



# Wideband HF Channel Availability Working Group

**San Diego Convention Center  
San Diego, California, USA  
February 10, 2015**

***THIS INFORMATION IS NOT EXPORT CONTROLLED***

*THIS INFORMATION IS APPROVED FOR RELEASE WITHOUT EXPORT RESTRICTIONS IN ACCORDANCE WITH A REVIEW OF THE INTERNATIONAL TRAFFIC IN ARMS REGULATIONS (ITAR), 22CFR 120-130, AND THE EXPORT ADMINISTRATION REGULATIONS (EAR) 15 CFR 730-774.*

## Goals

- Under the auspices of the HF Industry Association (HFIA), collaboratively field a substantial number of HF wideband channel availability measurement stations in diverse locations worldwide (as far as possible)
- Use common hardware, (SDR and antenna), collection software, and analysis software so that results can be easily and accurately compared between all sites
- Share the collected data and analysis results among all members of the HFIA

# Agenda

- **Introductions / sign in**
- **Review of September 2014 meeting**
- **Current Software Distribution**
- **Presentations**
  - **Initial UK Results – Bram Watson – Babcock**
  - **Thales results – Catherine Lamy-Bergot – Thales**
  - **Further examination of noise-floor determination – Wm. Batts – Harris**
  - **Different configurations and availability in southern Norway – Magnar Gåsland – Norwegian Defence**
  - **Further validation of the Perseus as a measurement tool – J. Nieto - Harris**
- **General Discussion / Issues**
  - **How to consider and factor allocated and un allocated frequency bands**
  - **Antenna systems. Experiences with Clifton Labs versus other alternatives?**
  - **Future planned testing**
  - **Applicability of the proposed CMA metric**
  - **Review of the collection and analysis software**
- **Plans moving forward**

## Review of September 2014 Meeting

- Measurement differences between antennas
- Test site validation guidelines needed ..
  - RF Choke
  - Antenna grounding
  - Antenna location
- Some noise environments show up as occupied channels
  - Method for establishing noise-floor needs improvement
- CMA availability metric for durations longer than 2 min ?
- How do we share large files ?
  - Data collection specifics (location, time of day, year, etc)
  - Details of test sites described in a document ?
  - One common data server ?

## Antenna Info

Antenna: [http://www.cliftonlaboratories.com/z1501\\_active\\_antenna.htm](http://www.cliftonlaboratories.com/z1501_active_antenna.htm)

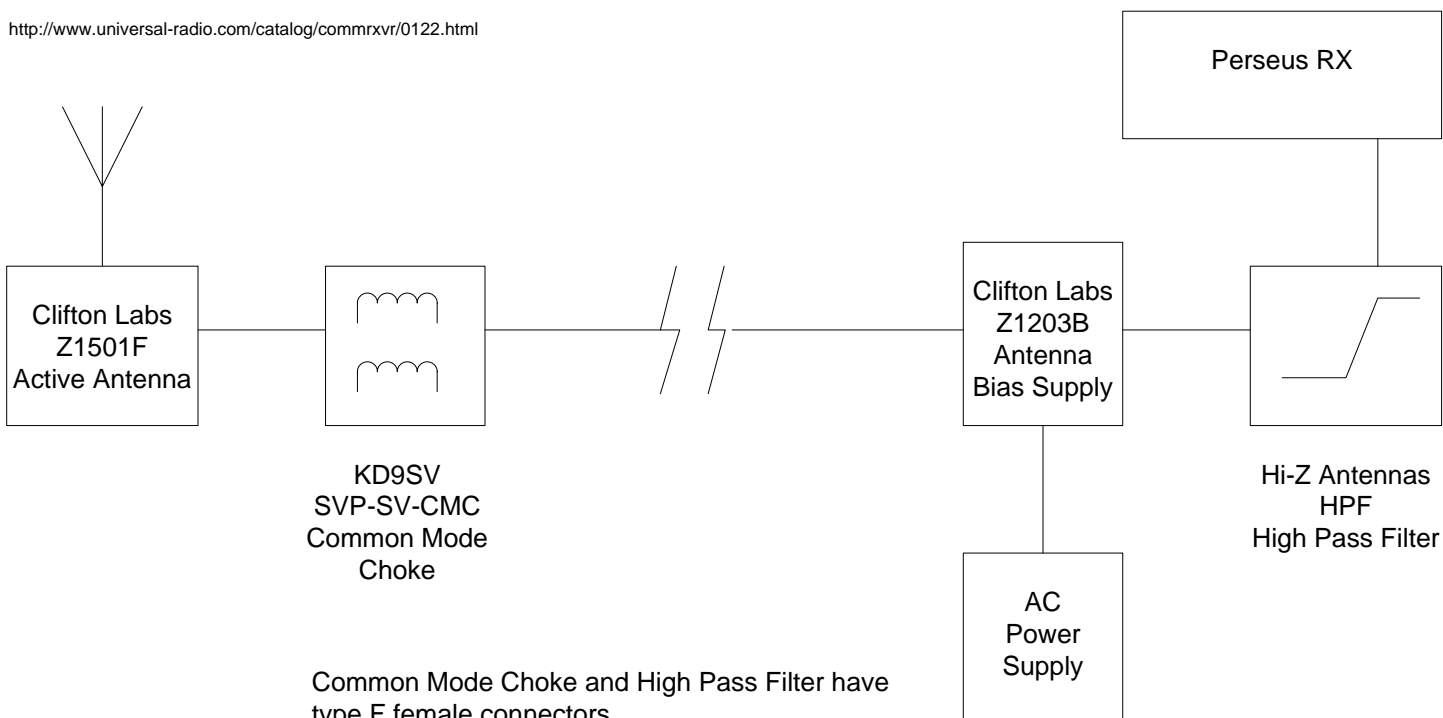
Choke: <http://www.dxengineering.com/search/product-line/kd9sv-products-sv-cmc-common-mode-choke?autoview=SKU&keyword=kd9sv&sortBy=Default&sortorder=Default>

