

# Introduction to the 8800SX Tiles and Controls



# Contents Menu

Choose a hyperlink below



- [I/O and Controls](#)
- [Generators Menu](#)
- [Receiver Menu](#)
- [Analyzers Menu](#)
- [Meters Menu](#)
- [Utilities Menu](#)
- [Configuration Menu](#)
- [Options and Accessories](#)
- [External Links](#)

External links to related videos:

[Introducing the 8800](#)

[8800 Operating GUI](#)

Get the latest Data Sheet

[8800SX Data Sheet](#)

Click on the  Logo to return to this menu

Click on the  shape next to menu items for direct access

# I/O and Controls

## Controls and Functions



- (A) Power On/Off Control
- (B) USB Input
- (C) Headphone Jack
- (D) Microphone I/O
- (E) DMM with Fuse
- (F) System Menu Button
- (G) Audio Output
  - Receiver Demod or Function Generator
- (H) Audio Input
  - Input for Audio Meters – Audio Level, Distortion, SINAD
- (I) Scope Input
- (J) RF Generator Output Port (-5 to -65 dBm)
- (K) T/R RF Input/Output Port
  - Direct connect to transceiver
  - Output: -50 to -125 dBm
  - Input: -30 dBm to 50 Watts (125 Watts Duty Cycle)
- (L)/(M) Bird Thru-Line Power Meter
  - Power Input
  - Power Meter Out (to external 50 Ohm load)
- (N) Numeric Entry Control
- (O) Antenna
  - Input: +10 dBm Max
    - Used for off air or low level inputs
  - Output: -30 to -90 dBm
- (P) Color Resistive Touch display

# I/O and Controls

## Controls and Functions



- (A) Battery Power Status Indicator
- SYS Indicator
  - Green: 88XX Power On/Awake Mode
  - Blue: 88XX Sleep Mode
  - Red: 88XX Shutting Down
  - Green/Red Flashing: Battery Temperature >60° C
  - Green Flashing: Battery Life <5%
- BAT Indicator
  - Green: Battery at full charge
  - Amber: Battery is charging

# I/O and Controls

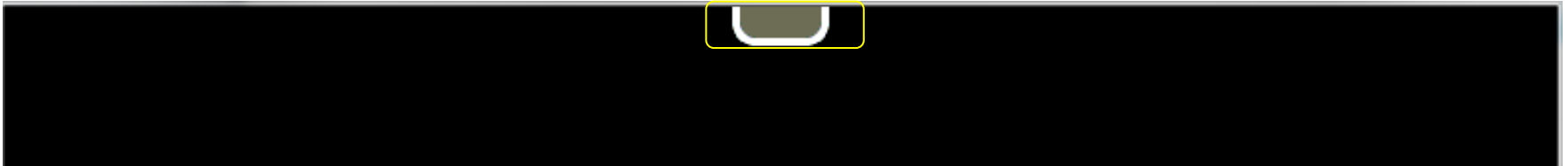
## Controls and Functions



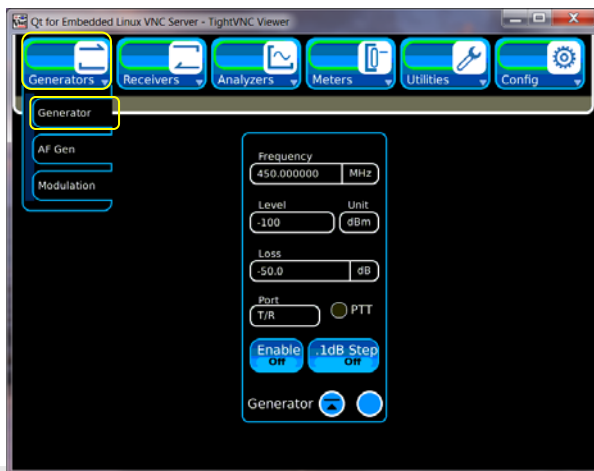
- (A) Remote I/O (factory use only)
- (B) Battery Cover
  - Battery
  - Fuse
- (C) Power Supply Input
- (D) Ground Lug (connect to common ground)
- (E) Dual USB Inputs
- (F) Ethernet Interface

# Menu Bar

## Tile Selections



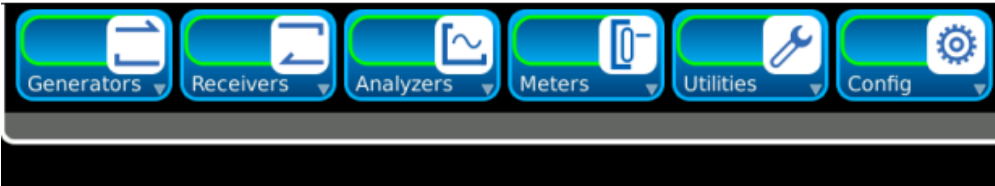
Touch the grey bar to minimize or maximize the menu bar.



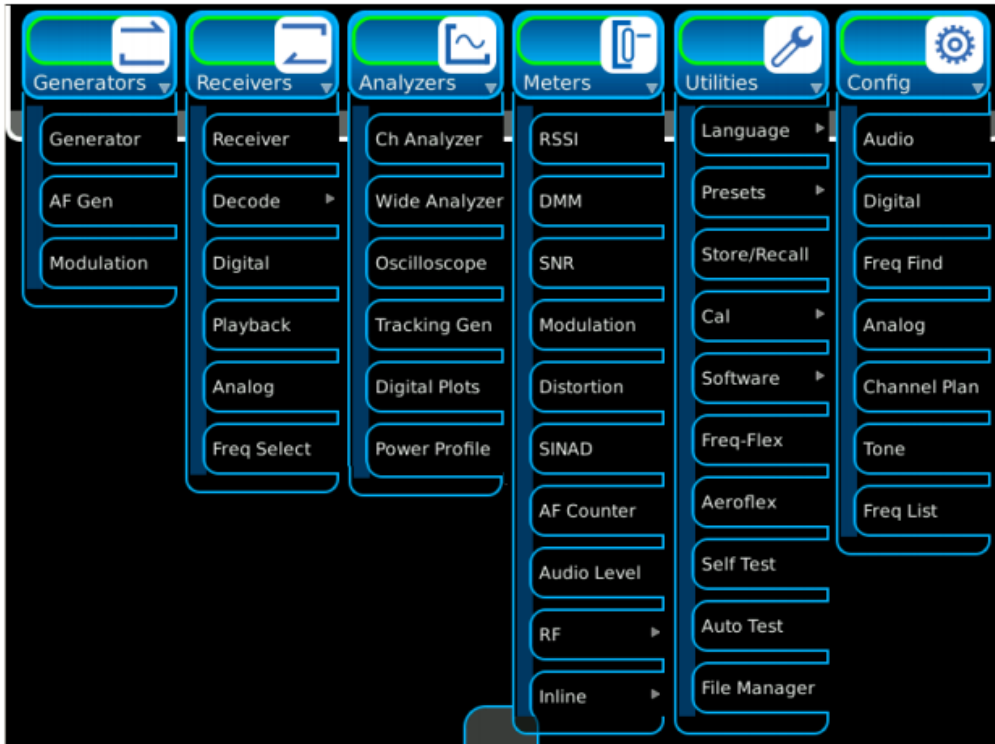
Touch a Menu Bar Selection to reveal a sub menu.  
Touch a sub menu item to open that function.

# Menu Bar

## Menu Reference Chart



This chart shows each system menu expanded. Menu items with an arrow to the right indicate that there is a sub menu available.



# System Menu

## Controls and Functions



Pressing the Home button opens/closes the System Menu.

- Configuration (changing configuration requires system reset).
  - LMR (standard operation)
  - Advanced Digital – **Optional Systems**
    - P25 Phase II - **Option 005**
    - DMR Repeater – **Option 006**
    - PTC (Positive Train Control) – **Option 014**
- Audio Volume (Slider Control)
- Speaker (ON/OFF) Control
- Audio Squelch (Slider Control)
  - Squelch value indicator
- Menu Timeout Delay
  - Controls how long the Menu Bar stays open before automatically closing.
- Backlight (Display Brightness)
- System Reset (establish default values)
- Suspend (shuts off display and functions to preserve battery life when not using)
- Hide Menu (removes the menu bar)
- Show Icons (shows or hides icon bar)



ICON Bar Minimized



ICON Bar Mid-Size



ICON Bar Maximized



Freq Flex compensation is enabled



Freq Flex compensation is disabled



Internal/External 10 MHz Reference Selection/Indicator



Take a snapshot (screen image)



All tiles are locked in position



Tiles are not locked in position and may be moved



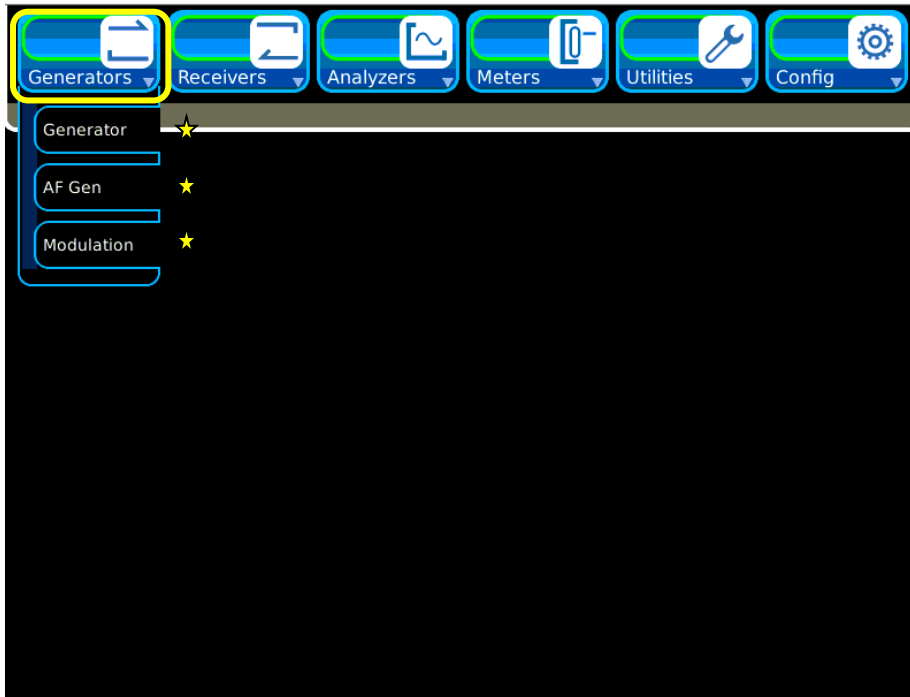
Remaining battery life indicator



Expand information bar

# Generators Menu

## Selecting the RF Generator Tile

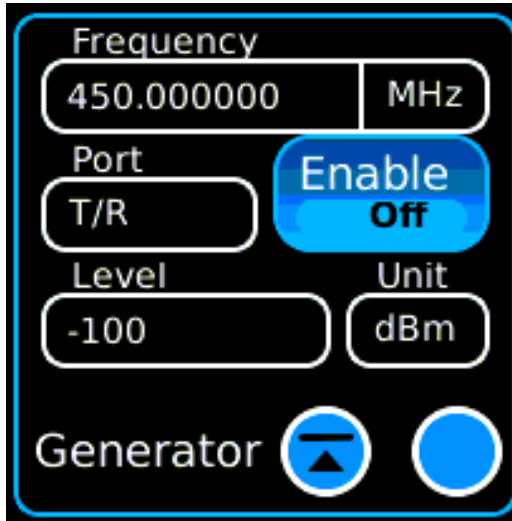




- Expand the menu bar if minimized
- Touch the Generators Menu item
- Touch the Generator Menu selection
  
