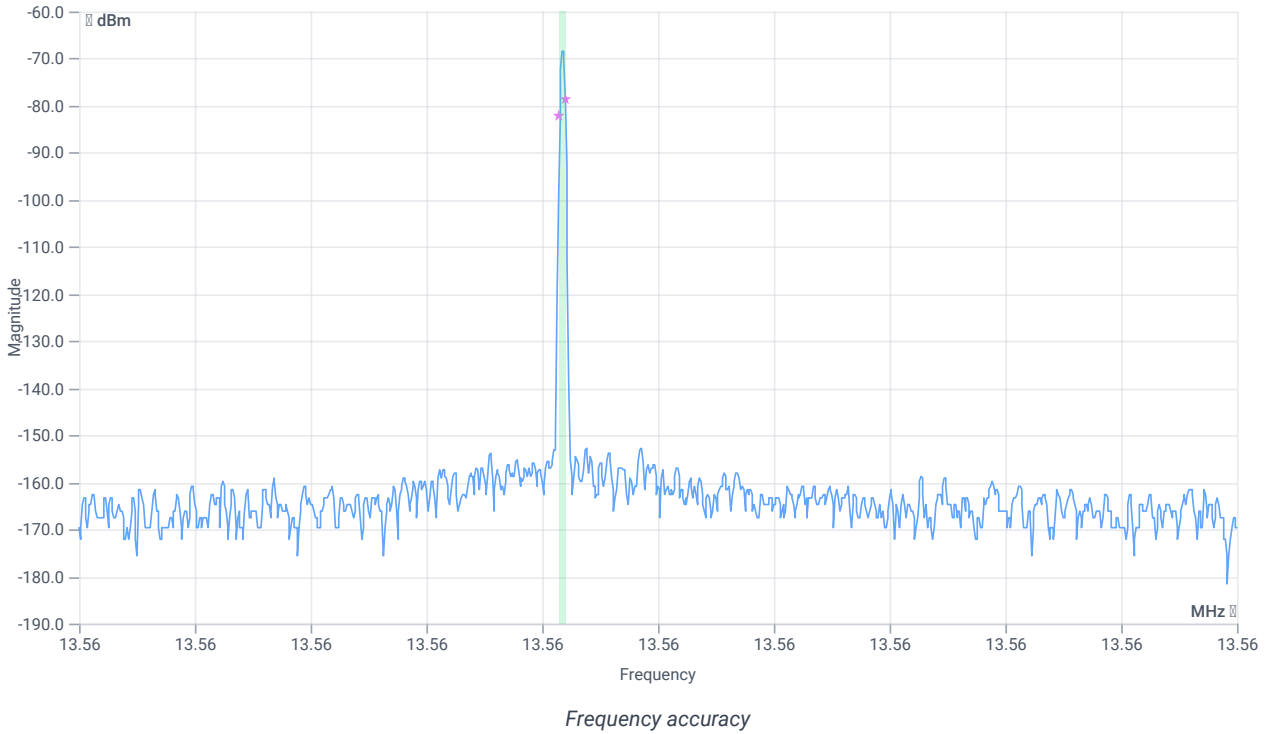
DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	---	---	0.000	MHz	INFO
T1 99%	---	---	13.5597	MHz	INFO
T2 99%	---	---	13.5597	MHz	INFO
F0	---	---	13.559700	MHz	INFO
Ftarget	---	---	13.560000	MHz	INFO
Foffset	---	---	-0.000300	MHz	INFO
Foffset	---	---	-0.300	kHz	INFO
Foffset (abs)	---	100	22.16	ppm	PASS



