

Radiated test results

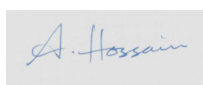
No.23-1-0086301T004a-A6

February 19, 2024

Test Standard(s)

Systems FCC - NI

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Authorized

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Radio Labs

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EUT Information

EUT DEFINITION

Manufacturer	indurad
Type	RADAR sensor
Serial Number	ec467a
Setup Number	NI
Version SW	NI
Version FW	NI
Version HW	NI
Comment 1	
Comment 2	
Temperature [°C] Min	-40
Temperature [°C] Nom	20
Temperature [°C] Max	70
Voltage [V] Min	10
Voltage [V] Nom	24
Voltage [V] Max	35

Systems FCC # Channel Power ~ Channel Power Indurad Radar 76000-81000 MHz

References

TC start	18.08.2023 09:45:09
Ambit temp [°C] humidity [rel%]	not enabled not enabled
System version	4.6.1.0
Standard Version	Systems FCC NI
Method	
Description	Systems FCC Channel power
Information	Cycle Time 1ms but for test 2ms is used

Test Parameter

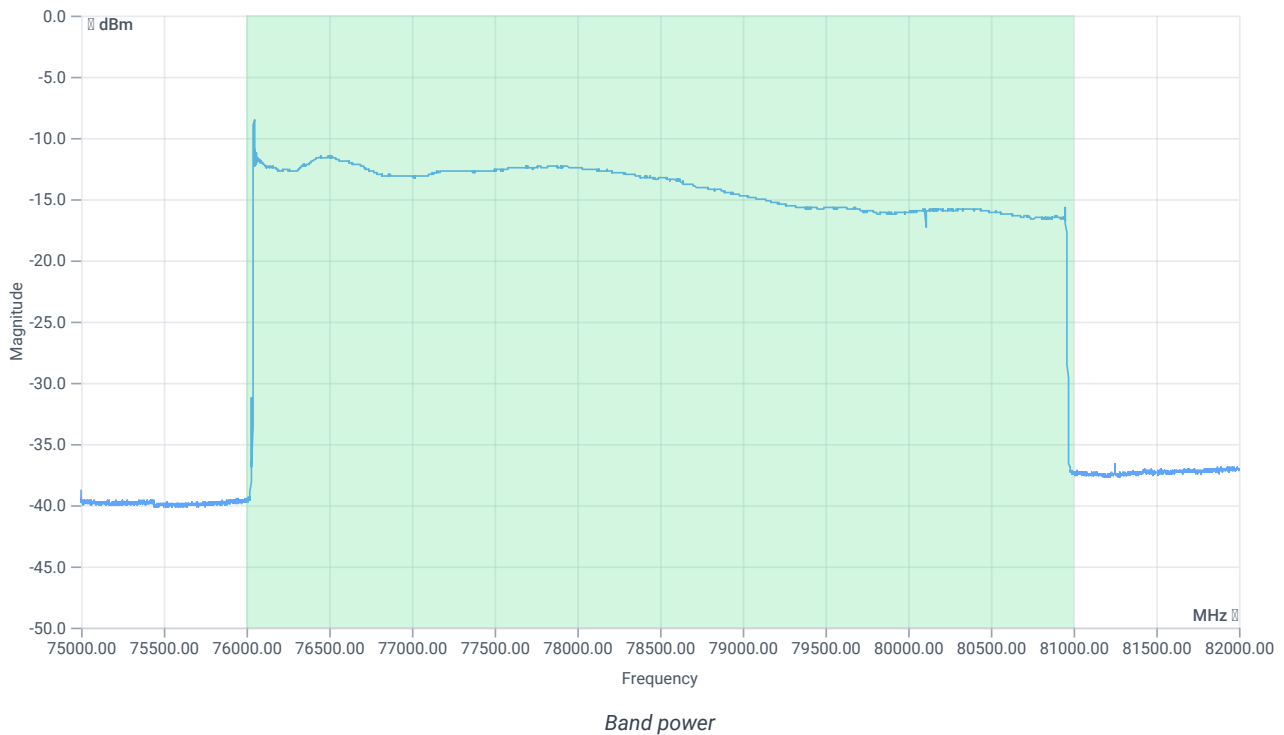
Switched Path	none
Temperature	nom
Voltage	nom
Additional Information	Cycle Time 1ms but for test 2ms is used

Equipment

Signal analyzer,Rohde&Schwarz,FSW-50,1331.5003K50/101332,5.20
Power supply,Agilent Technologies,N5767A,US14J1569P,B.00.06,REV:F

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	10.00 53.7 0
Start [MHz] Stop [MHz]	75000.000 82000.000
RBW [MHz] VBW [MHz]	1.000000 3.000000
Detector TraceMode	RMS MAXH
Sweep: time [ms] count points per Section type	14000 1 7001 SWE



RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Channel Power span	---	---	5000	MHz	INFO
Band Power		50	22.9	dBm	PASS
Band Power	---		194.98446	mW	PASS

Verdict

PASS

Systems FCC # Bandwidth 99pct ~ 99 percent BW Indurad Radar 76000-81000 MHz

References

TC start	18.08.2023 09:45:52
Ambit temp [°C] humidity [rel%]	not enabled not enabled
System version	4.6.1.0
Standard Version	Systems FCC NI
Method	
Description	Systems FCC Bandwidth 99pct
Information	Cycle Time 1ms but for test 2ms is used

Test Parameter

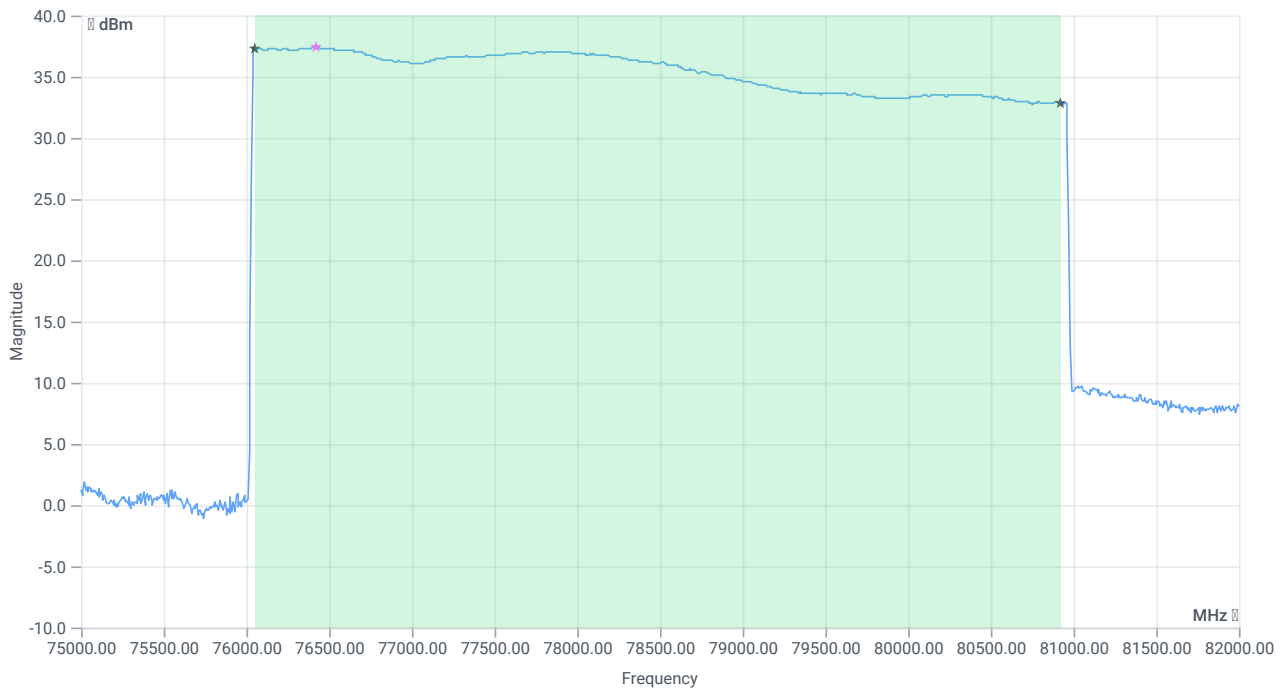
Switched Path	none
Temperature	nom
Voltage	nom
Additional Information	Cycle Time 1ms but for test 2ms is used

