

**WHAT'S THAT**

**NOISE!!!**

am Radio Vlog  
G4HRV

**HF Noise  
Cancelling**


**QRM**



# Agenda

- **How HF Noise Cancellers Work**
- **Noise Cancelling Products**
- **Cancellation Process Step by Step**
- **Noise Cancelling Demonstration**

# How to Eliminate Horrendous HF Noise & QRM



**HF Noise, QRM, it's  
everywhere now days**



**Power line noise, RFI from TVs, computers, monitors, HVAC systems wreak havoc on the HF bands**

**Options Available**

# Noise Reduction Options



Locate the noise source and have it corrected



The radio... **YAESU**

# FTDX10

HF/50MHz TRANSCEIVER



You could purchase a newer model radio with  
Digital Noise Reduction (DNR)



The radio... **YAESU**

# FTDX10

HF/50MHz TRANSCEIVER



## Optimal Settings:

**DNR: 5    NB: 5    CONT: 650 Hz    NOTCH: 1750 HZ**



ParaPro EQ20 DSP  
Compact 20W audio  
enhancer (\$425.99)

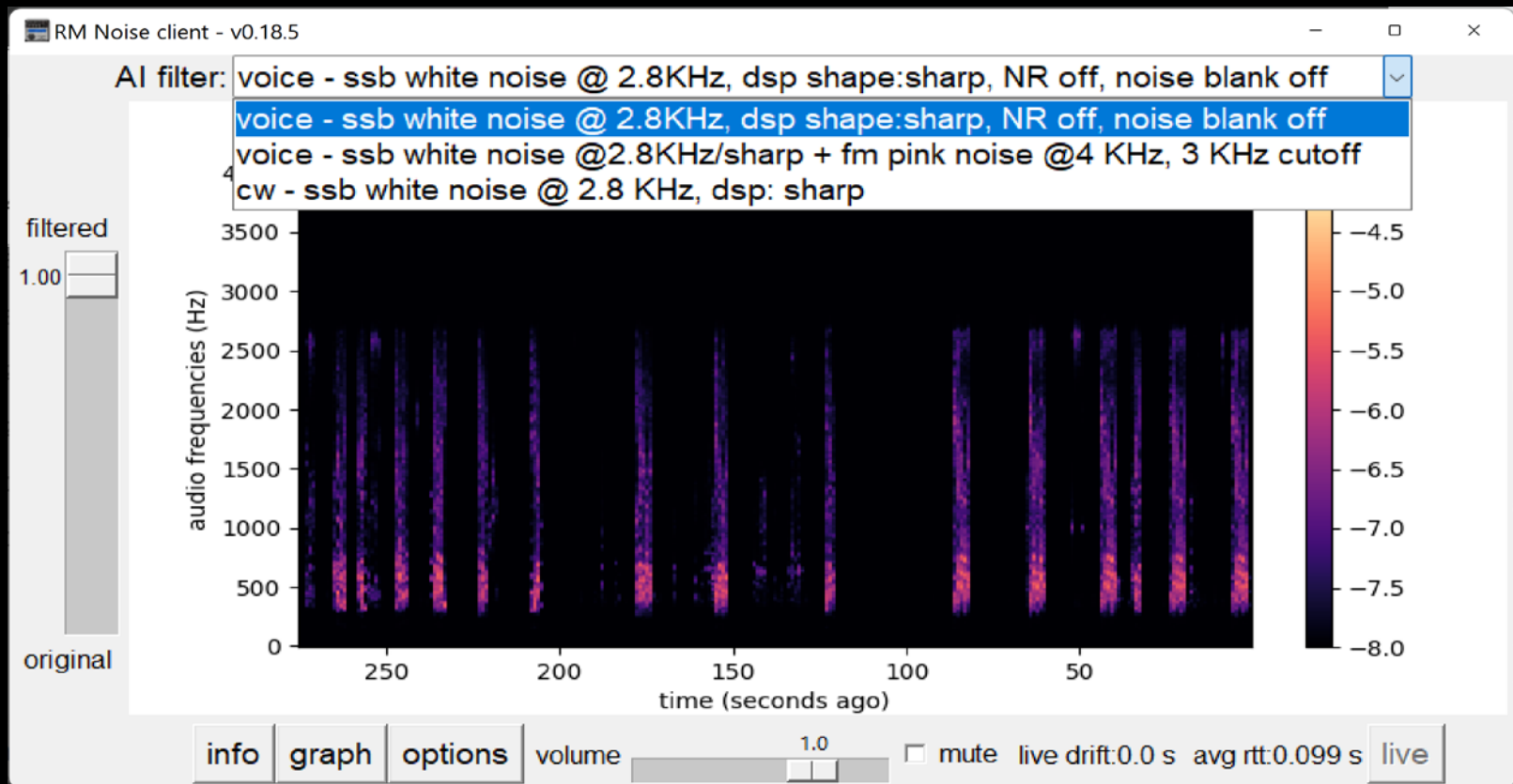
NES10-2 MK4  
5W amplified DSP Noise  
Eliminating Speaker (\$129.99)



