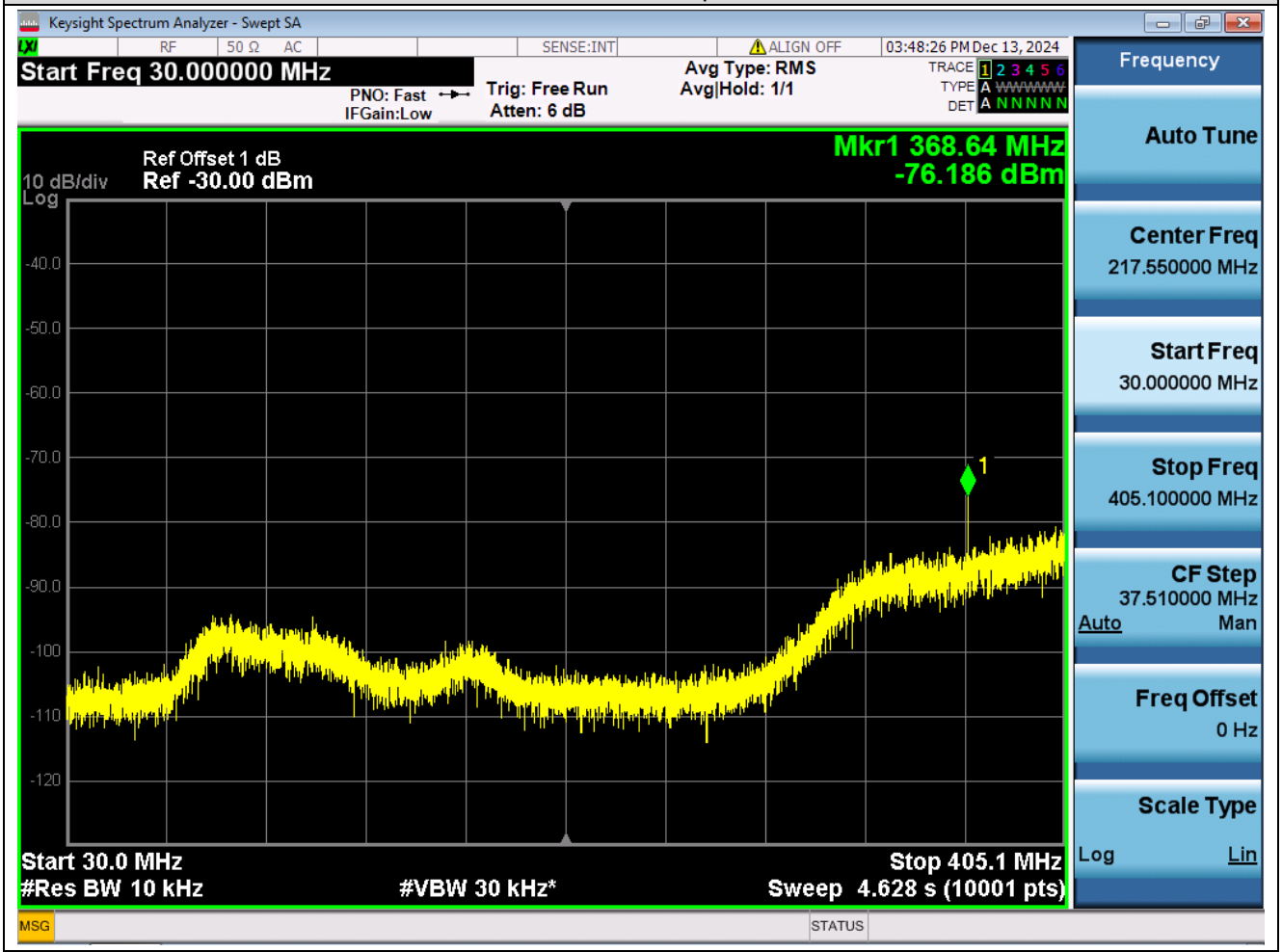
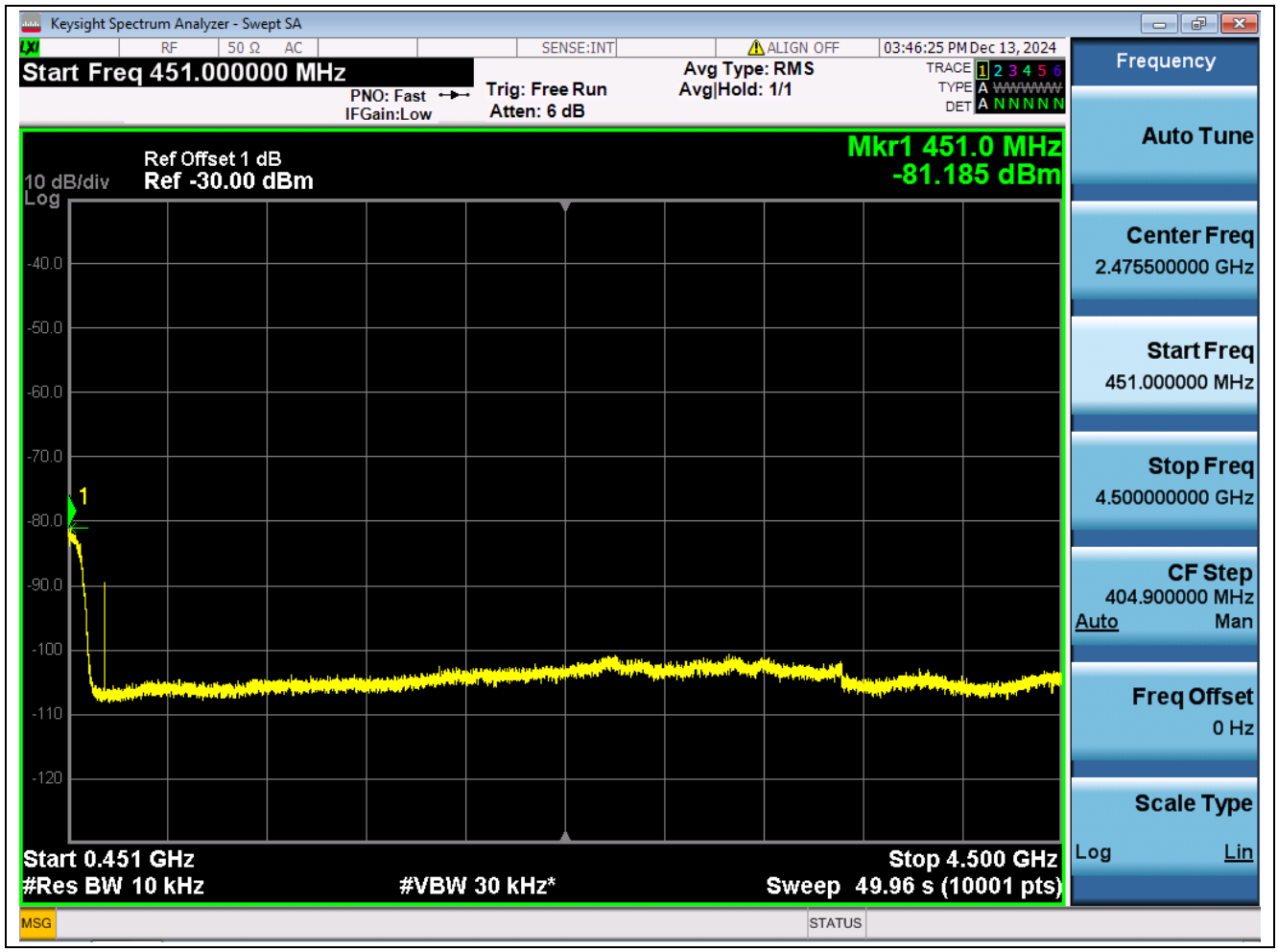