Equipment

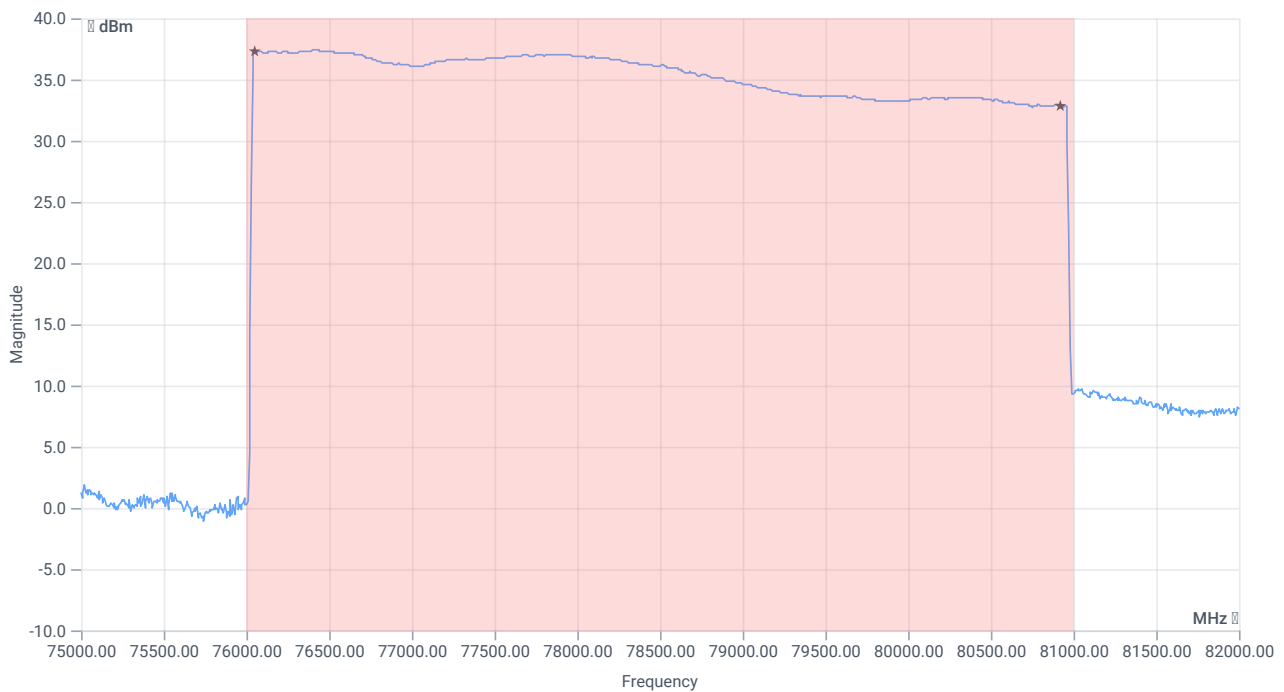
Signal analyzer,Rohde&Schwarz,FSW-50,1331.5003K50/101332,5.20
Power supply,Agilent Technologies,N5767A,US14J1569P,B.00.06,REV:F

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	45.00 53.7 2
Start [MHz] Stop [MHz]	75000.000 82000.000
RBW [MHz] VBW [MHz]	10.000000 28.000000
Detector TraceMode	POS MAXH
Sweep: time [ms] count points per Section type	2000 1 1001 SWE



BW 99PCT



BW within Band 99PCT

RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	---	---	4866.34	MHz	INFO
T1 99%	76000.00	---	76052.84	MHz	PASS

RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
T2 99%	---	81000.00	80919.18	MHz	PASS
Max value @ 76423.1 MHz	---	---	37.42	dBm	INFO

Verdict

PASS

Systems FCC # Bandwidth 20dB ~ 20 dB BW Indurad Radar 76000-81000 MHz

References

TC start	18.08.2023 09:46:11
Ambit temp [°C] humidity [rel%]	not enabled not enabled
System version	4.6.1.0
Standard Version	Systems FCC NI
Method	
Description	Systems FCC Bandwidth 20dB
Information	Cycle Time 1ms but for test 2ms is used

Test Parameter

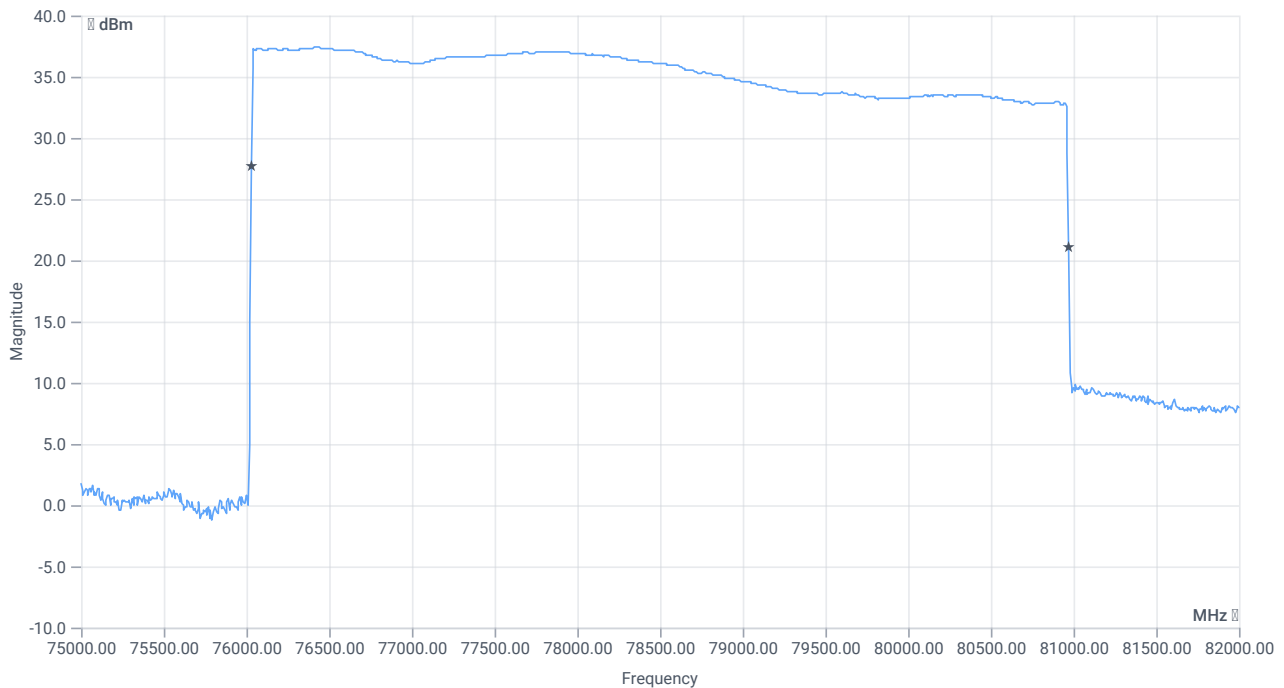
Switched Path	none
Temperature	nom
Voltage	nom
Additional Information	Cycle Time 1ms but for test 2ms is used