**Add-ons for existing (older) radios**



# RM NOISE AI Noise Filtering



**You could even use Artificial Intelligence (AI)**

**If the problem noise is horrendous and can't be eliminated, there may be only ONE solution**

**(when DNR & AI alone may be insufficient)**





MFJ 1026 Deluxe  
Noise Cancelling Signal  
Enhancer  
\$234.95

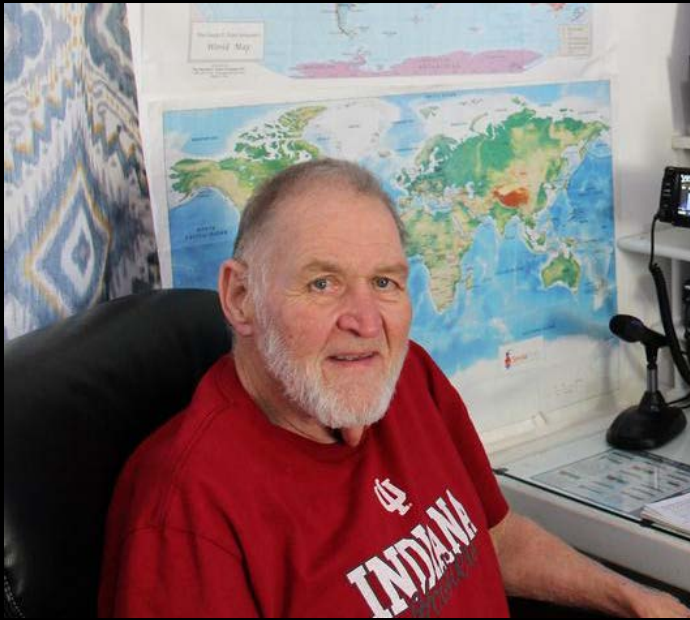
TimeWave ANC-4  
Antenna Noise  
Canceller  
\$259.95

**An Antenna Noise Canceller  
MAY BE THE SOLUTION!**



**This presentation focuses on the MFJ-1026 Deluxe Noise Cancelling Signal Enhancer**

# KC9NKI Acquired MFJ-1026



- KC9NKI's HF noise issues intermittently exceed the DNR/NR capabilities of his Yaesu FT-DX10
- He has invested in an MFJ-1026 to fully resolve his noise issues.

