

Translator K260CU 99.9FM

Spurious Emissions Report

On the Afternoon of August 14th 2023, I Scot W. Mathews made equipment performance measurements on behalf of translator station 99.9 FM Boise, Idaho. These measurements were made as a condition of the Construction Permit File Number 0000189212

99.9 (FM) is one of three stations (98.7 & 101.9) sharing a master antenna system at the transmitter facility known as Deer Creek, east of Boise, Idaho. The outputs of the three stations are combined using a low power branched combiner system Model C-CI-4-2K-N designed and fabricated by American Amplifier Technologies.

Measurements were made while all stations were broadcasting program material typical to its daily operation. 99.9 (FM) operates stereophonically and has no subsidiary communications services. All stations were operating into the combined antenna system at the full permitted power during the measurements.

FCC Rules and Regulations Section 73.317 (b) and (c) require that all signals between 120 and 240 kHz removed from the carrier be attenuated below the level of the carrier by at least 25 dB, all signals between 240 kHz and 600 kHz removed from the carrier be attenuated by at least 35 dB below the level of the carrier, and that all signals greater than 600 kHz removed from the carrier be attenuated by at least 80 dB below the level of the carrier.

In the case of the 99.9 (FM) transmission system, the measurement equipment was fed by a directional coupler at the combined output. Measurements were made on the station's carrier frequency for reference purposes and to look at occupied bandwidth for any spurious emissions. The use of a IFR AN940 Serial Number 1009 spectrum analyzer was used to make all measurements. The assigned carrier frequency level was recorded. All other harmonic intermodulation product or spurious emission levels were referenced to this initial carrier frequency reference level. The radio spectrum from 50 MHz up to the stations 10th carrier frequency harmonic was tuned to look for any unusual emissions. (See exhibits)

A tunable Trilithic filter set was used and tuned to each frequency to assure minimal intermodulation elements from being introduced into the measurement.

The intermodulation products measured in this report were calculated as the common $2 \times A - B$ = intermodulation product. As in the case herein the carrier frequency of the station under test was multiplied times 2 and then the carrier frequency of the each of the combined individual stations was subtracted one at a time from the $2X$ sum to find the common intermodulation product.

No unusual spurious emissions, carrier frequency harmonics or intermodulation products were noted on the main transmission system for station 99.9 (FM).

No unusual spurious emissions, harmonics or intermodulation products were detected.