Equipment

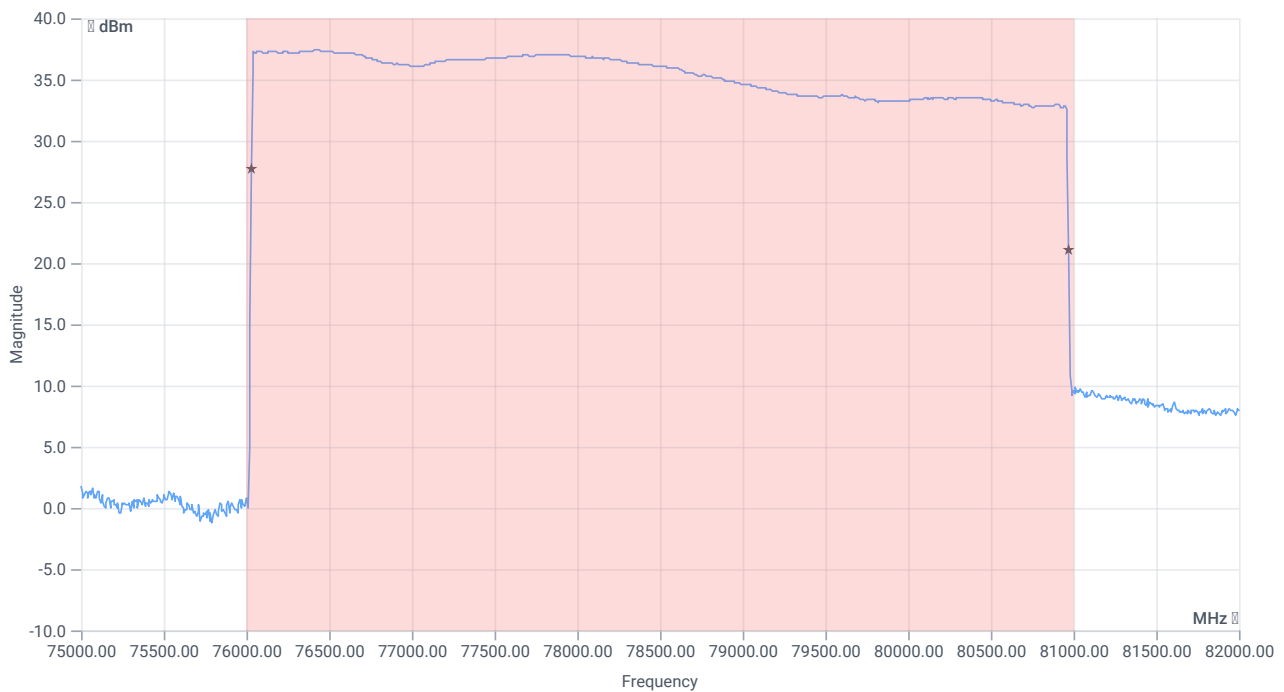
Signal analyzer,Rohde&Schwarz,FSW-50,1331.5003K50/101332,5.20
Power supply,Agilent Technologies,N5767A,US14J1569P,B.00.06,REV:F

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	45.00 53.7 2
Start [MHz] Stop [MHz]	75000.000 82000.000
RBW [MHz] VBW [MHz]	10.000000 28.000000
Detector TraceMode	POS MAXH
Sweep: time [ms] count points per Section type	2000 1 1001 SWE



BW 20dB



BW within Band 20dB

RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 20dB	---	---	4942	MHz	INFO
T1 20dB	76000.000000	---	76029.0000	MHz	PASS

RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
T2 20dB	--	81000.000000	80971.0000	MHz	PASS

Verdict

PASS

Systems FCC # Peak Power ~ Peak Power Indurad Radar 76000-81000 MHz

References

TC start	18.08.2023 09:46:29
Ambit temp [°C] humidity [rel%]	not enabled not enabled
System version	4.6.1.0
Standard Version	Systems FCC NI
Method	
Description	Systems FCC Peak power
Information	Cycle Time 1ms but for test 2ms is used

Test Parameter

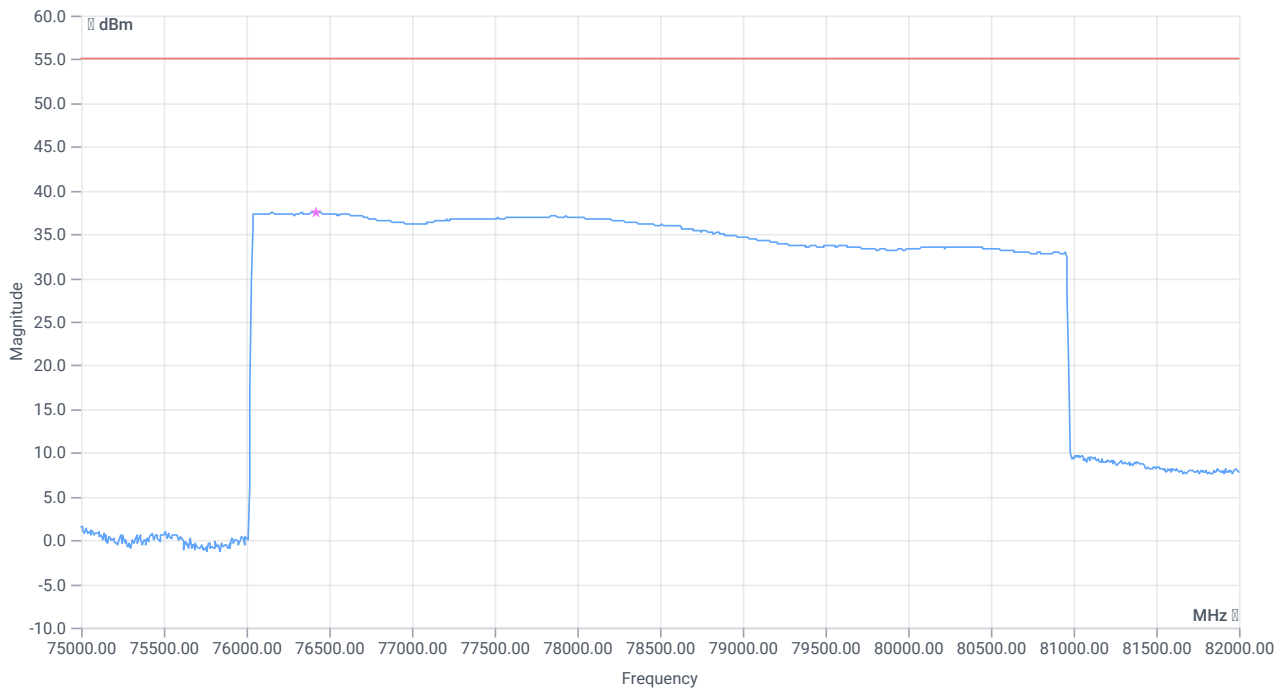
Switched Path	none
Temperature	nom
Voltage	nom
Additional Information	Cycle Time 1ms but for test 2ms is used

Equipment

Signal analyzer,Rohde&Schwarz,FSW-50,1331.5003K50/101332,5.20
Power supply,Agilent Technologies,N5767A,US14J1569P,B.00.06,REV:F

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	45.00 53.7 2
Start [MHz] Stop [MHz]	75000.000 82000.000
RBW [MHz] VBW [MHz]	10.000000 28.000000
Detector TraceMode	POS MAXH
Sweep: time [ms] count points per Section type	2000 1 1001 SWE



RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Peak Power	---	55	37.51	dBm	PASS
Peak Power	---		5636.376558	mW	PASS
Frequency at Peak	---	---	76423.1	MHz	INFO

Verdict

PASS

Frequency stability over temperature & voltage

References

TC start	17.08.2023 18:04:25
Ambit temp [°C] humidity [rel%]	not enabled not enabled
System version	4.6.1.0
Standard Version	Systems FCC NI
Method	
Description	Systems FCC Freq stability over temp/volt
Information	