WB9LIB assisted in setting up and providing training on the MFJ-1026

**So how does a noise  
canceller work?**



Main Antenna



Sense Antenna

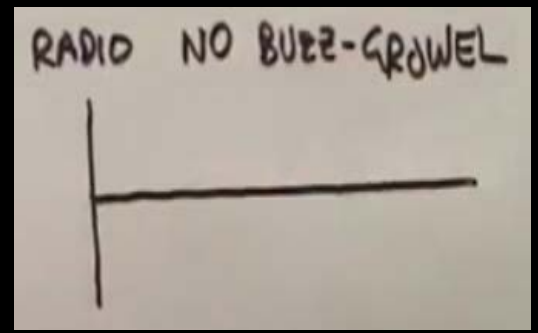
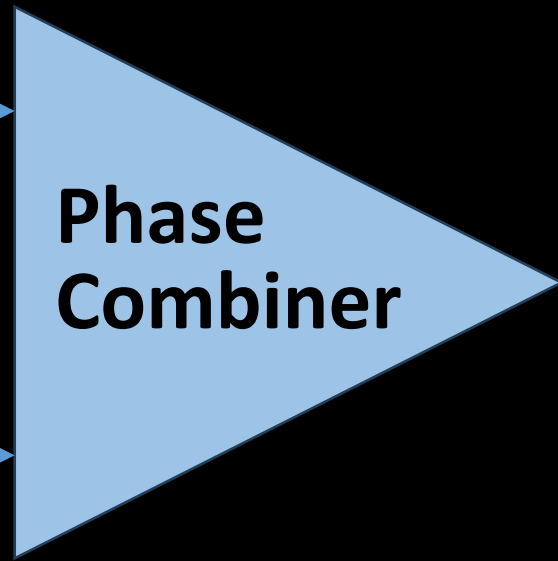
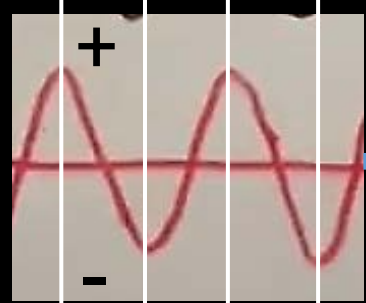
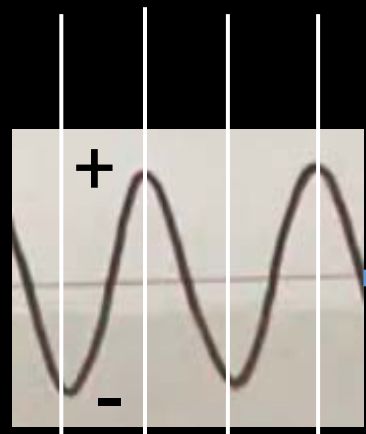


HF Noise Canceller

Radio

**It uses TWO antennas, your MAIN antenna and a NOISE SENSE antenna**

MAIN ANTENNA



To Radio

SENSE ANTENNA

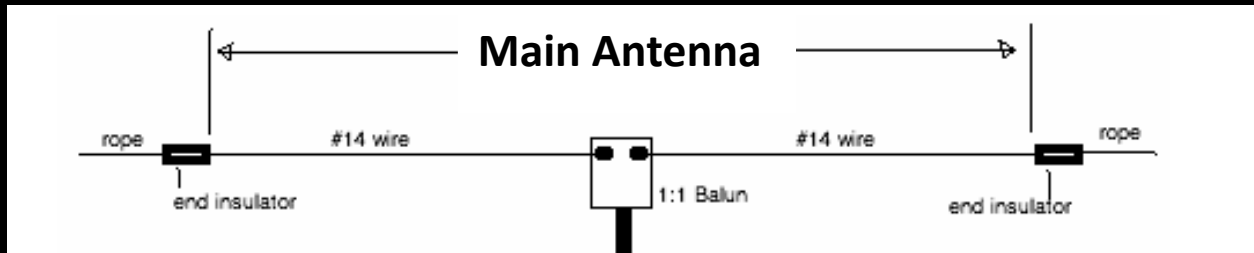
Phase of noise signal from MAIN antenna & SENSE antenna is shifted until they cancel