- The Generators Menu allows access to:
  - RF Generator controls
  - AF Generator controls
  - RF Generator Modulation controls

# Generators Menu



## Generator Tile and Controls (Minimized)

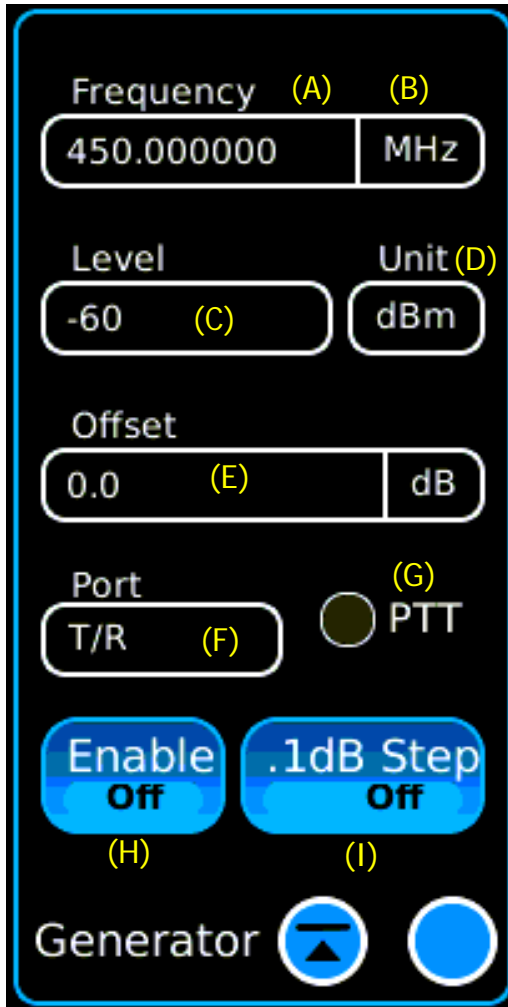


- The minimized Generator Tile allows access to commonly used controls.
- The Min/Max Icon  can be used to minimize or maximize a tile.
- The Tile Close Icon  can be used to remove the tile from the screen.
- Closing a tile only removes the visibility of the controls. Settings and operation are not changed.

# Generators Menu



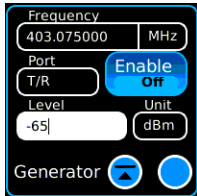
## Generator Tile and Controls (Maximized)



- Generator Frequency (A)/Units (B)
  - 2 MHz to 1 GHz
  - Units GHz, MHz, kHz, Hz
- Output Level (C)/Units (D)
  - dBm, uV, dBuV
- Output Level Offset (E)
  - 0 to -50 dB (use to compensate Generator Output Level for external cable loss or attenuators)
- Output Port (F)
  - GEN: -5 to -65 dBm
  - ANT: -30 to -90 dBm
  - TR: -50 to -125 dBm
- PTT Indicator (G)
  - Indicates when microphone PTT is pressed. In this mode, the generator only generates when the microphone PTT button is depressed.
- Generator Output Enable (H)
  - Turns the RF Generator Output ON or Off
- Generator Output Level Resolution (I)
  - When enabled, allows RF Generator Level to be lowered by 6 dB in 0.1 dB steps. Generator must be enabled before using this control.

# Generators Menu

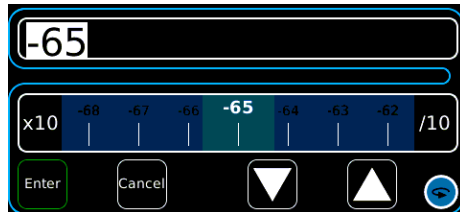
## Entering Frequencies and Levels



Button Entry




Direct Entry



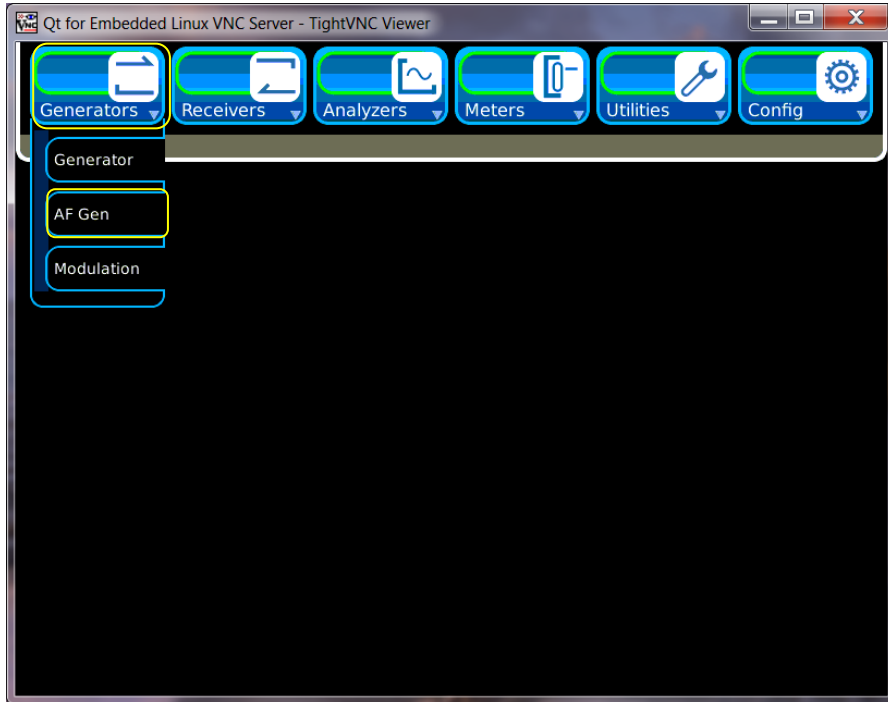
Scroll Bar Entry




- When you touch or select a frequency or level entry field, the field will become highlighted and the direct entry pad will be displayed.
  - Direct Entry Pad
    - Using the numeric entries select the desired value. The minus sign is automatically selected for level entries. Terminate the entry with the enter key for level entries.
    - Note: Frequency entries must be terminated with the appropriate GHz, MHz, kHz or Hz selection.
    - Touching the Scroll Bar Icon  will close the direct entry tile and open a scroll bar where the value can be incremented up or down or the bar can be scrolled. Use the x10 and /10 selections to choose which digit will be moved.
  - To use the button entry, touch the field to be modified and then use the left or right arrow to choose which digit to edit and the up and down arrows to move the value up or down. Use the center button to terminate the entry.

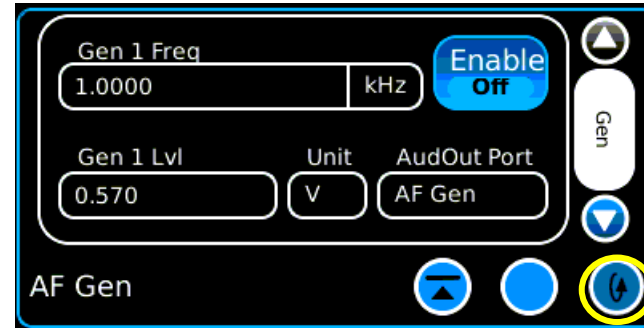
# Generators Menu

## AF Generator Controls

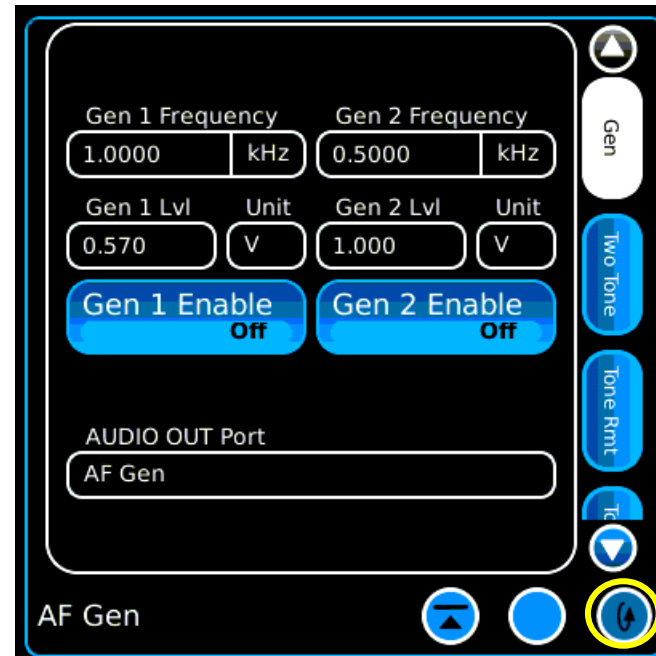


The Fast Stack Icon  can be used to stack tiles on top of each other and quickly access the one that is beneath. It acts as a "Send to Back" feature. Very useful to have many instruments readily available.