Frequency accuracy

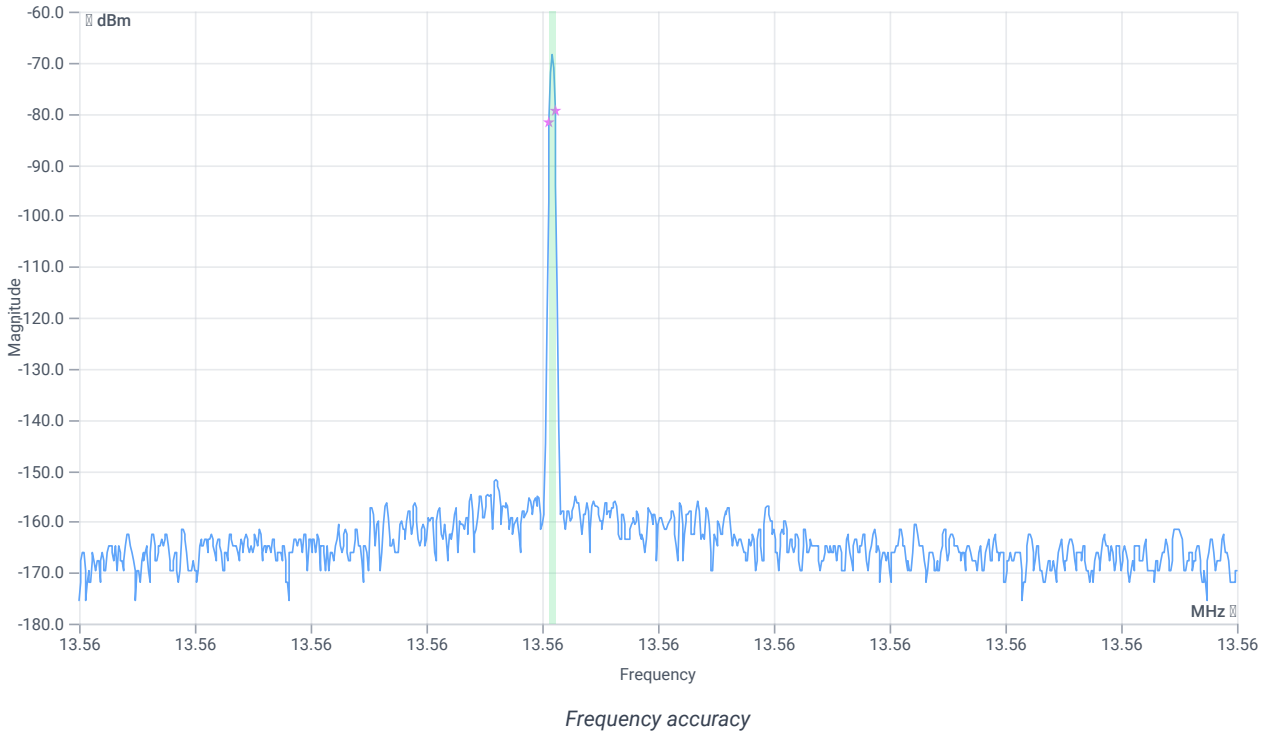
RESULT Temperature [°C]: 20 | Voltage [V]: 12

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	--	--	0.000	MHz	INFO
T1 99%	--	--	13.5596	MHz	INFO
T2 99%	--	--	13.5597	MHz	INFO
F0	--	--	13.559643	MHz	INFO
Ftarget	--	--	13.560000	MHz	INFO
Foffset	--	--	-0.000357	MHz	INFO
Foffset	--	--	-0.357	kHz	INFO
Foffset (abs)	--	100	26.35	ppm	PASS



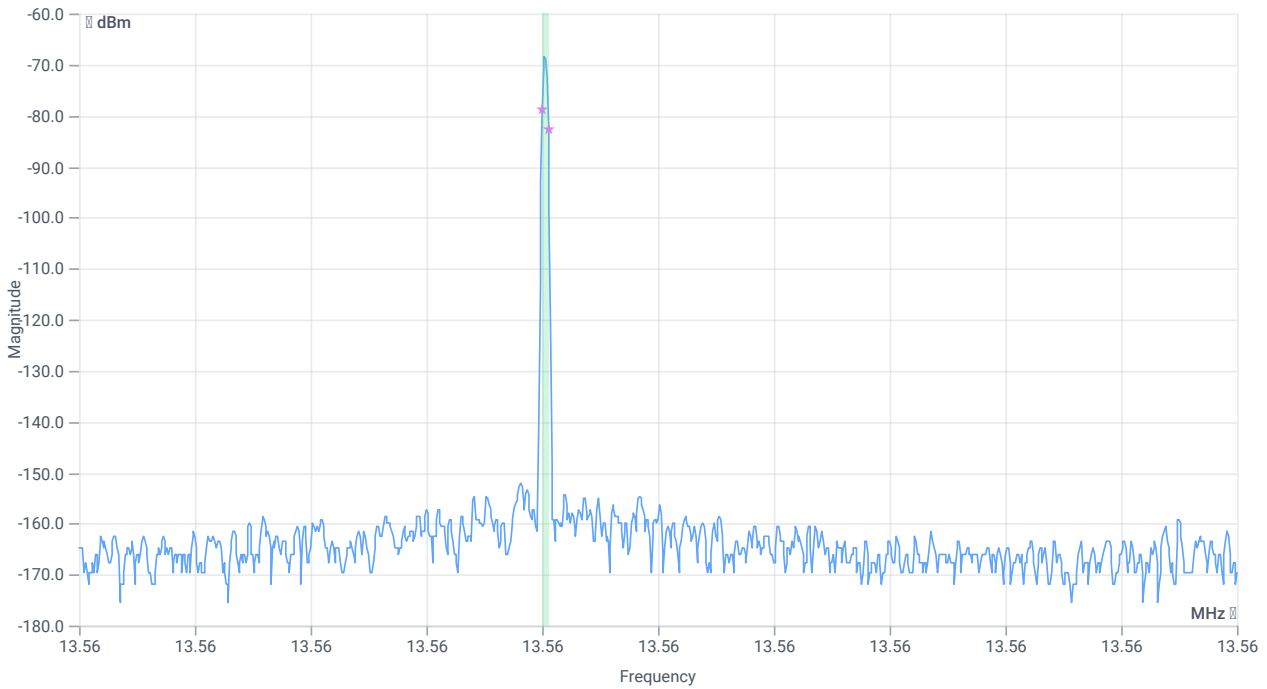
RESULT Temperature [°C]: 30 | Voltage [V]: 12