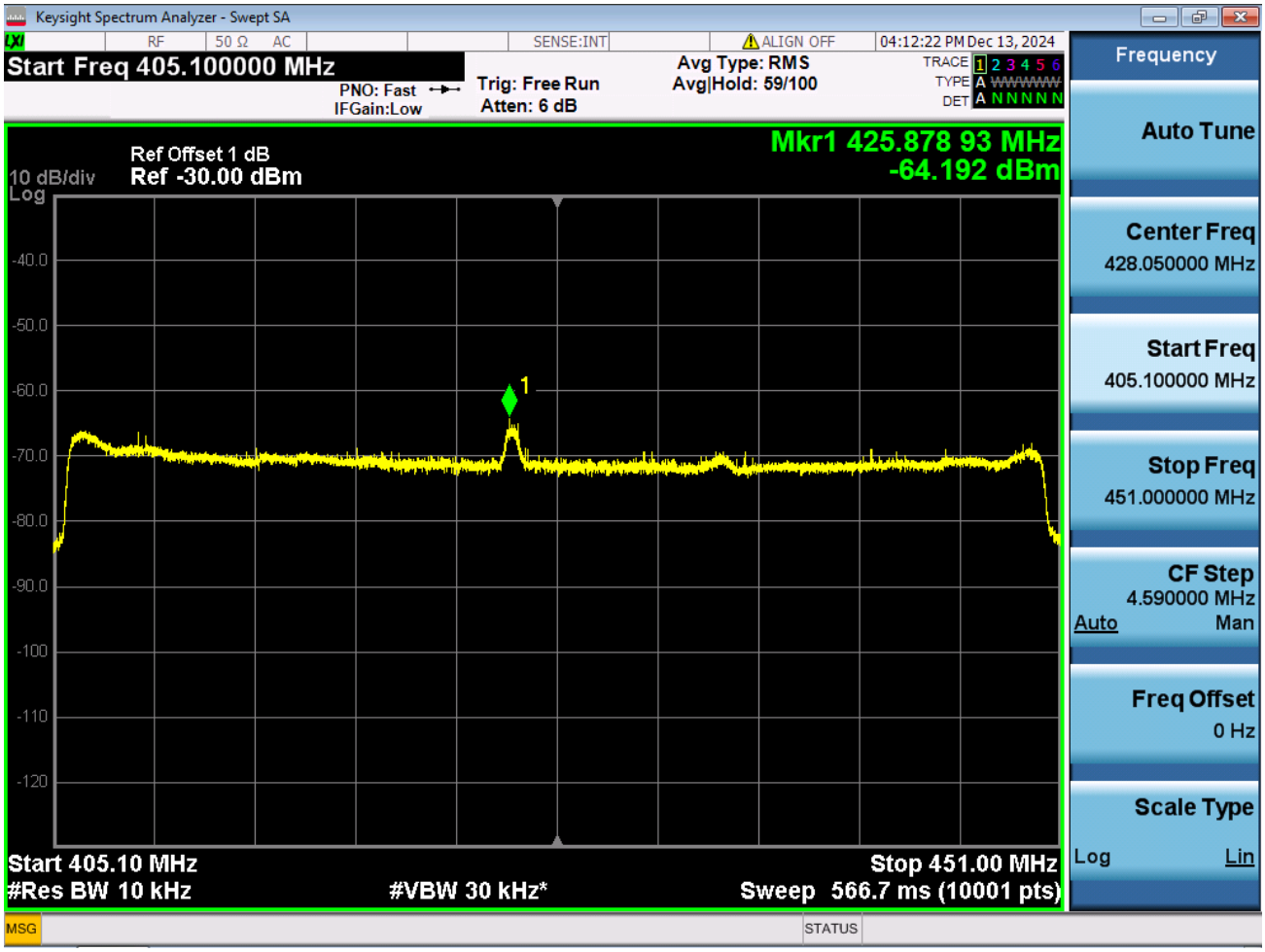
Appendix I for Noise