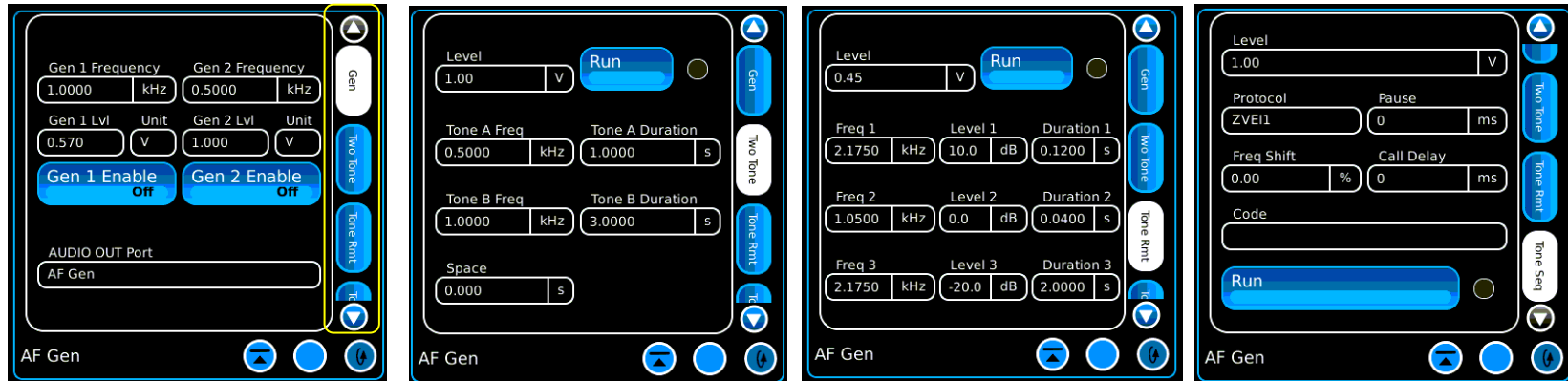
### AF Generator Minimized



### AF Generator Maximized



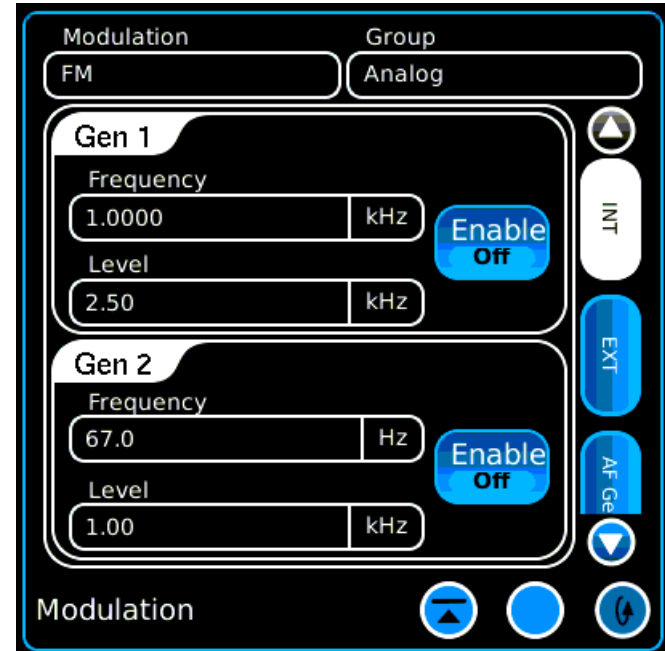
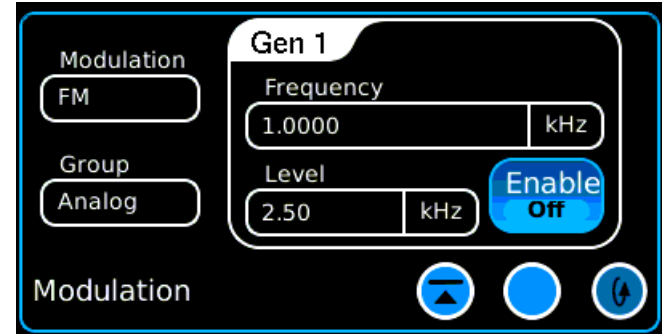
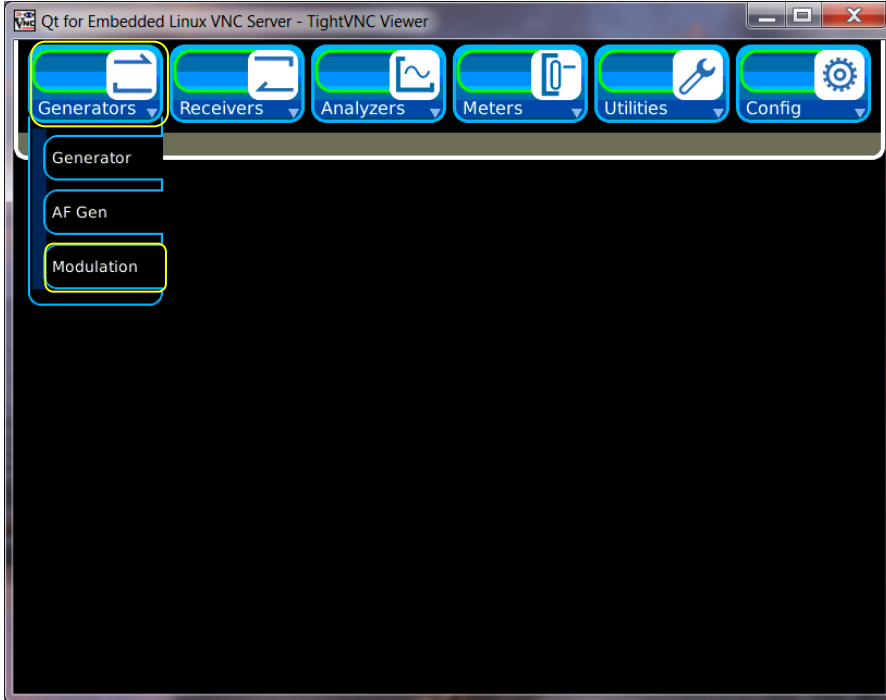
# AF Generator Modes



- GEN1/GEN2
  - Combine up to two internal function generators with independent frequency and level controls
  - Audio OUT Port can route either the function generator or receiver demod to the Audio OUT connector on the front panel
- Two Tone Sequential
  - Control Tone A and Tone B frequency, duration and spacing
- Tone Remote
  - Configure tones for tone remote
- Tone Sequence
  - Choose between ZVEI1, ZVEI2, ZVEI3, PZVEI, DZVEI, PDZVEI, CCIR1, CCIR2, PCCIR, EEA, EUROSIG, NATEL, EIA or MODAT and two user definable sequences

# Generators Menu

## Generator Modulation Tile



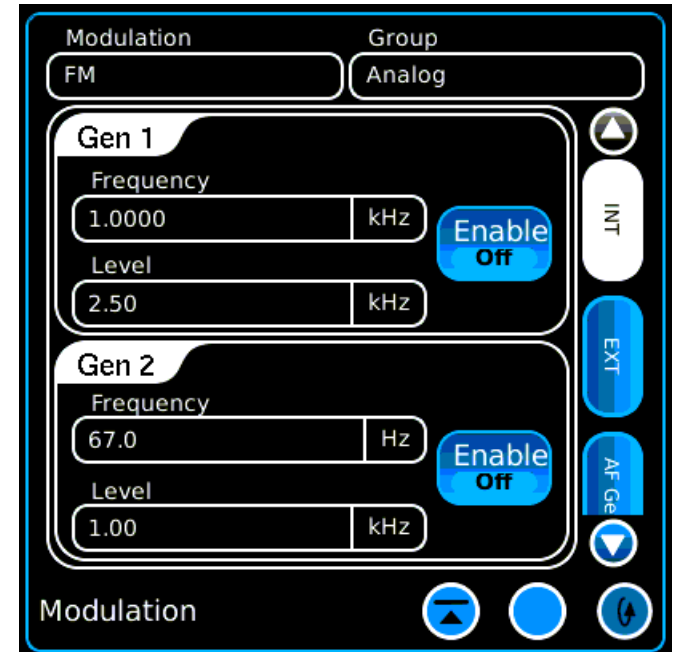


# Generator Modulation Modes

## FM/AM Formats



- Group
  - Analog
- Modulation Analog
  - NONE
  - FM
  - AM
- INT
  - Combine two internal modulation sources to modulate the RF Carrier.
- EXT
  - Apply an external audio signal to the AUD IN Port on the front panel to modulate the RF Carrier.
- AF GEN
  - Allows control of a single audio generator that can be used simultaneously with the two modulation sources. (RF Generator must be enabled).

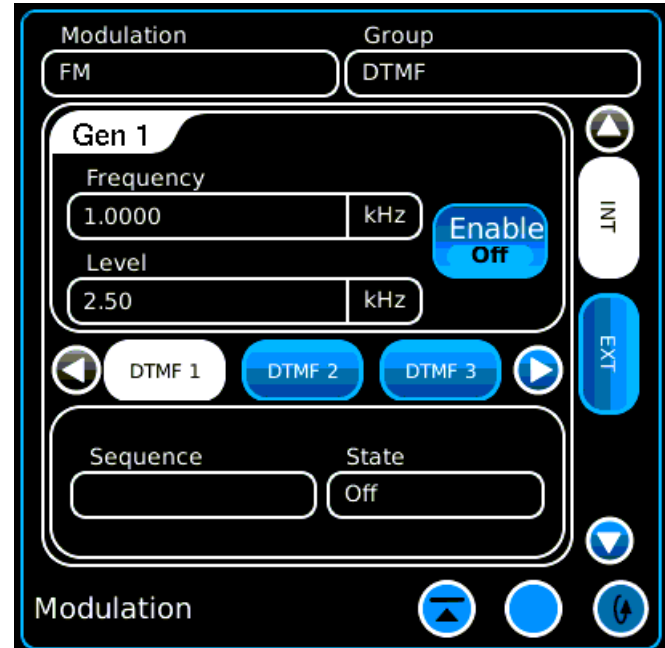


# Generator Modulation Modes



## DTMF

- Group
  - DTMF
- Modulation Analog
  - NONE
  - FM
  - AM
- INT/EXT
  - Configure a constant tone modulation source. External modulation source may be used.
- DTMF 1
  - Enter a DTMF tone sequence "0123456789\*#"
  - Set State to Off, Cont, Burst or Live
- DTMF 2
  - Normal
    - Set Deviation level for DTMF Hi Tone and Lo Tone.
  - Twist
    - Set dB of twist and a deviation level.
- DTMF 3
  - Set mark and space times.