# Advantages of the MFJ-1026

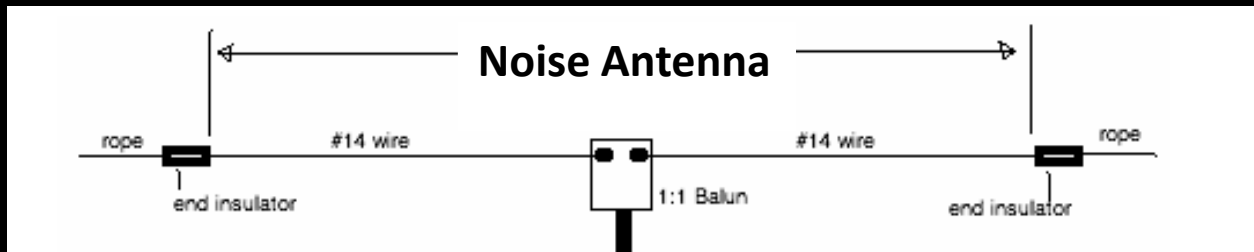
- Interference can be much stronger than the signal and be COMPLETELY removed without affecting the desired signal
- Effective with ALL types of interference and on ALL modes
- Signals can be added instead of subtracted with the simple push of a button
- Optimized over the range of 1.8 to 30 MHz.

# Considerations

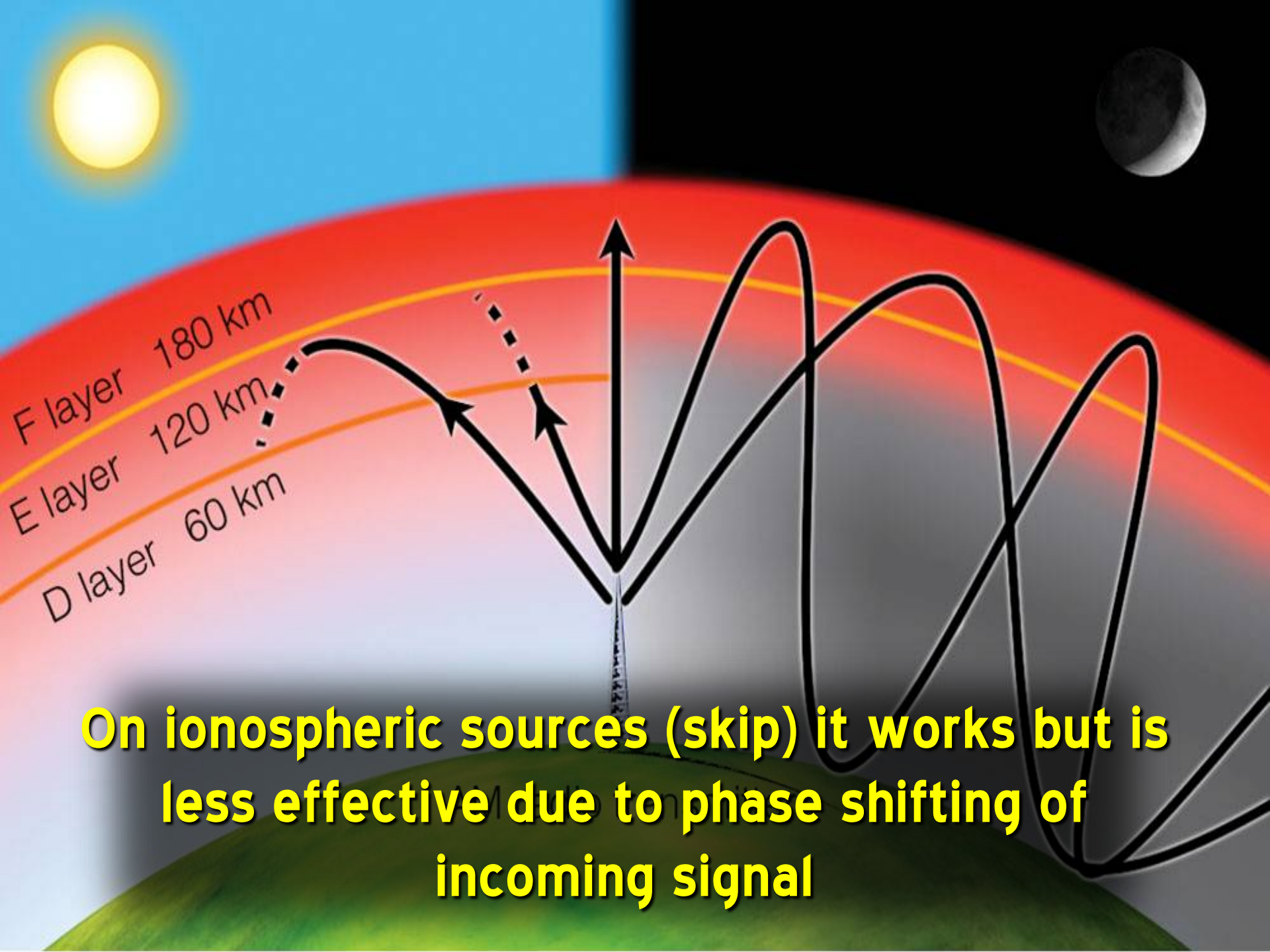
The PROBLEM noise MUST be STRONG  
on the SENSE antenna for the noise  
canceller to work!