Test Parameter

Test Parameter

Switched Path	none
Temp Variation enabled Voltage Variation enabled	Yes Yes
Additional Information	

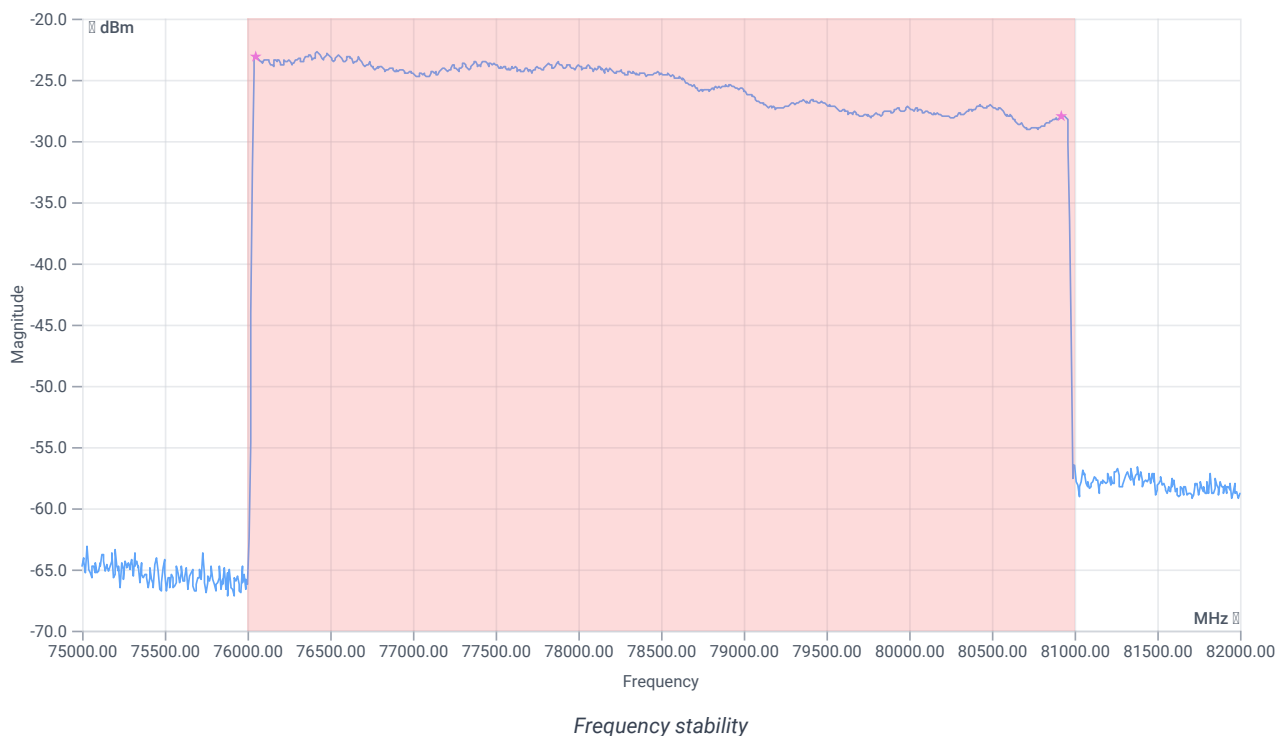
Equipment

Signal analyzer,Rohde&Schwarz,FSW-50,1331.5003K50/101332,5.20
Power supply,Agilent Technologies,N5767A,US14J1569P,B.00.06,REV:F
Climatic box,CTS T40/50,58566046820010,NI

Test for Temperature[°C]: 20 | Voltage [V]: 24

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	-11.20 0 0
Start [MHz] Stop [MHz]	75000.000 82000.000
RBW [MHz] VBW [MHz]	10.000000 28.000000
Detector TraceMode	POS MAXH
Sweep: time [ms] count points per Section type	14000 1 1001 SWE



RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	---	---	4865.906	MHz	INFO

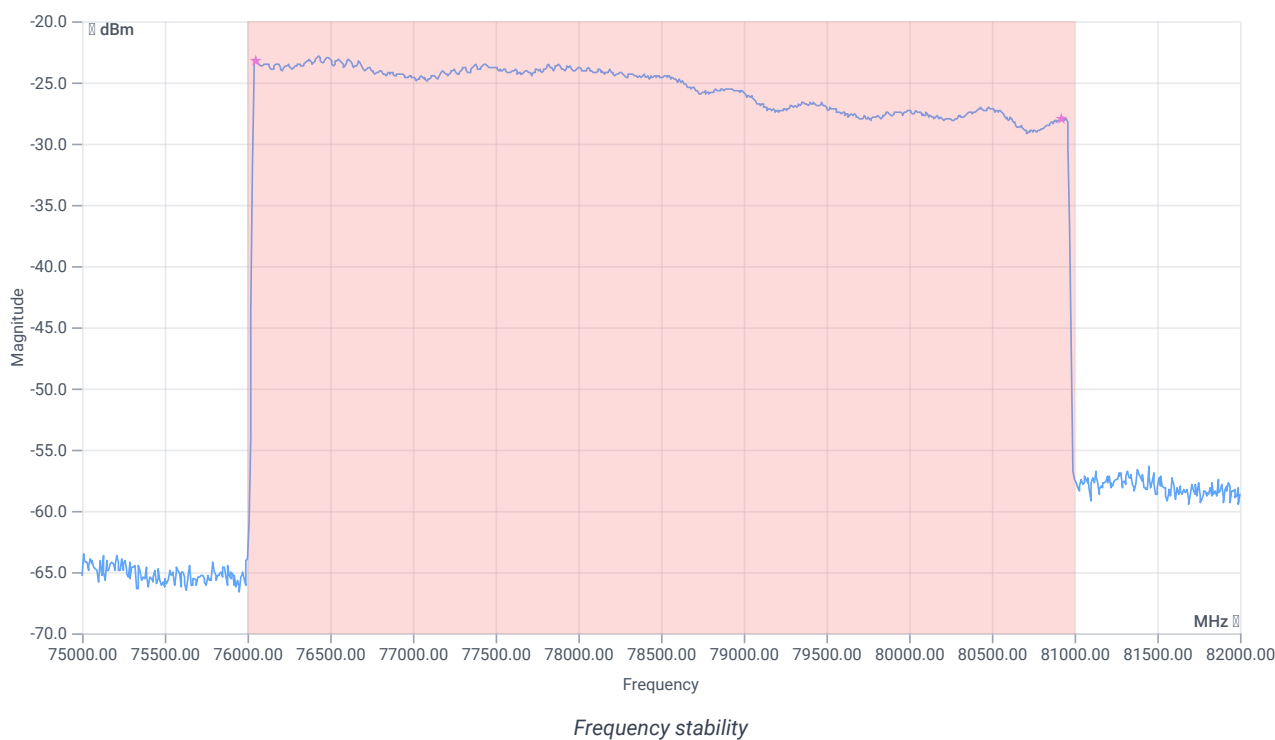
RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
T1 99%	76000	---	76050.8770	MHz	PASS
T2 99%	---	81000	80916.7833	MHz	PASS

Test for Temperature[°C]: 20 | Voltage [V]: 20.4

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	-11.20 0 0
Start [MHz] Stop [MHz]	75000.000 82000.000
RBW [MHz] VBW [MHz]	10.000000 28.000000
Detector TraceMode	POS MAXH
Sweep: time [ms] count points per Section type	14000 1 1001 SWE