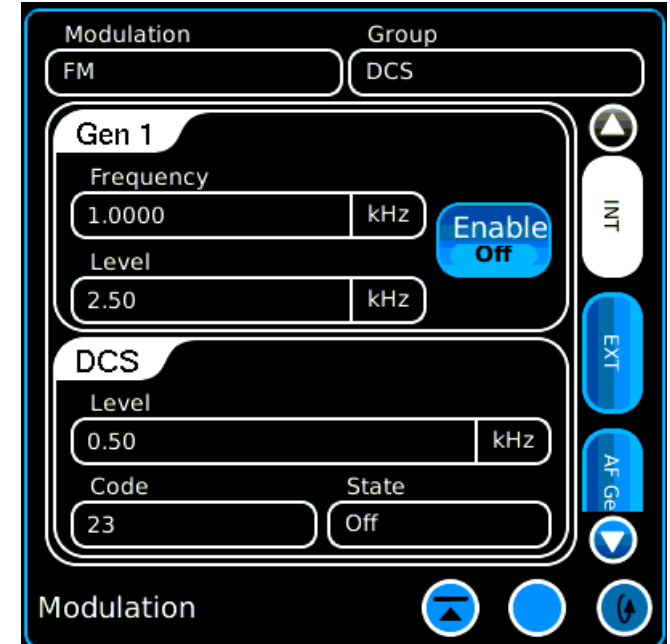


# Generator Modulation Modes

## DCS



- Group
  - DCS
- Modulation Analog
  - NONE
  - FM
  - AM
- INT/EXT
  - Configure a constant tone modulation source. External modulation source may be used.
- AF GEN
  - Allows control of a single audio generator that can be used simultaneously with the two modulation sources. (RF Generator must be enabled).
- DCS
  - Level entry of deviation level of the DCS Code
  - Code entry for the DCS Code value
  - State allows selection of Off, Normal or Inverted



# Generator Modulation Modes

## Two Tone, Tone Remote and Tone Sequence

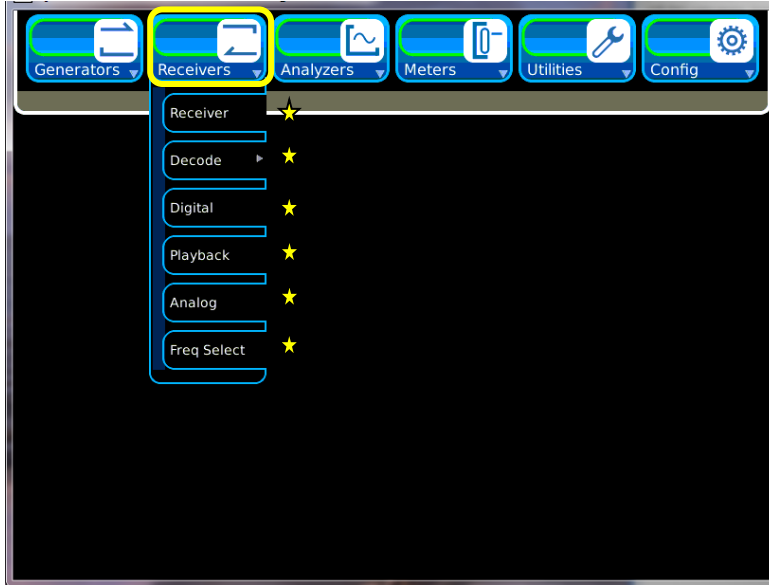


- Modulation Analog
  - NONE
  - FM
  - AM
- Group
  - Two Tone Sequential
    - Control Tone A and Tone B frequency, duration and spacing
  - Tone Remote
    - Configure tones for tone remote
  - Tone Sequence
    - Choose between ZVEI1, ZVEI2, ZVEI3, PZVEI, DZVEI, PDZVEI, CCIR1, CCIR2, PCCIR, EEA, EUROSIG, NATEL, EIA or MODAT and two user definable sequences
- AF GEN
  - Allows control of a single audio generator that can be used simultaneously with the two modulation sources (RF Generator must be enabled)



# Receivers Menu

## Receivers Selector

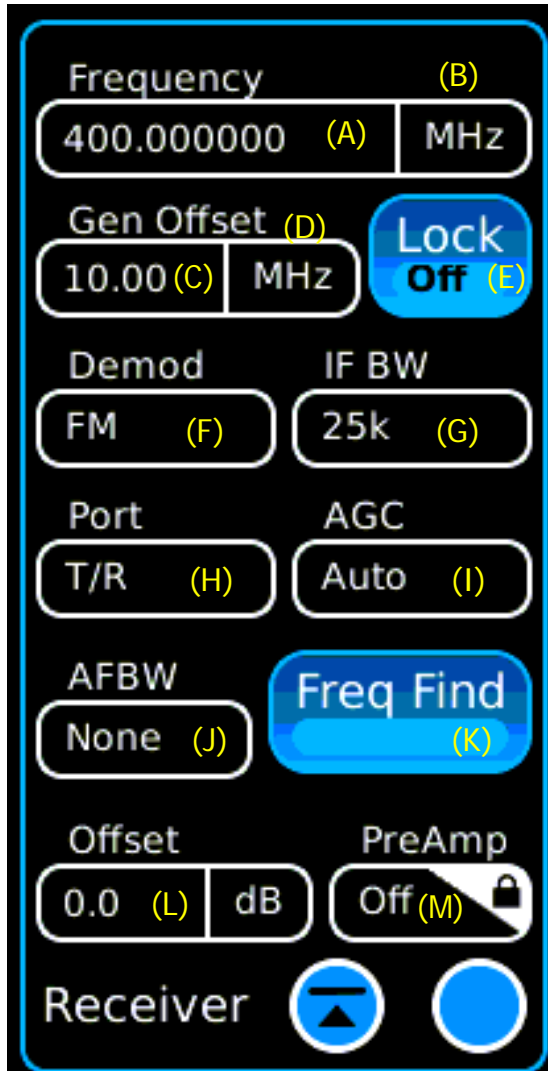


- The receivers selection allows access to:
- RF Receiver
  - All RF Receiver Controls Tile
- Decode sub menu
  - **Digital – Optional**
    - **Decodes digital information based on technology**
  - DCS Decode
    - DCS Decode Window
  - DTMF Decode
    - DTMF Decode Window
  - Tone Decode
    - Tone Decode Window
- **Digital – Optional**
  - **Displays all digital measurements on a single tile**
- **Playback – Optional**
  - **Record and Playback for digital radios**
- Analog
  - Displays all analog measurements on a single tile
- Freq Select
  - Displays access to user defined frequency list

# Receivers Menu



## Receiver Tile and Controls (Maximized)



- Receiver Frequency (A)/Units (B)
  - 2 MHz to 1 GHz
  - Units GHz, MHz, kHz, Hz
- Generator Offset (C)/Units (D)
  - RF Signal Generator Frequency Offset
  - dBm, uV, dBuV
- Lock (E)
  - On: Generator frequency will be offset from the receiver
  - Off: The Generator frequency is unlocked from the receiver
- Demod (F)
  - FM, AM, Options - P25, DMR, dPMR, ARIB T98, NXDN
- IF BW (G)
  - 5 kHz, 6.25 kHz, 8.33 kHz, 10 kHz, 12.5 kHz, 25 kHz, 30 kHz, 100 kHz, 300 kHz
- RF Input Port (H)
  - ANT: +10 dBm Max
  - TR: 50 Watts cont./125 Watts Duty Cycled

# Receivers Menu



## Receiver Tile and Controls (Maximized)

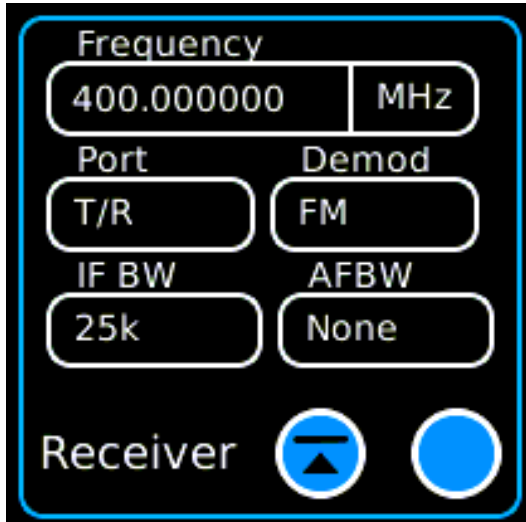




- AGC (I)
  - Auto/Manual
- AFBW (Demod Audio BW Filter) (J)
  - LP Filters: 300 Hz, 3 kHz, 5 kHz, 15 kHz
  - HP Filters: 20 Hz, 300 Hz
  - BP Filters: 300 Hz – 3 kHz, 300 Hz – 5 kHz, 300 Hz – 20 kHz plus C-Wt and CCITT
  - Frequency Find (K)
    - Begins search operation for transmit signal. Search range is defined from Config>Freq Find. Apply a signal to the Antenna or TR Port and then touch the Freq Find button to begin the search.
- Input Level Offset (L)
  - 0 to -50 dB (Use to compensate Power/RSSI measurements for external cable loss or attenuators)
- PreAmp Enable (M)
  - Turns the 20 dB Receiver Pre-Amp ON or Off (Ant input only)

# Receiver Menu



## Receiver Tile and Controls (Minimized)



- The Minimized Receiver Tile allows access to commonly used controls.
- The Min/Max Icon  can be used to minimize or maximize a tile.
- The Tile Close Icon  can be used to remove the tile from the screen.
- Closing a tile only removes the visibility of the controls. Settings and operation are not changed.