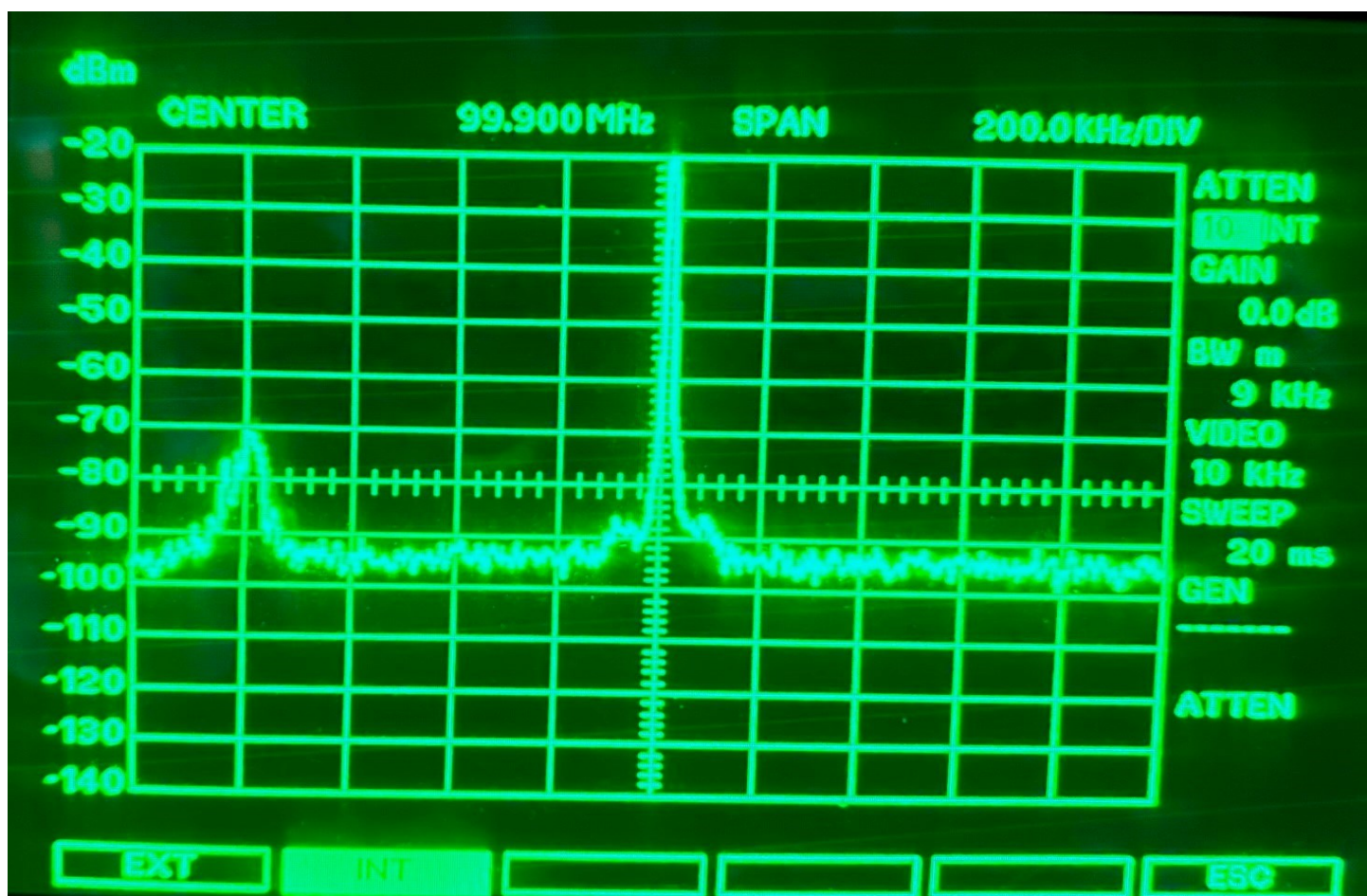
With regards to the 99.9 (FM) transmission system, I believe that the station is in compliance with the requirements of Section 73.317. This report was prepared by me and is based on measurements made by myself. I believe them to be true and accurate to the best of my knowledge.

Respectfully Submitted,

A handwritten signature in black ink that reads "Scot W. Mathews". The signature is written in a cursive, flowing style.