Filter: <http://www.dxengineering.com/search/product-line/hi-z-antennas-high-pass-filters?autoview=SKU&keyword=hi-z%20hpf&sortBy=BestKeywordMatch&sortorder=Ascending>

Perseus receivers can be obtained from a number of vendors, such as:

<http://www.ssbusa.com/perseus.html>

<http://www.universal-radio.com/catalog/comrxvr/0122.html>



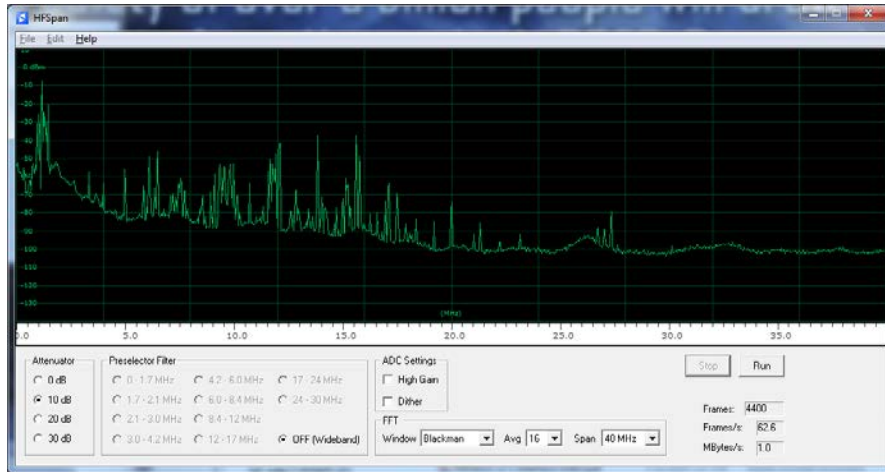
Common Mode Choke and High Pass Filter have type F female connectors.

Clifton Labs antenna can be ordered with BNC, N, or F connectors.