# Receiver Menu

Receiver Decode>Digital



Demod	NAC
P25	293
Link Control	MFID
Group Call	0
Emergency	Service Options
Off	0
TGID/Dest ID	Source ID
1	1
Algorithm ID	Key ID
80	0

Digital Decode

Demod	RAN
NXDN	1
Call Type	Duplex
Group Call	Half
Emergency	Priority
Off	Off
Group/Dest ID	Source ID
0	0
Cipher Type	Key ID
NONE	0

Digital Decode

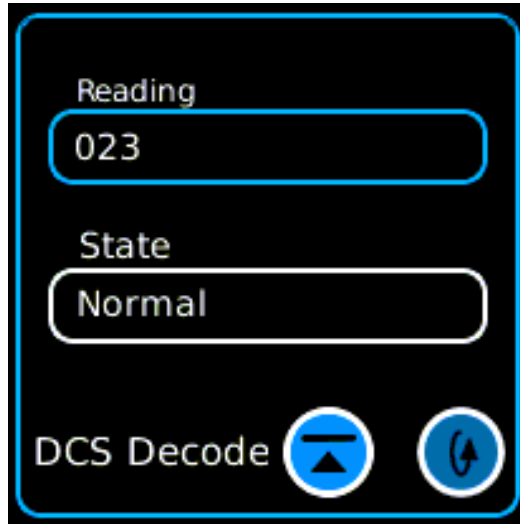
Demod	Slot
DMR	Slot1
Link Control	Color Code
Group Call	1
Emergency	MFID
Off	0
Call ID	Service Options
16777215	0
Privacy Indicator	Radio ID
0	16777016

Digital Decode

- The Digital Decode Tile is available with optional digital formats.
- Decoded Data elements are based on the selected Demod technology like P25, NXDN or DMR for example.

# Receiver Menu

Receiver Decode>DCS Decode



- The DCS Decode panel can decode Transmitter DCS/DPL/CDCSS signals.
- State
  - Off
  - Normal
  - Inverted

# Receiver Menu

Receiver Decode>DTMF Decode

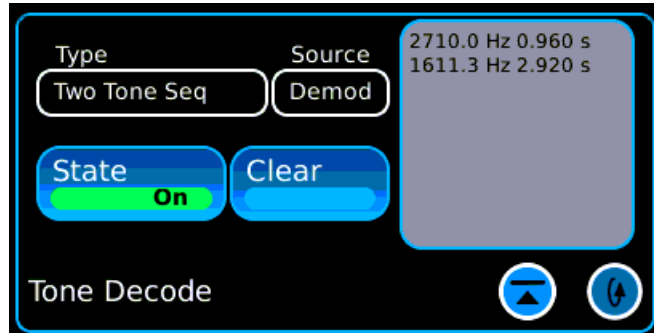


- The DTMF Decode panel can decode Transmitter DTMF signals.
- Must be enabled to decode.
- Shows current and last message.

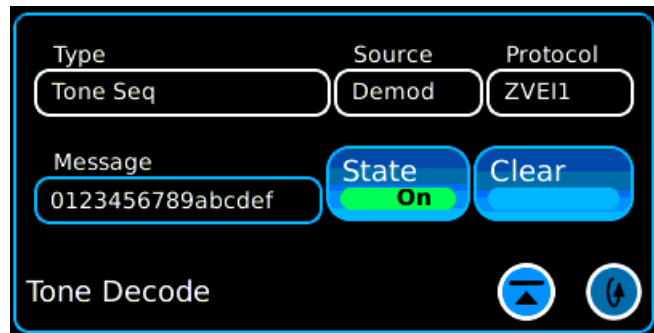
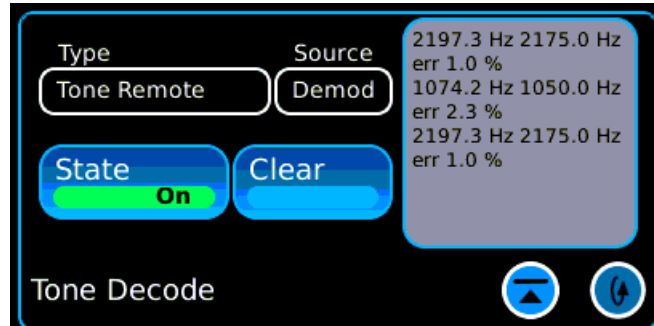
# Receiver Menu



Receiver Decode>Tone Decode

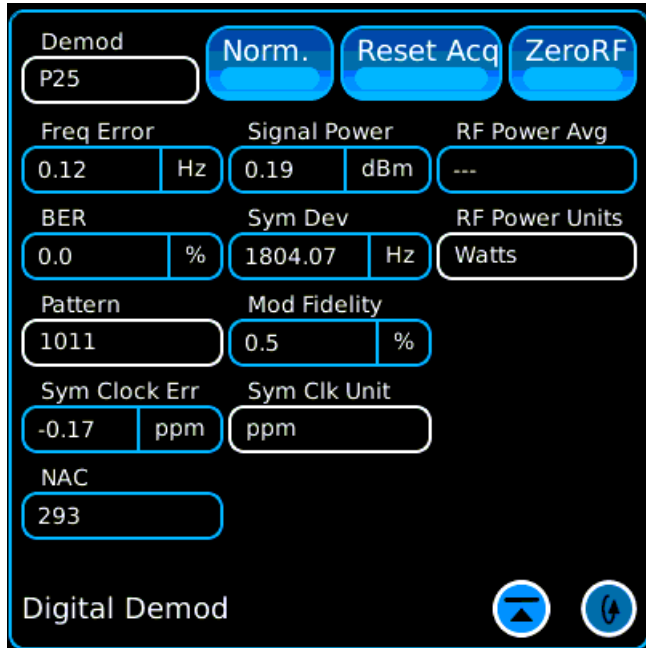


- The Type selection offers choices of:
  - Two Tone Sequential
  - Tone Remote
  - Tone Sequence
    - Choose between ZVEI1, ZVEI2, ZVEI3, PZVEI, DZVEI, PDZVEI, CCIR1, CCIR2, PCCIR, EEA, EUROSIG, NATEL, EIA or MODAT
- State is ON to decode or Off
- The Clear button clears decoded values from the decode window
- The Source can be either the 8800SX Receiver Demod or the Front Panel Audio IN Port



# Receiver Menu

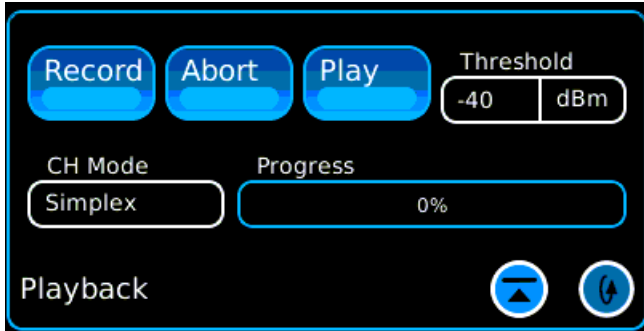
## Receiver Digital



- For **Optional** digital systems like P25, NXDN, DMR etc. the Digital Demod Tile provides all of the necessary measurements required to properly evaluate a digital signal.
  - Demod Type: **P25, DMR, dPMR, ARIBT98, NXDN**
  - RF Frequency Error
  - Signal Power/Slot Power for TDMA Signals
  - Broadband Power
  - TX BER
    - BER Patterns are available
      - P25 – 1011, CAL, 0.153, FRAMESYNC
      - NXDN – 1031, CAL, 0.153, FSW+PN9, FRAMESYNC
      - DMR – 1031, CAL, 0.153, FRAMESYNC
  - Symbol Deviation
  - Modulation Fidelity/FSK Error
  - Symbol Clock Error
  - NAC (P25)
  - Norm Button: Calibrates the Signal Power Meter
  - Rest Acquire: Resets the digital readings
  - Zero RF: Zero's the RF Power Meter (Broadband)

# Receiver Menu

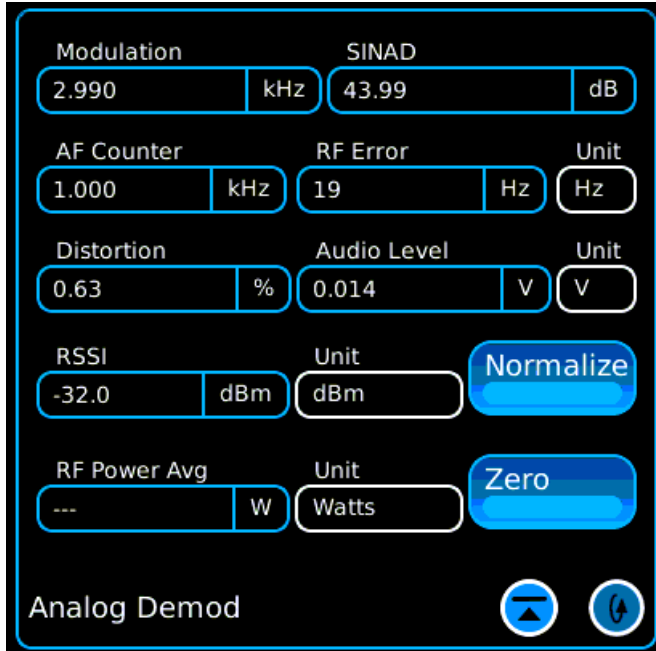
## Receiver Playback



- For **Optional** digital systems like P25, NXDN, DMR etc. the Record and Playback feature is available.
- Simply Key the Digital Transmitter and press the Record button.
- Begin talking as desired then de-key the transmitter.
- The recorded audio will then be played back to the receiver.
- The recording is automatically saved and may be played back as often as desired.
- For DMR systems, both simplex and duplex modes are supported.

# Receiver Menu

## Receiver Analog



- For standard systems like FM and AM the Analog Demod Tile provides all of the necessary measurements required to properly evaluate an analog signal on a single tile.
  - RF Frequency Error
  - Signal Power/RSSI
  - Broadband Power
  - AM/FM Modulation
  - Audio Counter
  - Audio Distortion Meter
  - Audio SINAD Meter
  - Audio Level Meter
- The Zero function can be used to zero the Broadband Power Meter for more accurate test results.
- The Normalize function can be used to calibrate the RSSI meter for more accurate results.