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	---	---	0.000	MHz	INFO
T1 99%	---	---	13.5596	MHz	INFO
T2 99%	---	---	13.5596	MHz	INFO
F0	---	---	13.559588	MHz	INFO
Ftarget	---	---	13.560000	MHz	INFO
Foffset	---	---	-0.000412	MHz	INFO
Foffset	---	---	-0.412	kHz	INFO
Foffset (abs)	---	100	30.35	ppm	PASS



RESULT Temperature [°C]: 40 | Voltage [V]: 12

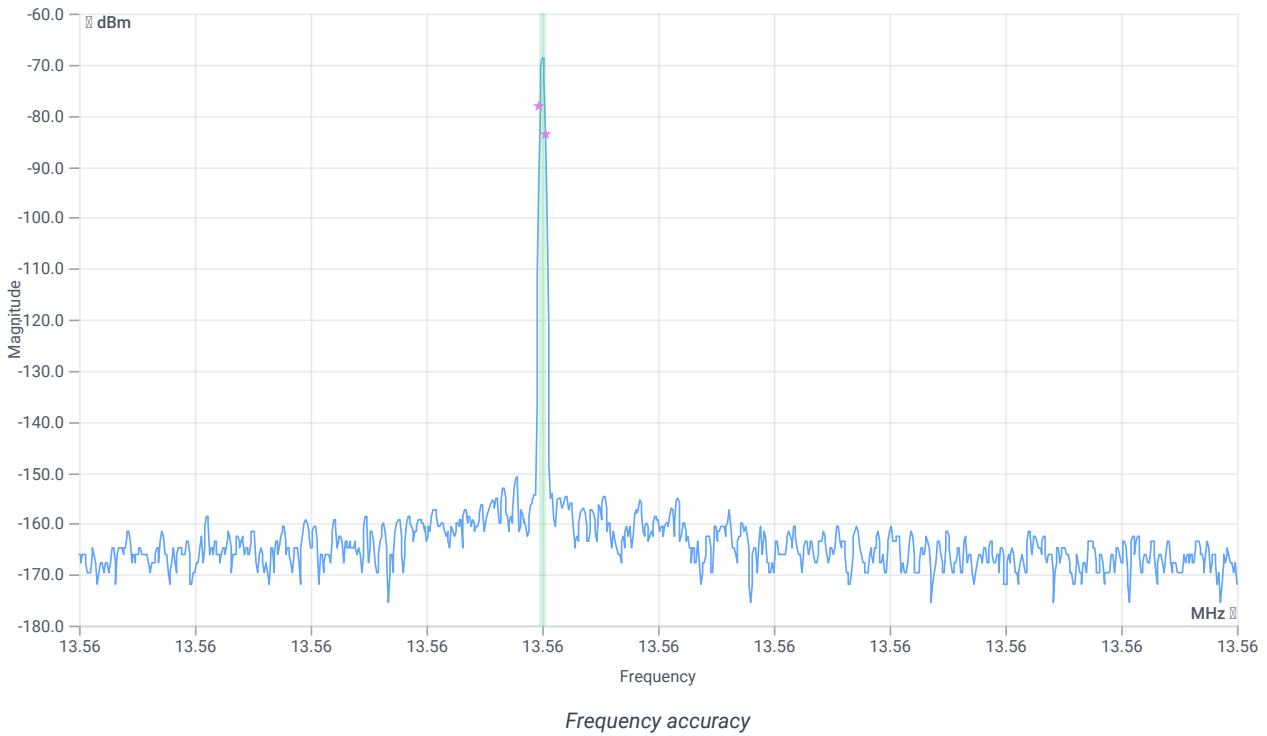
DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	---	---	0.000	MHz	INFO
T1 99%	---	---	13.5595	MHz	INFO
T2 99%	---	---	13.5596	MHz	INFO
F0	---	---	13.559543	MHz	INFO
Ftarget	---	---	13.560000	MHz	INFO
Foffset	---	---	-0.000457	MHz	INFO
Foffset	---	---	-0.457	kHz	INFO
Foffset (abs)	---	100	33.68	ppm	PASS