Noise outside of the passband

Noise outside of the passband


Keysight Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN OFF
03:46:25 PM Dec 13, 2024
Start Freq 451.000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: RMS
Avg|Hold: 1/1
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Ref Offset 1 dB
10 dB/div
Log
Ref -30.00 dBm
Mkr1 451.0 MHz
-81.185 dBm
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100
-110
-120
1
Start 0.451 GHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 4.500 GHz
Sweep 49.96 s (10001 pts)
Frequency
Auto Tune
Center Freq
2.475500000 GHz
Start Freq
451.000000 MHz
Stop Freq
4.500000000 GHz
CF Step
404.900000 MHz
Auto
Man
Freq Offset
0 Hz
Scale Type
Log
Lin
MSG
STATUS

Noise within the passband



Remark:

According to the declaration from the application, the single antenna gain should not exceed 0dBi, the Directional gain = G(ANT) + 10*log (NANT) dBi = 0dBi +10*log (1) dBi = 0dBi.

ERP = EIRP-2.15dB

The conducted max noise on spectrum more than 1MHz outside of the passband is -76.186dBm/10kHz, ERP of noise on spectrum more than 1MHz outside of the passband is -76.186dBm/10kHz + 0dBi -2.15dB = -78.336dBm/10kHz

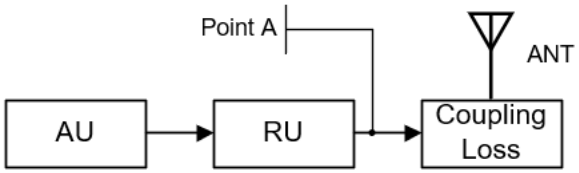
The conducted max noise within the passband is -64.192dBm/10kHz, ERP of noise within the passband is -64.192dBm/10kHz + 0dBi -2.15dB = -62.042dBm/10kHz < -43dBm/10kHz

Applicant must use good engineering practice to make sure that the ERP of max noise on spectrum more than 1MHz outside of the passband should not exceed the level -70dBm in 10kHz measurement bandwidth.