# Receiver Menu

## Receiver Frequency Select

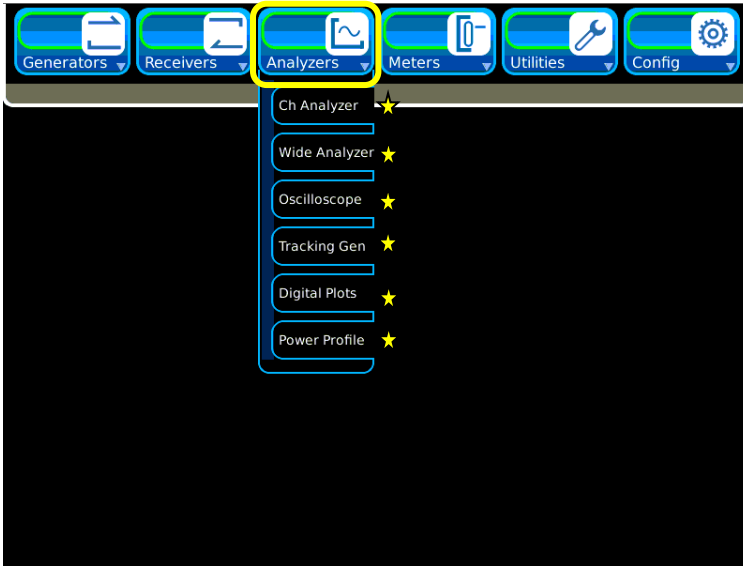


- The Frequency Select tile can be used to access a stored frequency list.
- The list controls the RF Generator and RF Receiver frequencies.
- The Next and Previous buttons can be used to step through a list of frequencies moving up and down through the list as desired.
- The Freq List field shows the list name of the currently selected frequency list.
- The Browse button allows access to choose a different frequency list. Multiple lists may be saved and can be stored in user defined directory structures.
- Frequency lists can be created through the Config>Freq List selection. These files can be exported and modified with standard spreadsheet software.



# Analyzers Menu

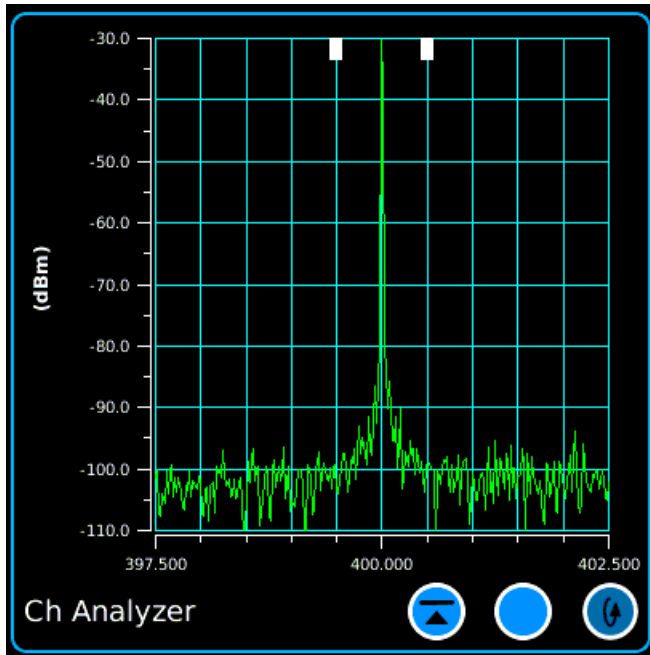
## Analyzers Selections




- The Analyzers selection allows access to:
- Channel Analyzer
  - Look and listen up to a 5 MHz span
- Wide Analyzer
  - Offers spectrum display with spans up to 50 MHz
- Oscilloscope
  - View audio signals in time domain
- Tracking Generator – **Option 010**
  - Sweep Filters
  - Perform Distance to Fault Plots
  - Perform Return Loss Sweeps
  - Perform VSWR Sweeps
- Digital Plots – **Included with any digital option**
  - Symbol Distribution
  - Constellation
  - Eye Diagram
- Power Profile – **Included with DMR option**
  - Shows Power Profile mask limits and pass/fail status for DMR subscriber power ramps.

# Analyzers Menu

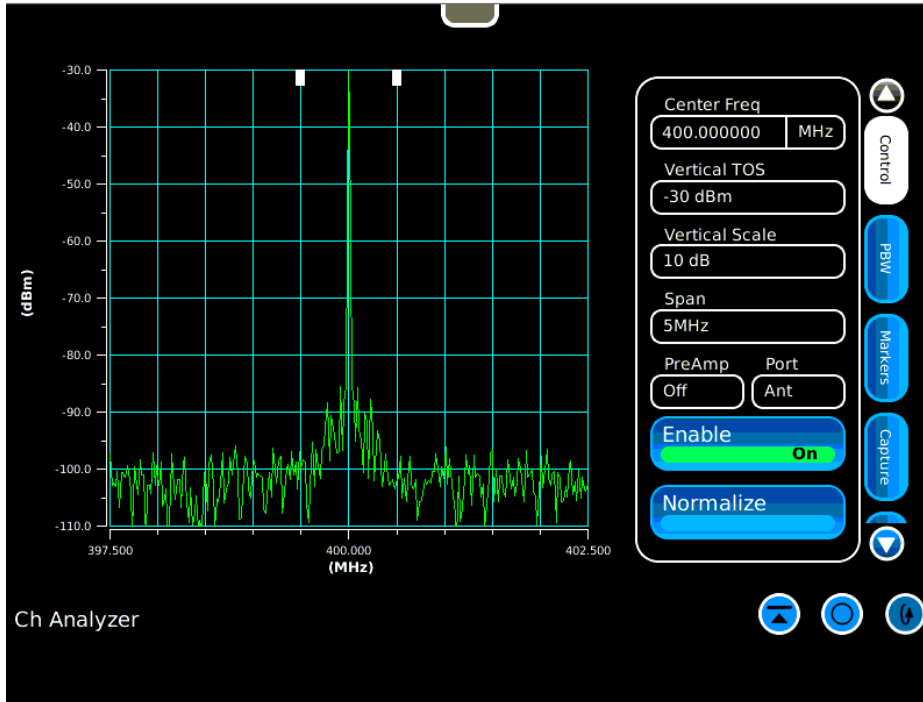
## Channel Analyzer





- The Channel Analyzer allows viewing of the RF Spectrum up to a 5 MHz span while allowing all other demod activities to continue.
- The RF frequency and Gain Control (AGC) can be changed by the Receiver Tile when minimized but must be maximized with the  icon to change other settings.

# Analyzers Menu

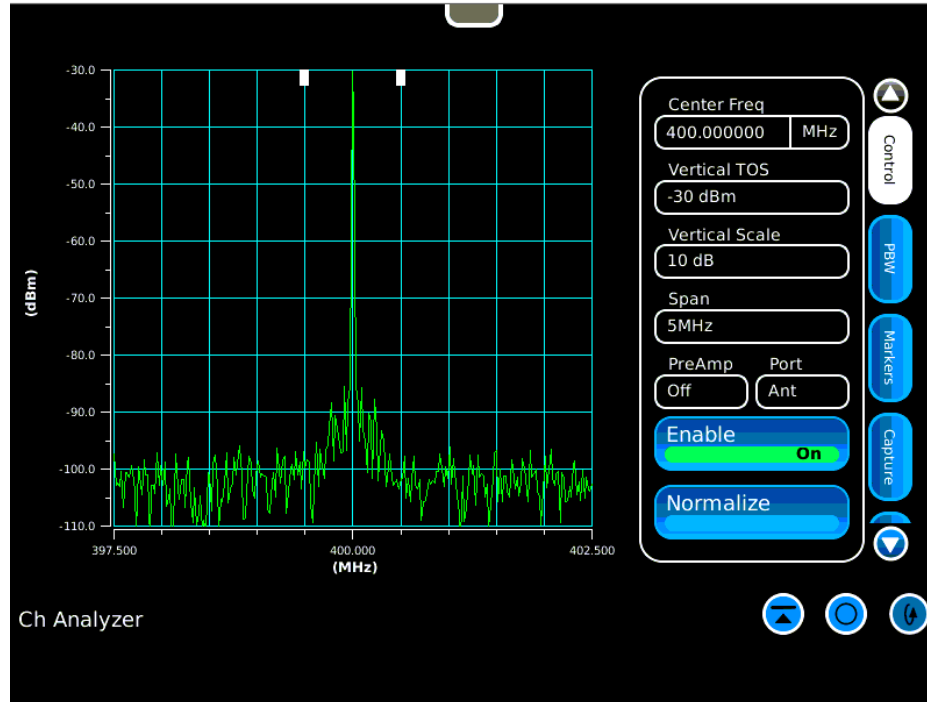
## Channel Analyzer - Maximized



- When the Channel Analyzer is maximized, many controls and features become available.
- The TAB group on the right side allow access to different types of controls. The Tab groups are:
  - Control
  - PBW (Power Bandwidth)
  - Markers
  - Capture
  - **OBW (Occupied Bandwidth) – Option 011**
- To choose a different tab, simply touch it.
- The Tab bar can be scrolled by touching a TAB and sliding it up or down or the arrows   may be used to scroll through the Tab list.

# Analyzers Menu

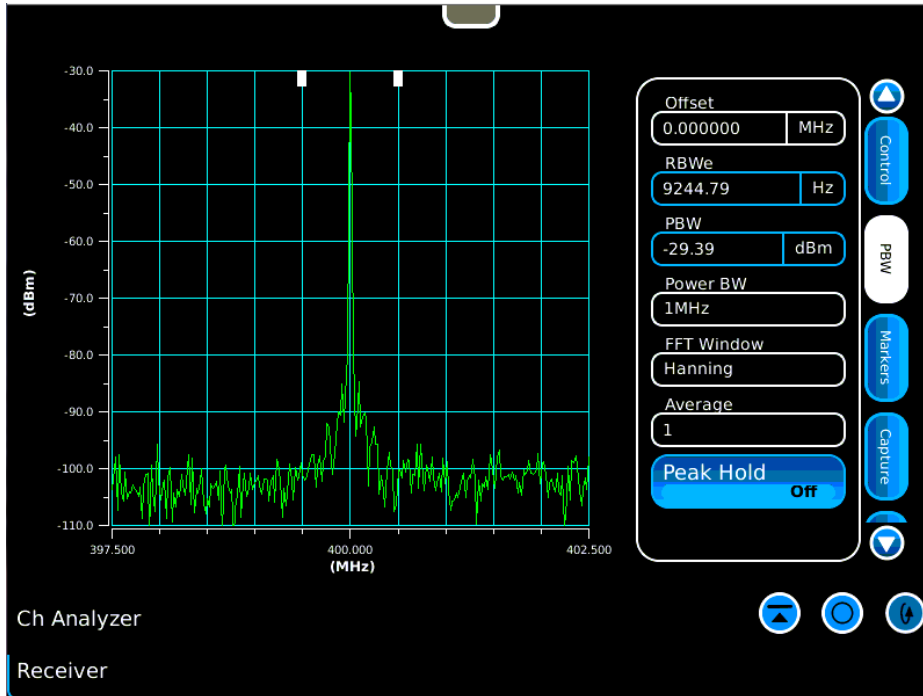
## Channel Analyzer – Maximized – Control Tab



- The Control Tab allows access to the following controls:
  - Center Frequency
  - Vertical Top of Scale
  - Vertical Scale factor 20, 15, 10, 5, 2 dB/div.
  - Span 5, 2, 1 MHz, 500, 200, 100 kHz, 50, 20 and 10 kHz
  - PreAmp control Auto, On, Off
    - With a 10 kHz Span and the PreAmp ON, a near -150 dBm noise floor can be seen to look for small signal levels from the ANT Port.
  - Enable On/Off. Analyzer stops sweeping when in the Off condition.
  - Normalize: Calibrates the RSSI Meter and the vertical scale of the analyzer.