RESULT

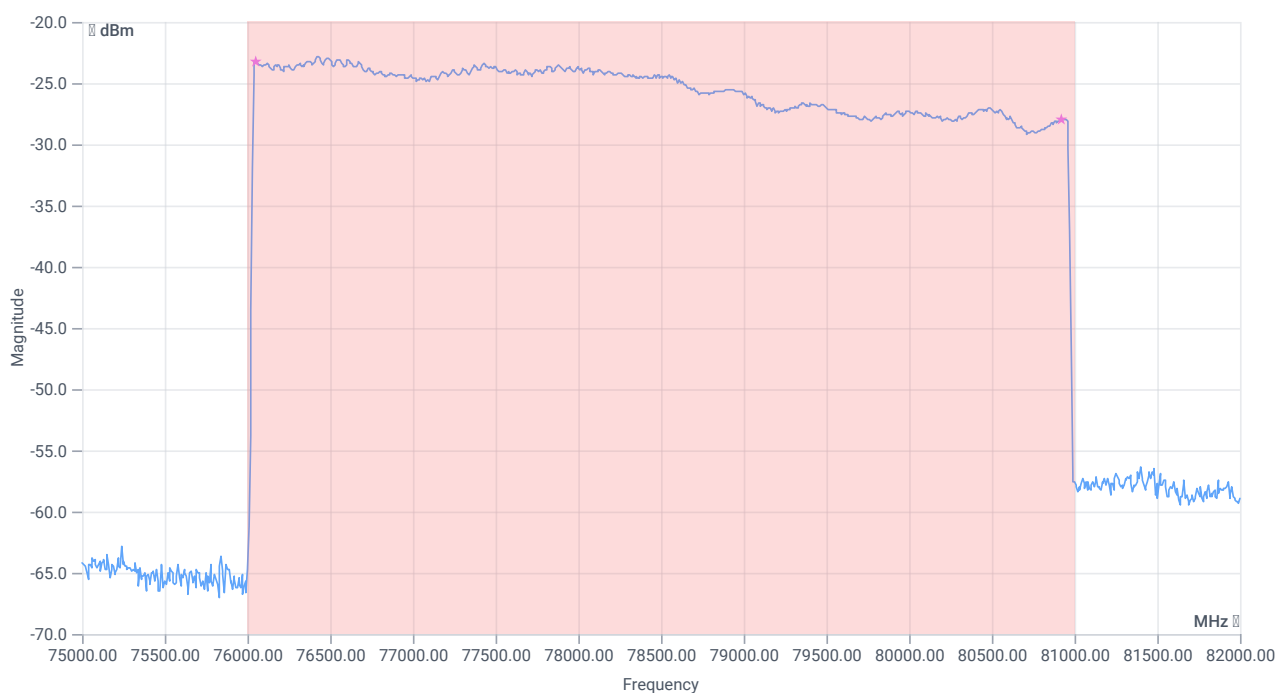
DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	---	---	4866.207	MHz	INFO
T1 99%	76000	---	76050.8678	MHz	PASS
T2 99%	---	81000	80917.0747	MHz	PASS

Test for Temperature[°C]: 20 | Voltage [V]: 27.6

READ SA SETTINGS:

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	-11.20 0 0
Start [MHz] Stop [MHz]	75000.000 82000.000
RBW [MHz] VBW [MHz]	10.000000 28.000000
Detector TraceMode	POS MAXH
Sweep: time [ms] count points per Section type	14000 1 1001 SWE



Frequency stability

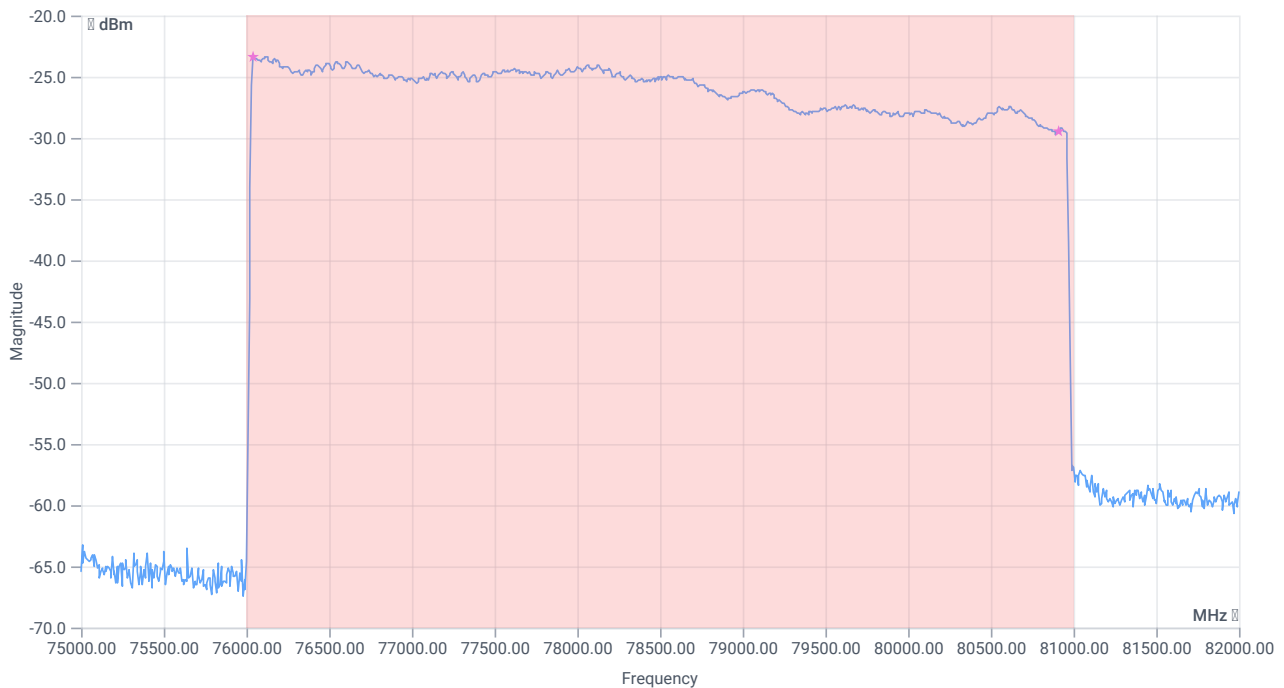
RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	---	---	4866.192	MHz	INFO
T1 99%	76000	---	76051.0698	MHz	PASS
T2 99%	---	81000	80917.2615	MHz	PASS

Test for Temperature[°C]: -20 | Voltage [V]: 24

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	-11.20 0 0
Start [MHz] Stop [MHz]	75000.000 82000.000
RBW [MHz] VBW [MHz]	10.000000 28.000000
Detector TraceMode	POS MAXH
Sweep: time [ms] count points per Section type	14000 1 1001 SWE