**The MFJ-1026 works best when the main and noise antennas have the same basic patterns & orientation**



**The Noise Canceller works BEST on  
nulling LOCAL noise sources!**



**On ionospheric sources (skip) it works but is less effective due to phase shifting of incoming signal**



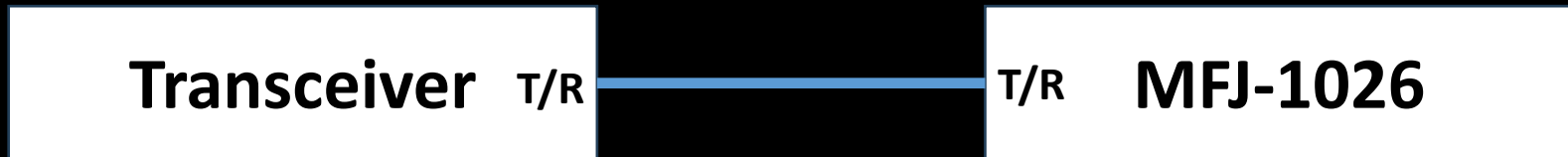
Unless the noise is in the same room as your radio, **NEVER** use the internal MFJ-1026 whip antenna



**WARNING**

While the MFJ-1026 contains internal T/R (transmit-receive) RF sensing to protect the internal circuitry:

**MFJ STRONGLY recommends using an external Transmit/Receive control line on the rear panel of the MFJ-1026.**



# Using the MFJ-1026



1. Begin with the **MAIN ANTENNA GAIN** and **AUXILIARY ANTENNA GAIN** full counter-clockwise & **PREAMP** off
2. Turn **POWER** on
3. Set **FREQ** button **HIGH** or **LOW** (above or below 7-12 MHz)
4. Increase **MAIN ANTENNA GAIN** until undesirable signal is reasonably strong & note signal strength
5. Turn the **MAIN ANTENNA GAIN** fully counter-clockwise



5. Turn **AUXILIARY ANTENNA GAIN** up until it has signal strength matches level observed on **MAIN ANTENNA**
6. Adjust **PHASE** for a null. You may need to change the setting of the **PHASE** button.
7. Alternately adjust **AUXILIARY ANTENNA GAIN** & **PHASE** to achieve maximum null.

**You should be able to practically completely eliminate the undesirable signal**

# **Null Signal Demo Using WWV**

# Noise Reduction Demo #1



# Noise Reduction Demo #2

# Noise Reduction Demo #3

**The MFJ-1026 can work  
WONDERS when it comes to  
eliminating HF Noise!**

**A number of hams have reported  
problems using the MJF-1026  
*.....the frequent reason.....***

The background features a dark blue field with a series of concentric, glowing blue circles on the left side, resembling ripples or a signal. A bright, horizontal blue light streak cuts across the center of the image, extending from the left edge towards the right.

**When ALL else fails,  
an HF NOISE CANCELER  
*may be the answer!***



**Thank You**