# Analyzers Menu

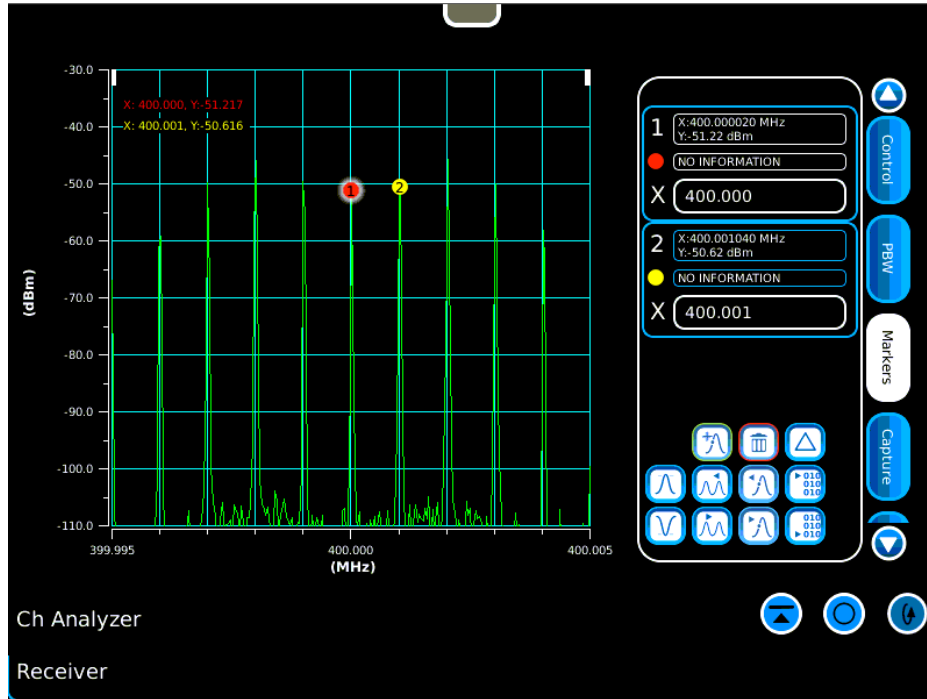
## Channel Analyzer – Maximized – PBW Tab




- The PBW Tab allows access to the following controls and readings:
  - Offset Control
    - Offsets the PBW Markers at the top of the display.
  - RBWe reading
    - This is the Equivalent Resolution BW for the FFT Analyzer.
  - PBW Reading
    - Summation of power in the analyzer trace between the white PBW markers at the top of the display.
  - Power BW Control: 1 kHz to 5 MHz in a 1,2,5 sequence.
    - Changes the width of the PBW Markers.
  - FFT Window Type: Hanning or FlatTop
  - Trace Averaging Value
  - Peak Hold Feature

# Analyzers Menu


## Channel Analyzer – Maximized – Markers Tab



- The Markers Tab allows access to the following controls and readings:
- Up to 6 markers can be enabled simultaneously.
  - Marker Frequency (Entry and indicator)
  - Marker Level
  - Delta Marker Readings
- Icons allow movement and control of markers
- The selected marker appears larger than unselected markers. To select a marker, touch the marker control of interest.

 Add a marker



 Remove selected marker

 Delta Marker – Press delta then press the other marker to view the delta value

  Peak Max/Min search

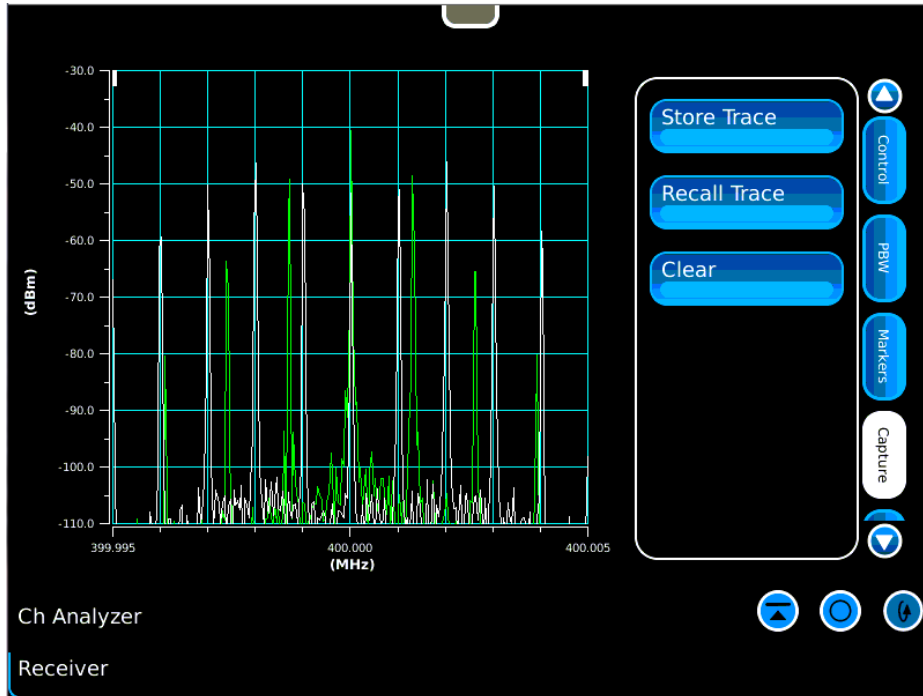
  Move marker to next peak or valley

  Move marker to the left or right

  Move the marker to the beginning or end of the sweep

# Analyzers Menu

## Channel Analyzer – Maximized – Capture Tab



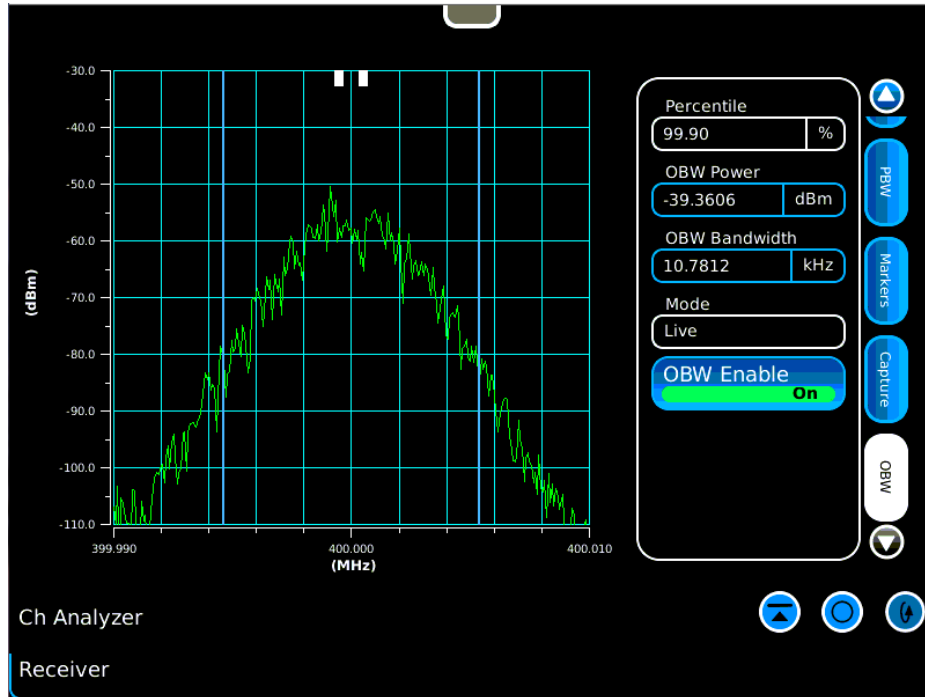
- The Capture Tab allows storage and recall of analyzer traces.
- Traces are saved as .csv files and may be exported for use with common spread sheet software.
- A recalled trace will be displayed in white while the live trace is displayed in green.
- The clear button will remove a recalled trace.



# Analyzers Menu



## Channel Analyzer – Maximized – OBW Tab - **Optional**

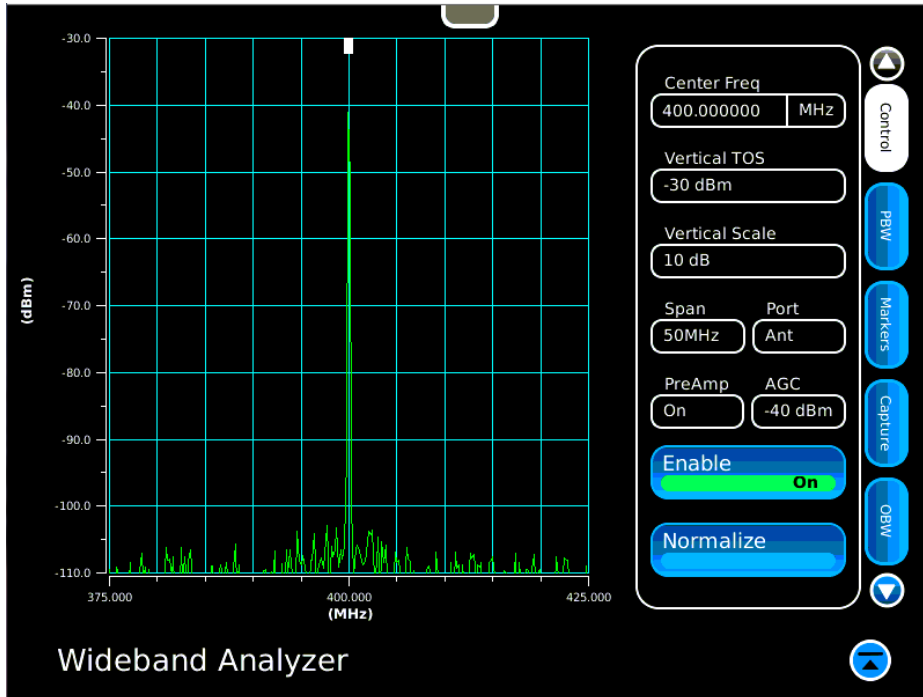


- The **Optional OBW** Tab provides a measurement of a signals power and occupied bandwidth.
  - A modulated signal will appear lower on the spectrum analyzer than what its actual power level is.
- Percentile: User entry to define the percent of bandwidth to be displayed by the blue markers. In this case, 99.9% of the RF Energy occupies 10.7812 kHz of this trace display.
- OBW Power: This is the actual RF Energy level that is within the blue markers. In this case, the level is -39.3606 dBm.
- Mode – Live, Peak Hold, Hold
  - Allows measurement of a static trace or a peak hold trace.
- OBW Enable: Turn this measurement On or Off