Scot Mathews
Consulting Engineer

Additional Notes: NONE



dBm

CENTER 299.700 MHz

SPAN

200.0 kHz/DIV

ATTEN

10 dB

GAIN

0.0 dB

BW m

9 kHz

VIDEO

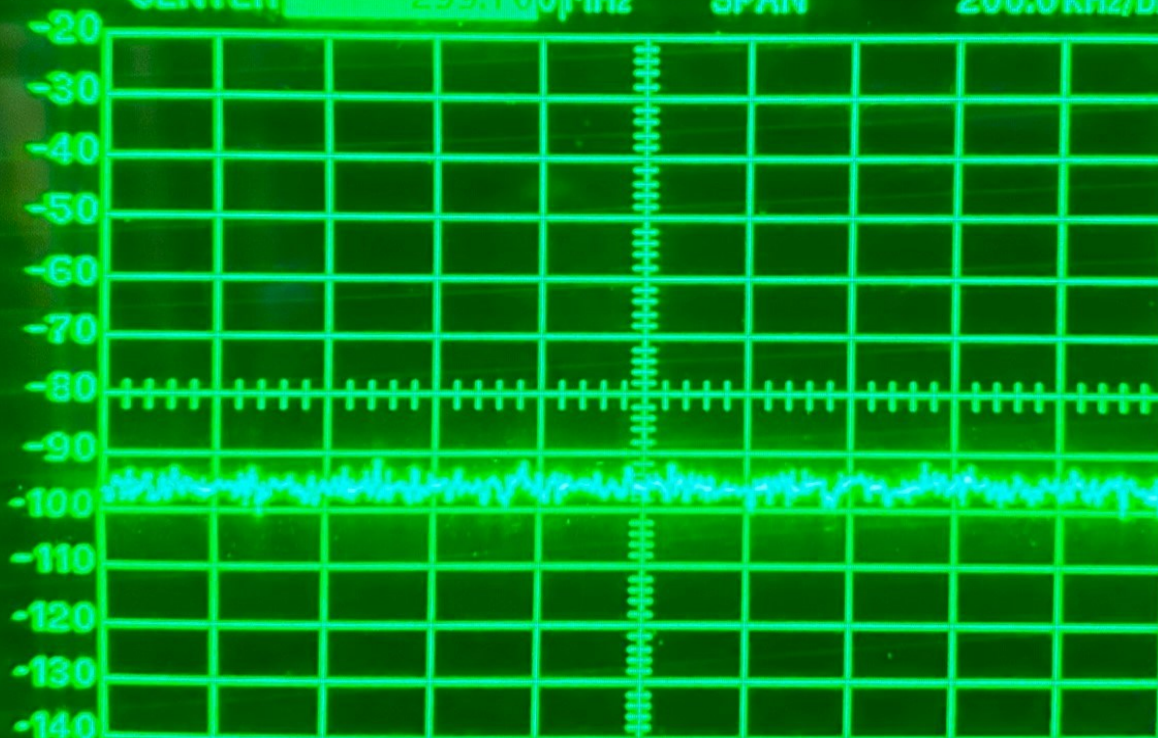
10 kHz

SWEEP

20 ms

GEN

CENTER



FIND

FIND LVL

PREV

dBm

CENTER 399.600 MHz

SPAN

200.0 kHz/DIV

ATTEN

10 dB

GAIN

0.0 dB

BW m

9 kHz