Frequency stability

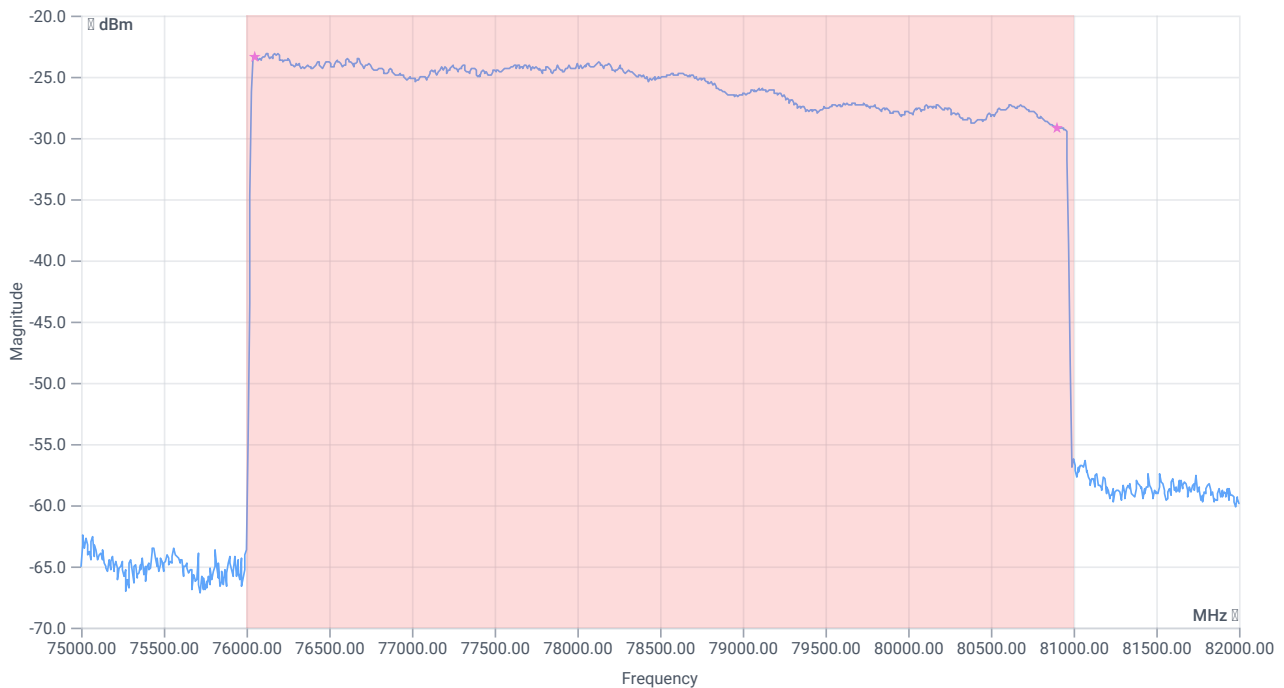
RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	---	---	4862.664	MHz	INFO
T1 99%	76000	---	76044.2548	MHz	PASS
T2 99%	---	81000	80906.9185	MHz	PASS

Test for Temperature[°C]: -10 | Voltage [V]: 24

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	-11.20 0 0
Start [MHz] Stop [MHz]	75000.000 82000.000
RBW [MHz] VBW [MHz]	10.000000 28.000000
Detector TraceMode	POS MAXH
Sweep: time [ms] count points per Section type	14000 1 1001 SWE



Frequency stability

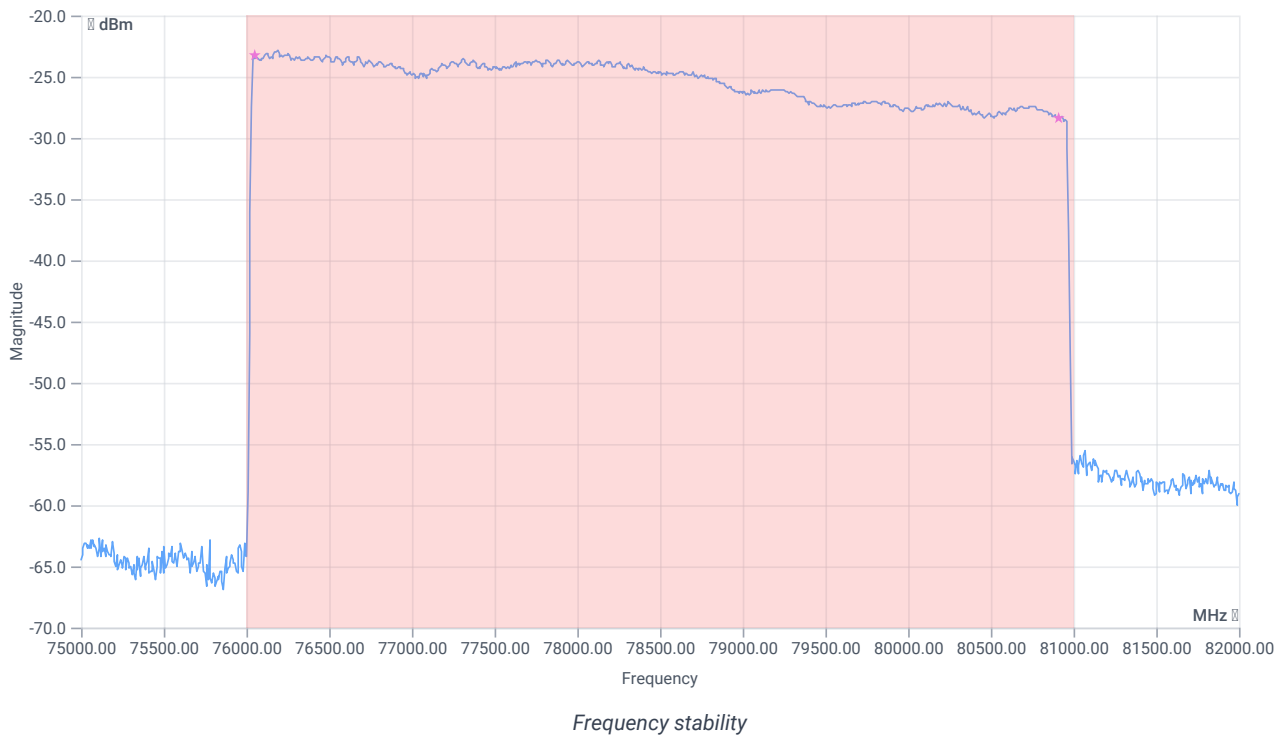
RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	---	---	4858.995	MHz	INFO
T1 99%	76000	---	76045.9029	MHz	PASS
T2 99%	---	81000	80904.8982	MHz	PASS

Test for Temperature[°C]: 0 | Voltage [V]: 24

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	-11.20 0 0
Start [MHz] Stop [MHz]	75000.000 82000.000
RBW [MHz] VBW [MHz]	10.000000 28.000000
Detector TraceMode	POS MAXH
Sweep: time [ms] count points per Section type	14000 1 1001 SWE



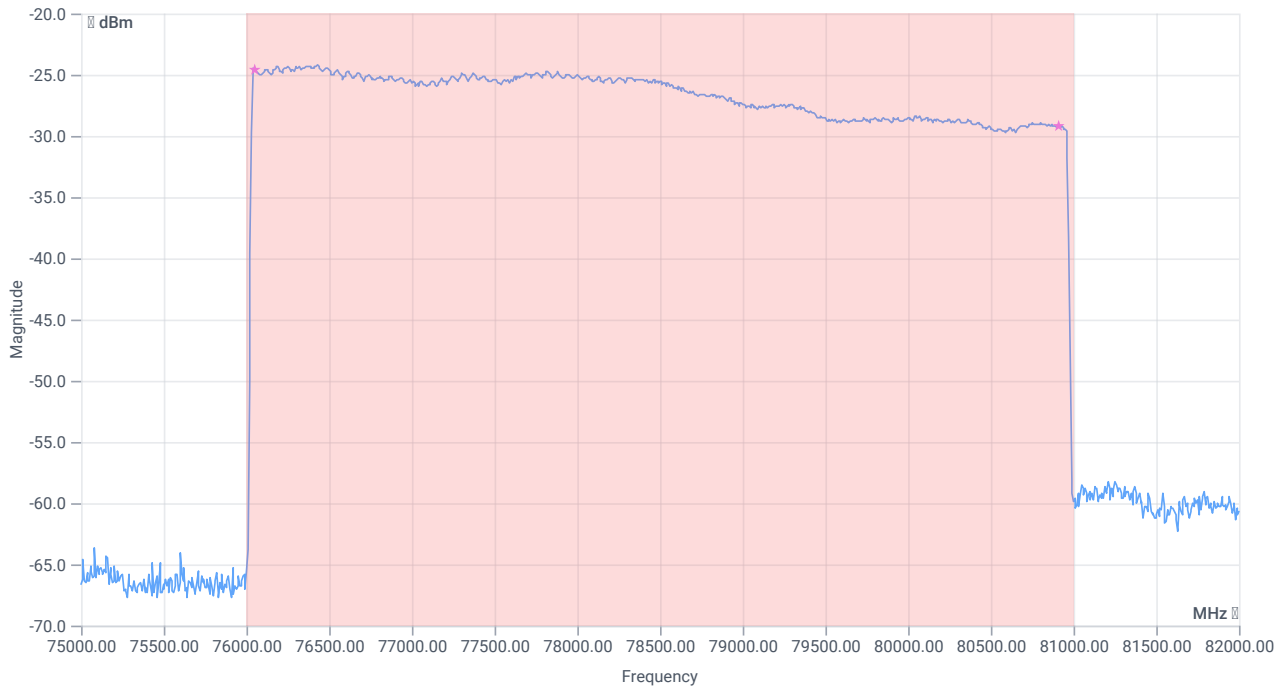
RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	---	---	4862.802	MHz	INFO
T1 99%	76000	---	76047.9492	MHz	PASS
T2 99%	---	81000	80910.7513	MHz	PASS