Frequency accuracy

RESULT Temperature [°C]: 50 | Voltage [V]: 12

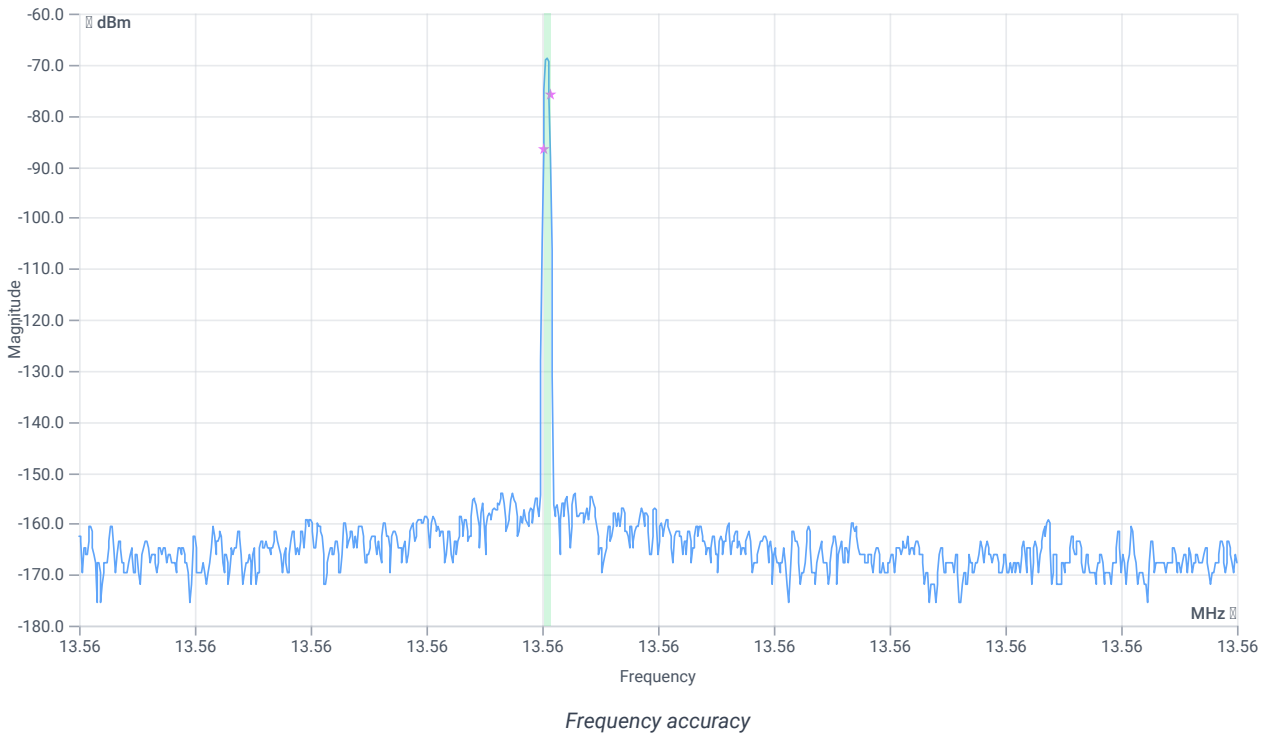
DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	---	---	0.000	MHz	INFO
T1 99%	---	---	13.5595	MHz	INFO
T2 99%	---	---	13.5595	MHz	INFO
F0	---	---	13.559512	MHz	INFO
Ftarget	---	---	13.560000	MHz	INFO
Foffset	---	---	-0.000488	MHz	INFO
Foffset	---	---	-0.488	kHz	INFO
Foffset (abs)	---	100	35.96	ppm	PASS