VIDEO

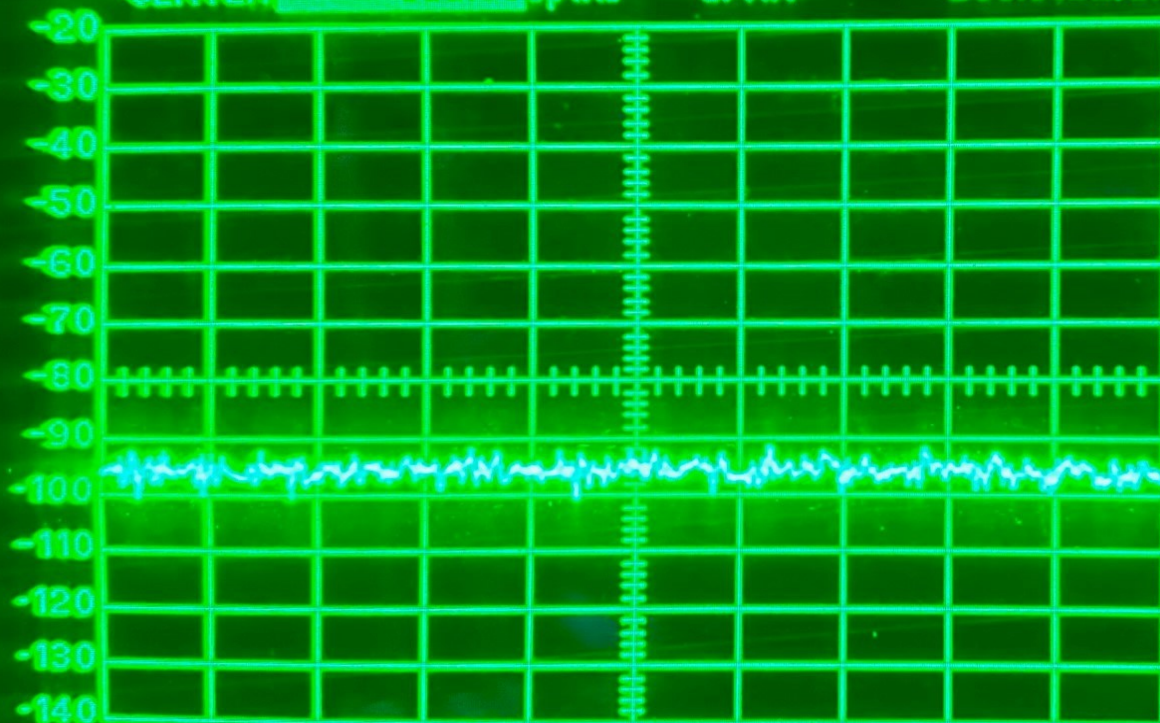
10 kHz

SWEEP

20 ms

GEN

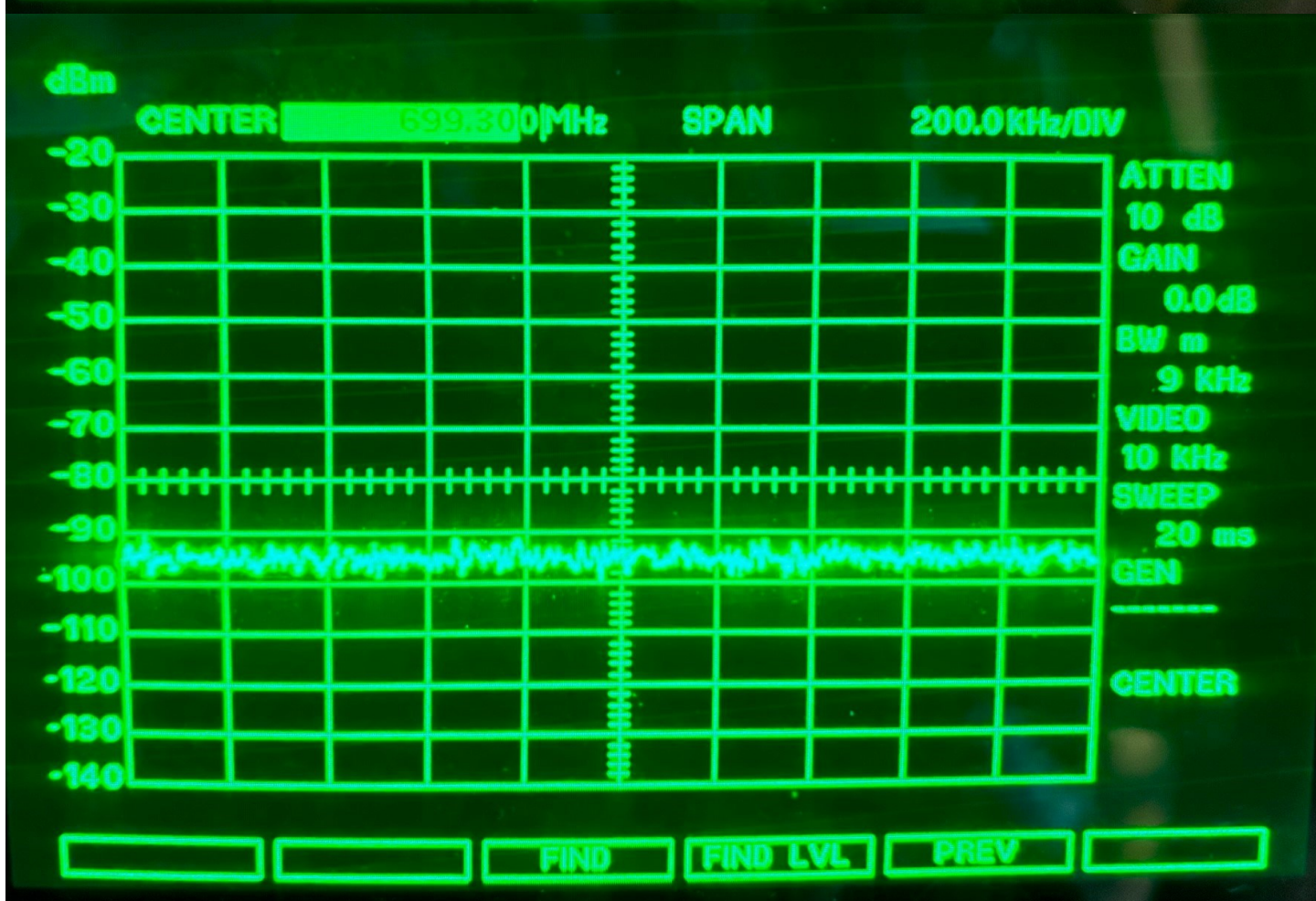
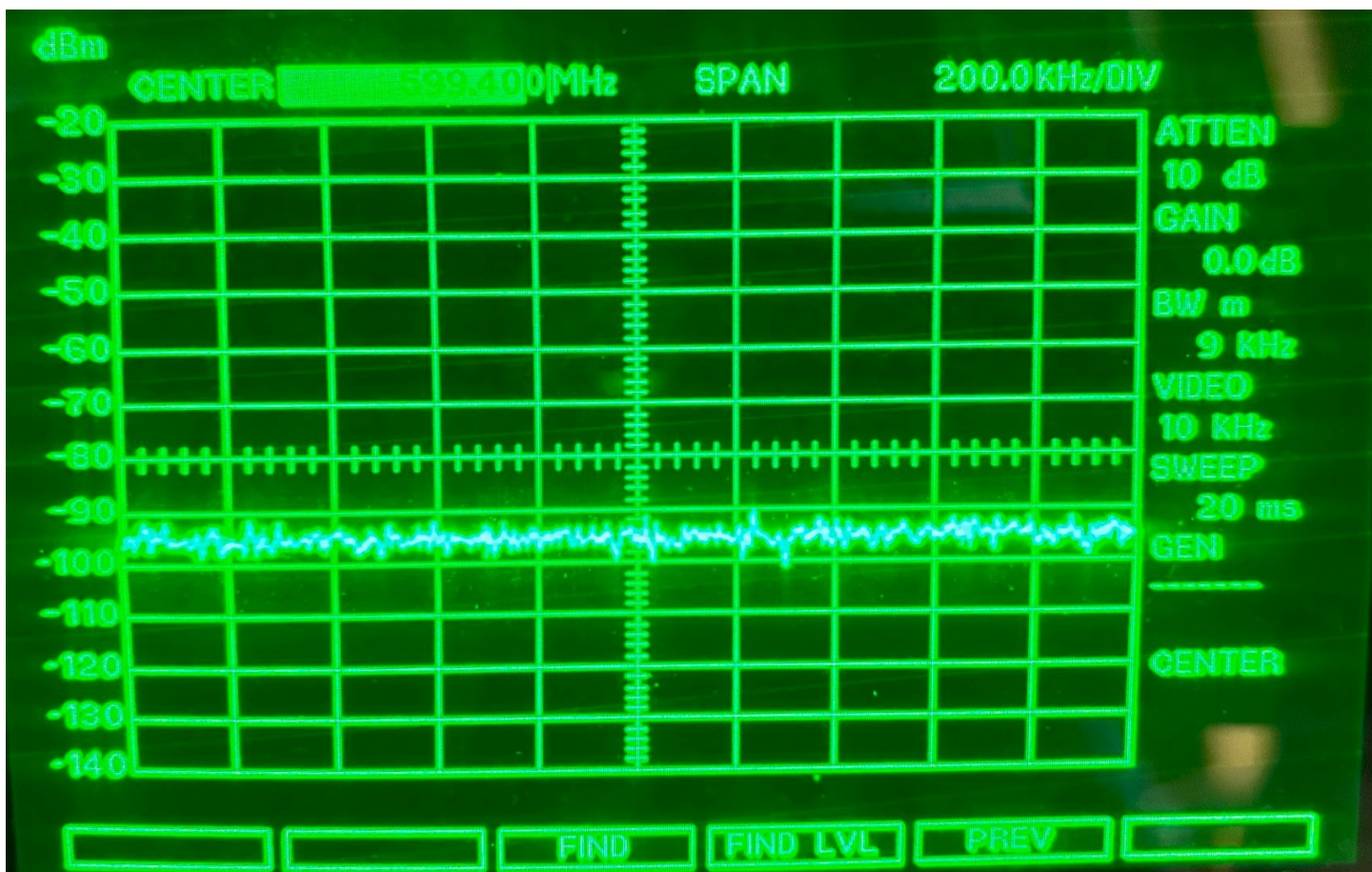
CENTER