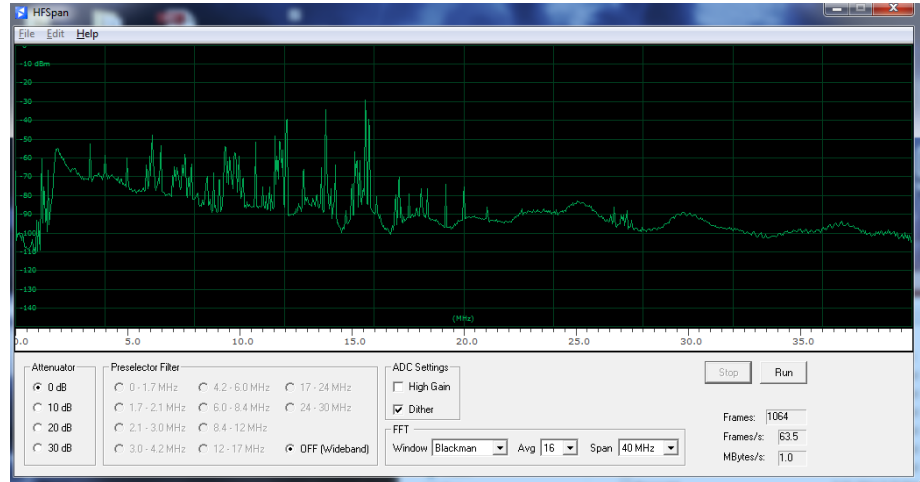
Perseus has BNC connector

## Effect of Adding Choke / HPF to Clifton Labs Antenna

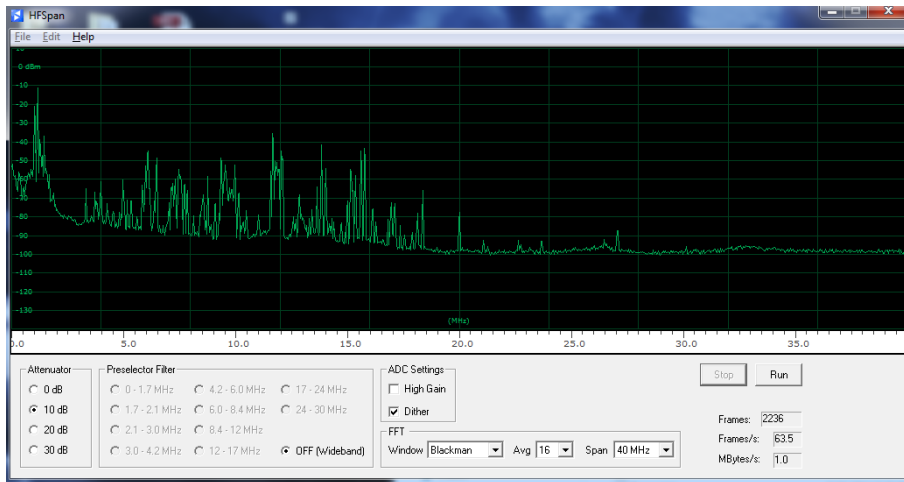
No Choke / No HPF



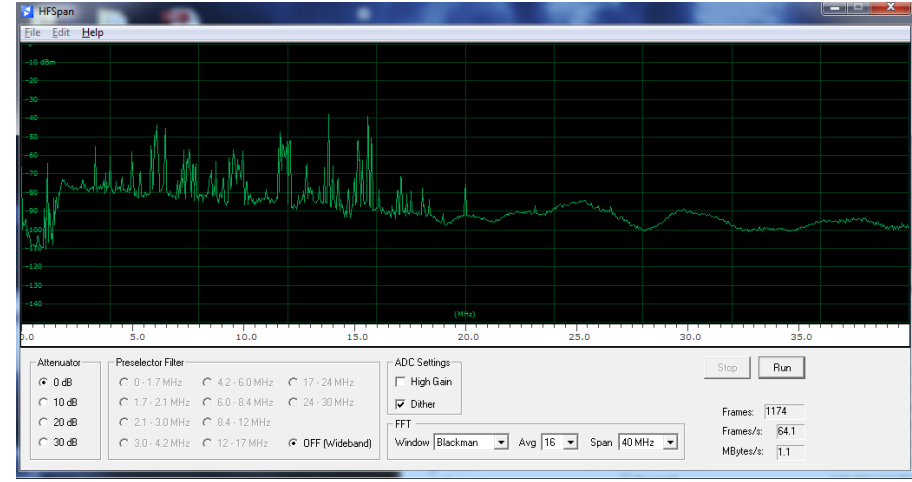
No Choke / HPF



Choke / No HPF



Choke / HPF



### Current Software Distribution Distribution09042014

### Expected Distribution03152015

- **Collection Software**
  - WBHF\_Channel\_Availability\_Measurement\_09042014.exe
  - WBHF\_Channel\_Availability\_Measurement\_03152015.c, FFT2.C, FFT2.H
  
- **Channel Availability Processing**
  - Analysis/Availability/process09042014.c (potential noise floor update)
  - Analysis/Availability/r09042014.bat
  - Analysis/Availability/run09042014.bat
  - Analysis/Availability/WBHFCHAV\_Template\_09042014.XLS
  
- **Python Utility to plot individual collection files**
  - Analysis/Python/HFSpectrum09042014.py
  
- **Matlab (and C ) processing to create video**
  - Analysis/Matlab/convert09042014.c
  - Analysis/Matlab/video09042014.m
  
- **Contact Bill Furman for software distribution zip file [wfurman@harris.com](mailto:wfurman@harris.com)**

**BREAK**



# Member Presentations

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## General Discussion / Issues

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- **Antenna systems. Experiences with Clifton Labs versus other alternatives?**
- **Future planned testing**
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## Plans Moving Forward

**Next meeting:  
Will be announced via email  
and HFIndustry.com**