RESULT Temperature [°C]: 60 | Voltage [V]: 12

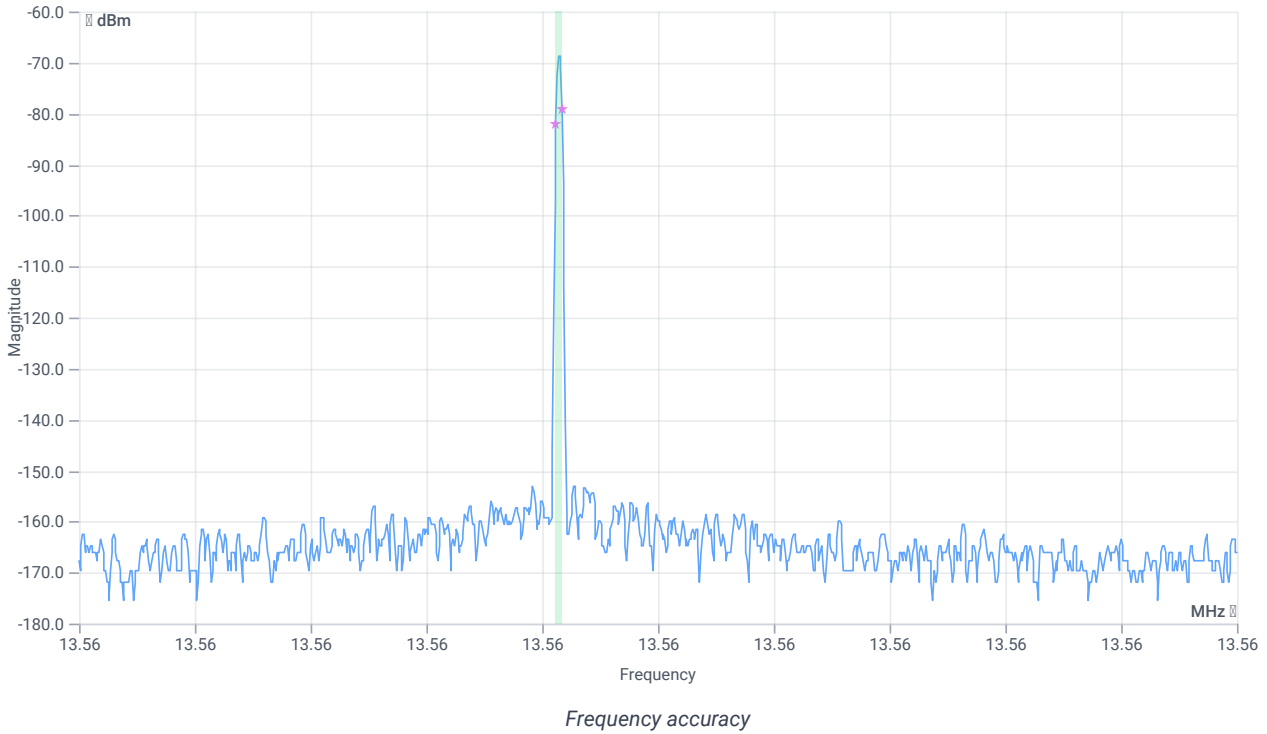
DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	---	---	0.000	MHz	INFO
T1 99%	---	---	13.5595	MHz	INFO
T2 99%	---	---	13.5595	MHz	INFO
F0	---	---	13.559502	MHz	INFO
Ftarget	---	---	13.560000	MHz	INFO
Foffset	---	---	-0.000498	MHz	INFO
Foffset	---	---	-0.498	kHz	INFO
Foffset (abs)	---	100	36.72	ppm	PASS





RESULT Temperature [°C]: 70 | Voltage [V]: 12

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	---	---	0.000	MHz	INFO
T1 99%	---	---	13.5595	MHz	INFO
T2 99%	---	---	13.5595	MHz	INFO
F0	---	---	13.559520	MHz	INFO
Ftarget	---	---	13.560000	MHz	INFO
Foffset	---	---	-0.000480	MHz	INFO
Foffset	---	---	-0.480	kHz	INFO
Foffset (abs)	---	100	35.37	ppm	PASS



RESULT Temperature [°C]: 80 | Voltage [V]: 12

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	---	---	0.000	MHz	INFO
T1 99%	---	---	13.5596	MHz	INFO
T2 99%	---	---	13.5596	MHz	INFO
F0	---	---	13.559573	MHz	INFO
Ftarget	---	---	13.560000	MHz	INFO
Foffset	---	---	-0.000427	MHz	INFO
Foffset	---	---	-0.427	kHz	INFO
Foffset (abs)	---	100	31.47	ppm	PASS

Verdict

INFO

- END OF DOCUMENT -