FIND

FIND LVL

PREV



dBm

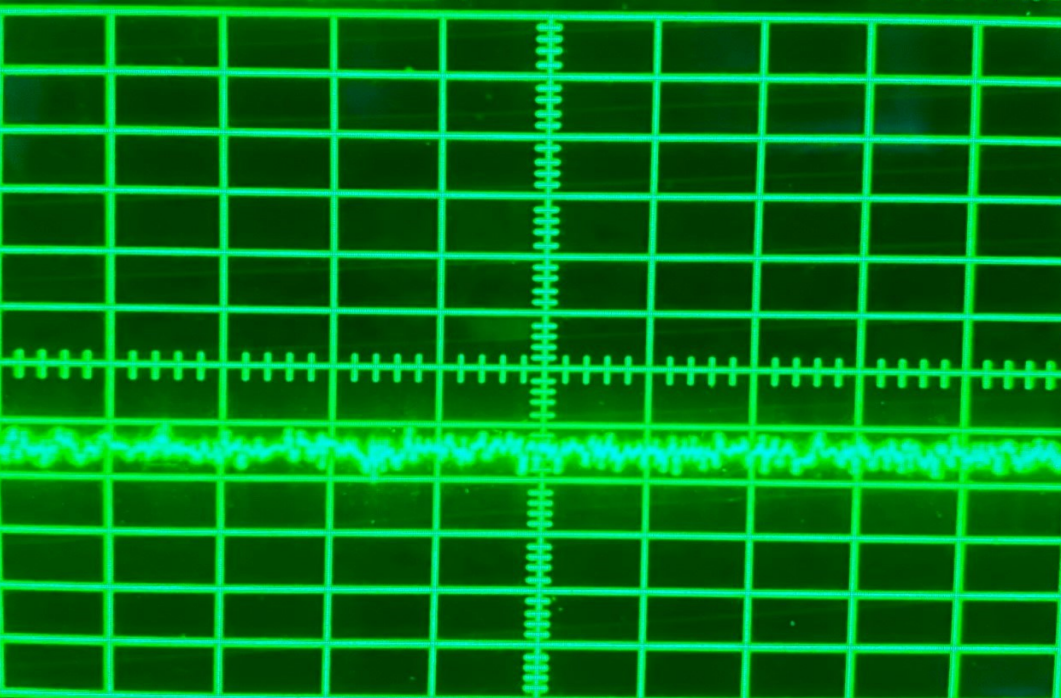
CENTER

799.200MHz

SPAN

200.0kHz/DIV

-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140



ATTEN
10 dB
GAIN
0.0 dB
BW m
9 kHz
VIDEO
10 kHz
SWEEP
20 ms
GEN

CENTER

FIND

FIND LVL

PREV

dBm

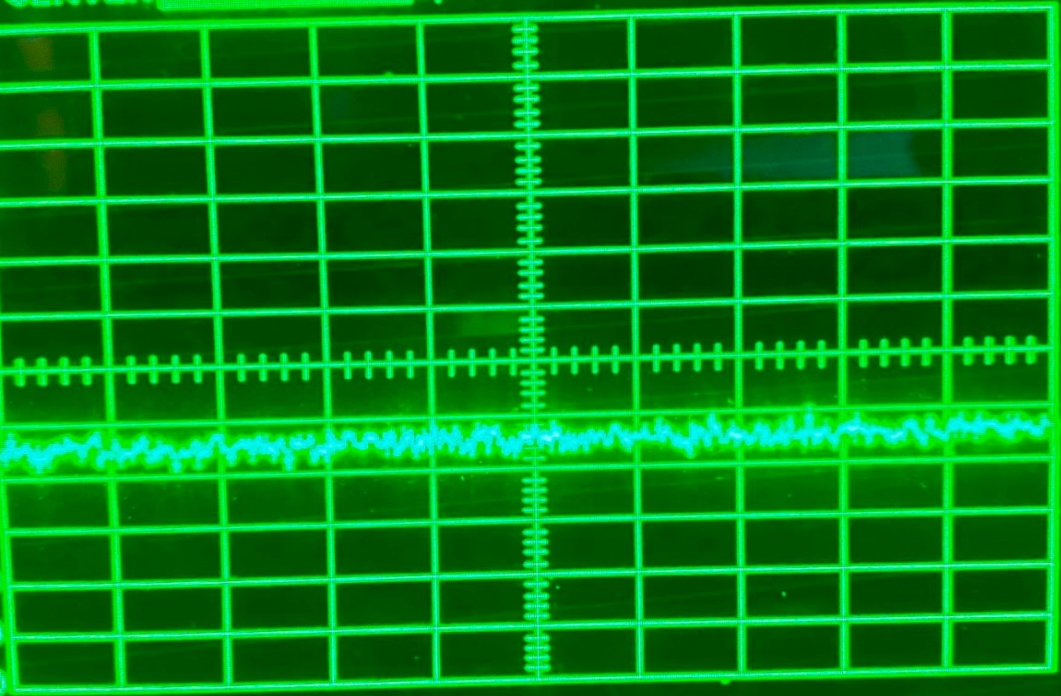
CENTER

990.000MHz

SPAN

200.0kHz/DIV

-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140



ATTEN
10 dB
GAIN
0.0 dB
BW m
9 kHz
VIDEO
10 kHz
SWEEP
20 ms
GEN

CENTER

FIND

FIND LVL

PREV