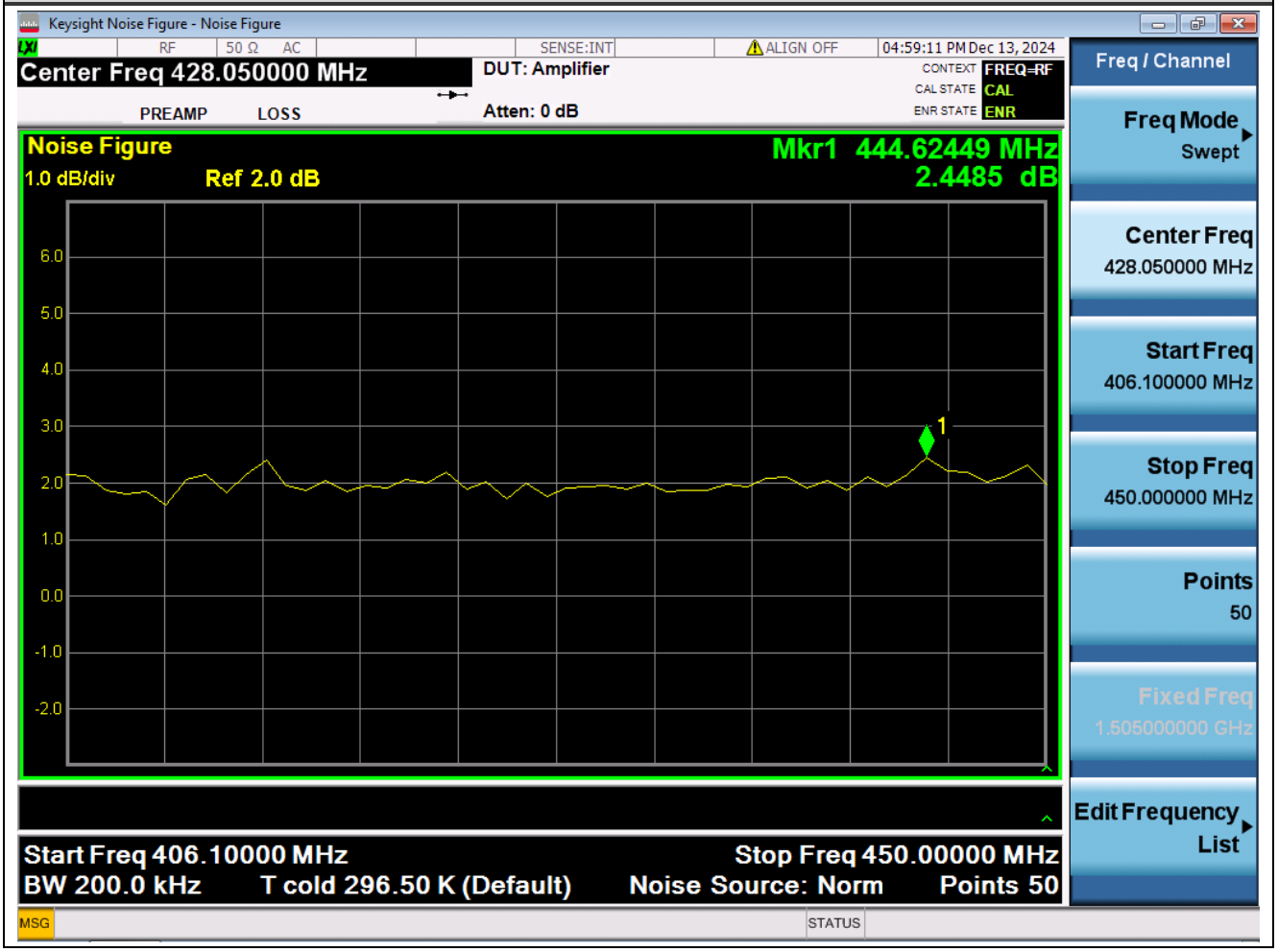
Frequency Range (MHz)	Max Noise Figure	Max Noise Figure Limit
406.1 ~ 450	2.4485	9

Remark:

The noise test results in the table are measured from point A. The test results plus the coupling loss and antenna gain will meet the noise radiation requirements of the signal booster, which is that the ERP of noise should not exceed −43 dBm in 10 kHz within passband and -70 dBm in 10 kHz more than 1 MHz outside of passband.



Setting details were declared by manufacture and stated in the user manual.
The test screenshots below are only to record the case without engineering practice for reference.

Noise Figure:
406.1MHz to 450MHz

Noise Figure