Test for Temperature[°C]: 10 | Voltage [V]: 24

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	-11.20 0 0
Start [MHz] Stop [MHz]	75000.000 82000.000
RBW [MHz] VBW [MHz]	10.000000 28.000000
Detector TraceMode	POS MAXH
Sweep: time [ms] count points per Section type	14000 1 1001 SWE



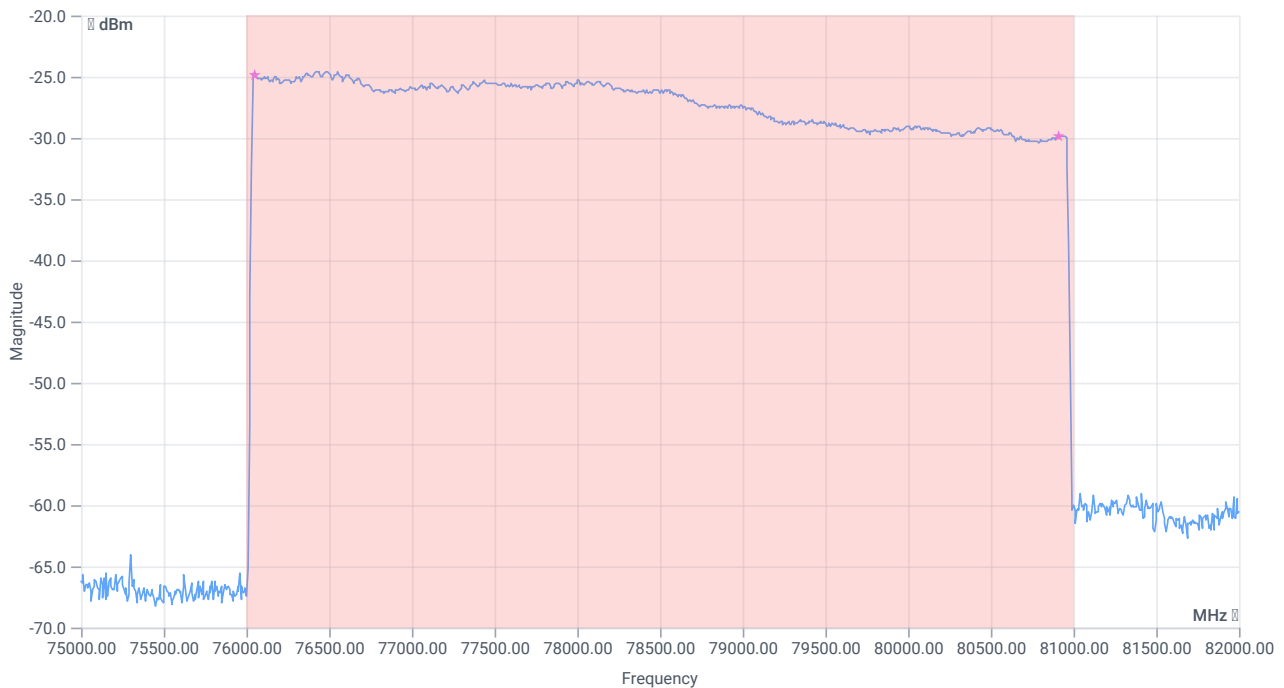
RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	---	---	4865.810	MHz	INFO
T1 99%	76000	---	76049.0360	MHz	PASS
T2 99%	---	81000	80914.8461	MHz	PASS

Test for Temperature[°C]: 20 | Voltage [V]: 24

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	-11.20 0 0
Start [MHz] Stop [MHz]	75000.000 82000.000
RBW [MHz] VBW [MHz]	10.000000 28.000000
Detector TraceMode	POS MAXH
Sweep: time [ms] count points per Section type	14000 1 1001 SWE



Frequency stability

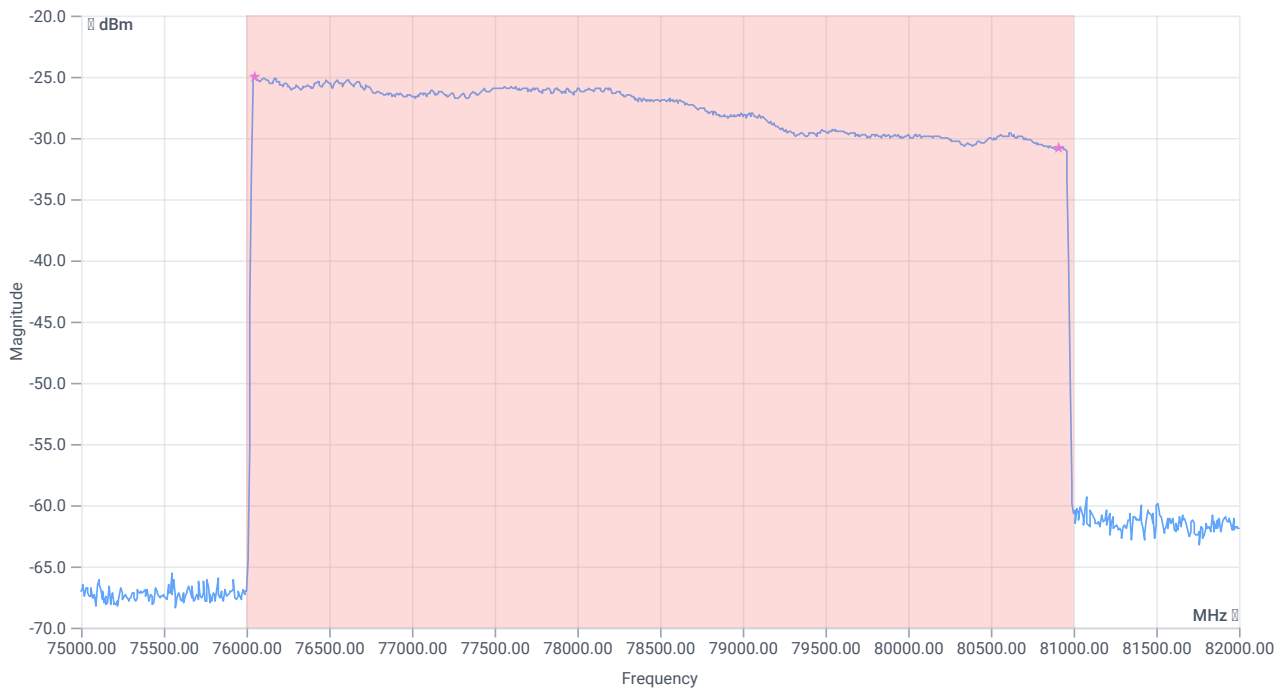
RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	---	---	4864.937	MHz	INFO
T1 99%	76000	---	76049.8378	MHz	PASS
T2 99%	---	81000	80914.7744	MHz	PASS

Test for Temperature[°C]: 30 | Voltage [V]: 24

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	-11.20 0 0
Start [MHz] Stop [MHz]	75000.000 82000.000
RBW [MHz] VBW [MHz]	10.000000 28.000000
Detector TraceMode	POS MAXH
Sweep: time [ms] count points per Section type	14000 1 1001 SWE



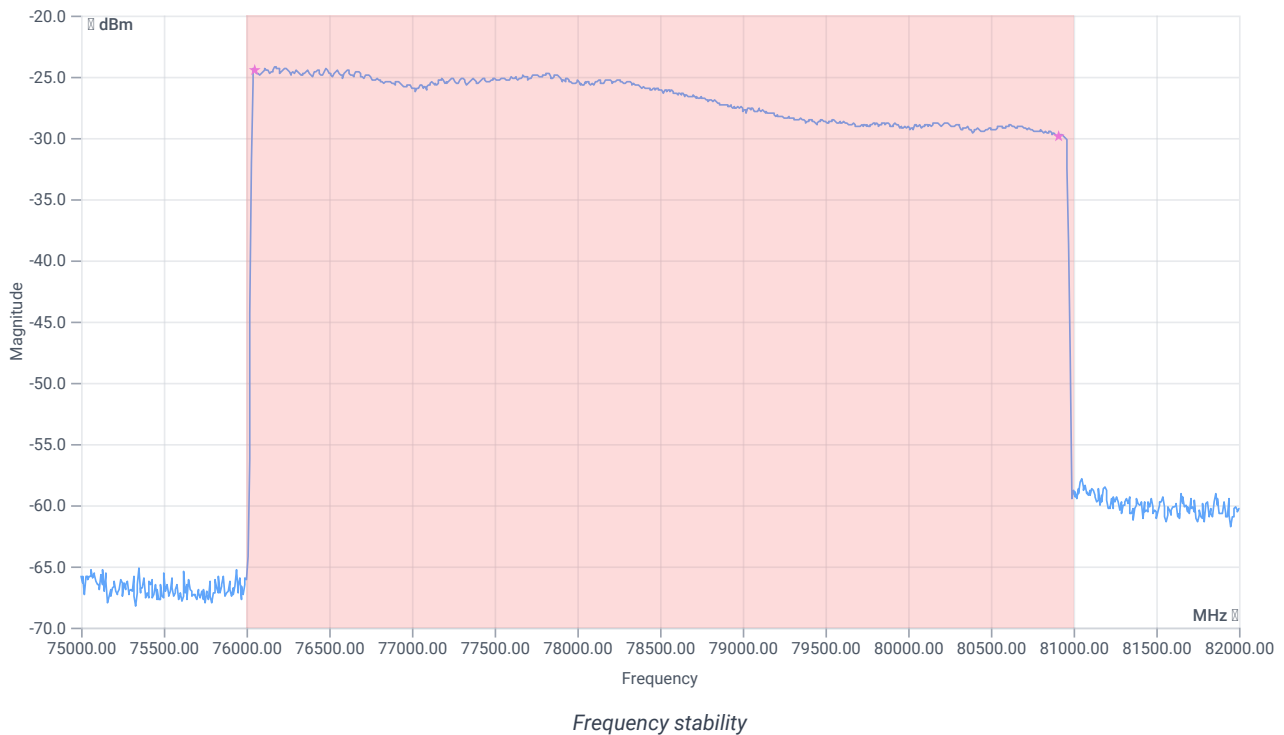
RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	---	---	4859.456	MHz	INFO
T1 99%	76000	---	76049.0117	MHz	PASS
T2 99%	---	81000	80908.4680	MHz	PASS

Test for Temperature[°C]: 40 | Voltage [V]: 24

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	-11.20 0 0
Start [MHz] Stop [MHz]	75000.000 82000.000
RBW [MHz] VBW [MHz]	10.000000 28.000000
Detector TraceMode	POS MAXH
Sweep: time [ms] count points per Section type	14000 1 1001 SWE



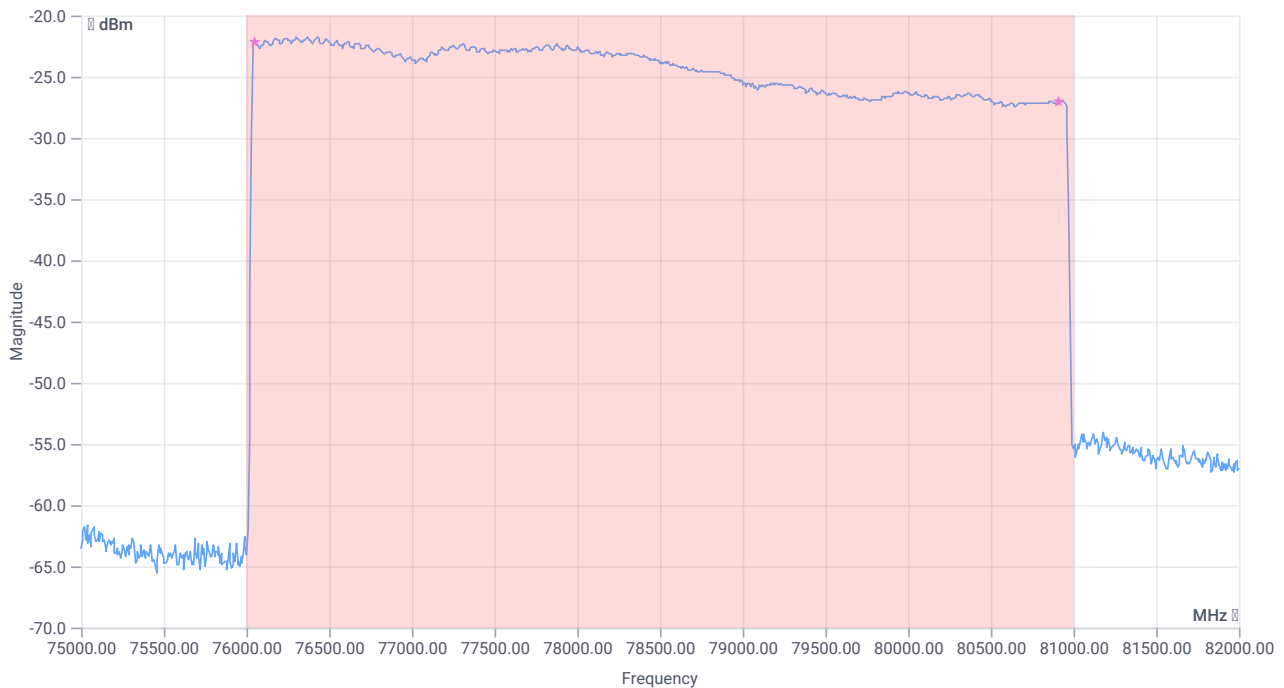
RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	---	---	4859.633	MHz	INFO
T1 99%	76000	---	76050.2208	MHz	PASS
T2 99%	---	81000	80909.8539	MHz	PASS

Test for Temperature[°C]: 50 | Voltage [V]: 24

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	-11.20 0 0
Start [MHz] Stop [MHz]	75000.000 82000.000
RBW [MHz] VBW [MHz]	10.000000 28.000000
Detector TraceMode	POS MAXH
Sweep: time [ms] count points per Section type	14000 1 1001 SWE



Frequency stability

RESULT

DESCRIPTION	LOWER LIMIT	UPPER LIMIT	MEASURED	UNIT	VERDICT
Bandwidth 99%	---	---	4864.648	MHz	INFO
T1 99%	76000	---	76050.2710	MHz	PASS
T2 99%	---	81000	80914.9191	MHz	PASS

Verdict

PASS

- END OF DOCUMENT -