# Analyzers Menu

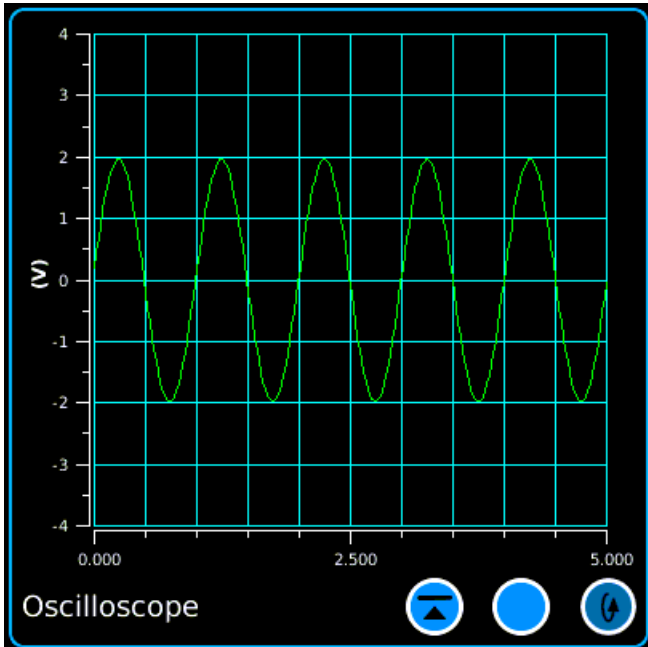
## Wideband Analyzer




- The Wideband Analyzer offers all of the same controls as the CH Analyzer with the following exceptions:
  - The Wideband Analyzer offers spans up to 50 MHz.
  - Demodulated audio may be choppy at spans greater than 5 MHz.
  - The AGC operates only in manual mode.
    - The AGC setting must be manually adjusted to best match the level of the incoming signal.

# Analyzers Menu

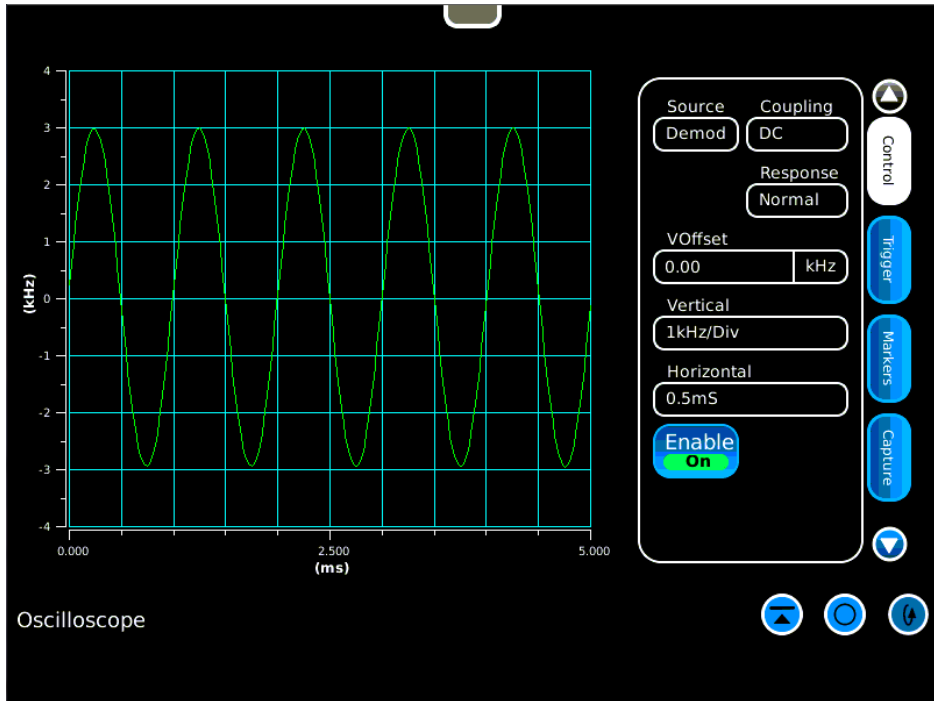
## Scope





- The scope allows viewing of audio signals in the time domain.
- To access scope controls, expand or maximize the scope with the  icon.

# Analyzers Menu

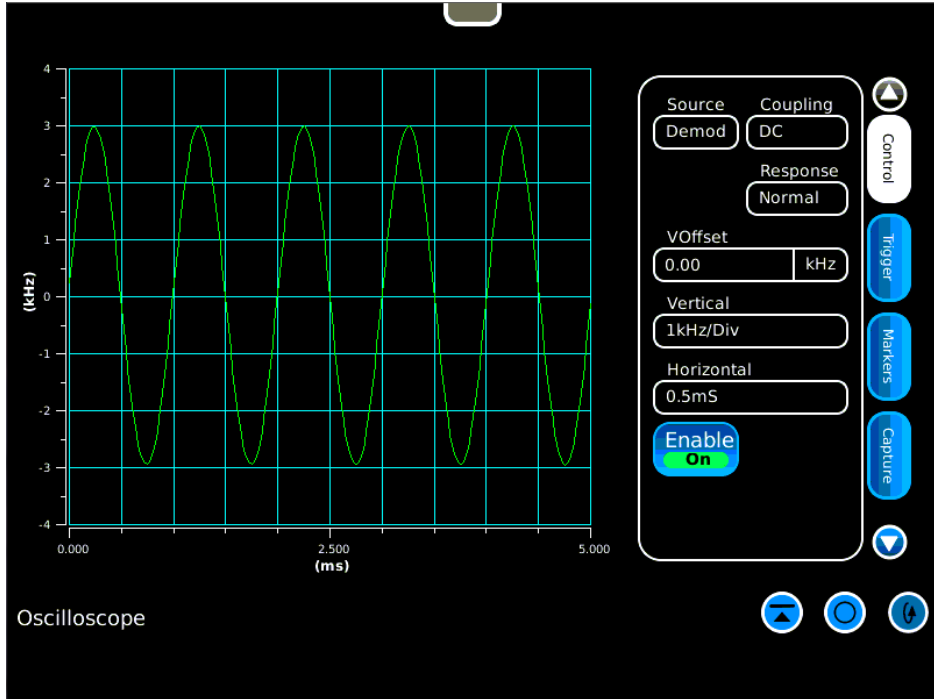
## Scope - Maximized



- When the scope is maximized, many controls and features become available.
- The TAB group on the right side allow access to different types of controls. The Tab groups are:
  - Control
  - Trigger
  - Markers
  - Capture
- To choose a different tab, simply touch it.
- The Tab bar can be scrolled by touching a TAB and sliding it up or down or the arrows   may be used to scroll through the Tab list.

# Analyzers Menu

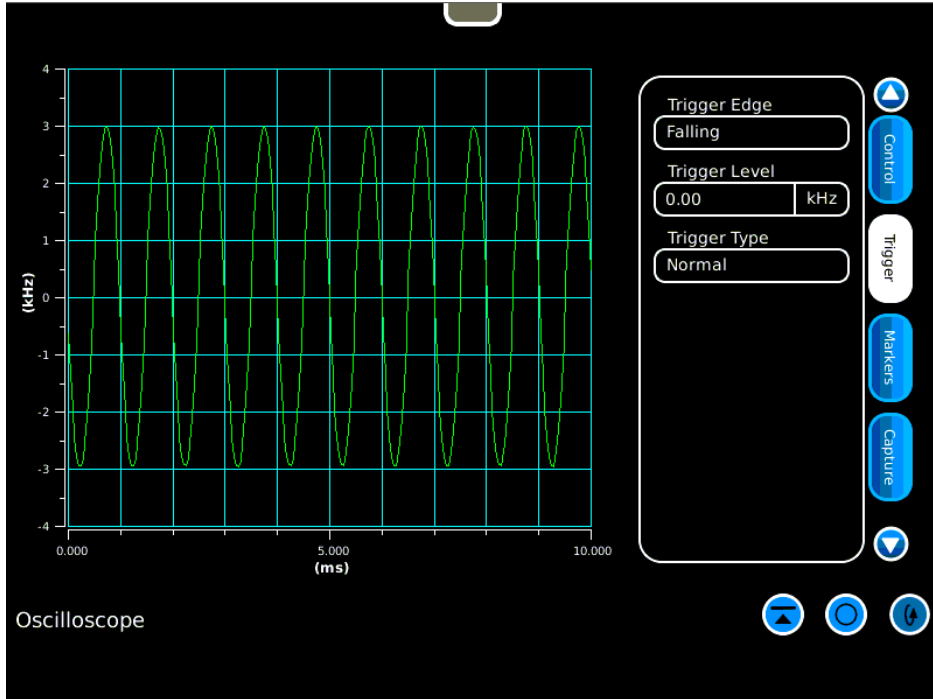
## Scope – Maximized – Control Tab



- The Control Tab allows access to the following controls:
  - Source: Scope Input Port, Receiver Demod Signal, Audio Input Port
  - Coupling
    - Scope: AC, DC, GND
    - Demod: DC
    - Audio IN: AC
  - Response
    - Normal
    - Fast: Provides faster scope refresh rate
  - Voffset: Move the trace up or down
  - Vertical: Choose a vertical scale from a list that is suitable for the input signal level
  - Horizontal: Choose a horizontal sweep rate from the following list:
    - 0.5 mS, 1 mS, 2 mS, 4 mS, 6 mS, 10 mS, 20 mS, 50 mS, 100 mS
  - Enable: On/Off (Off disables sweep)

# Analyzers Menu

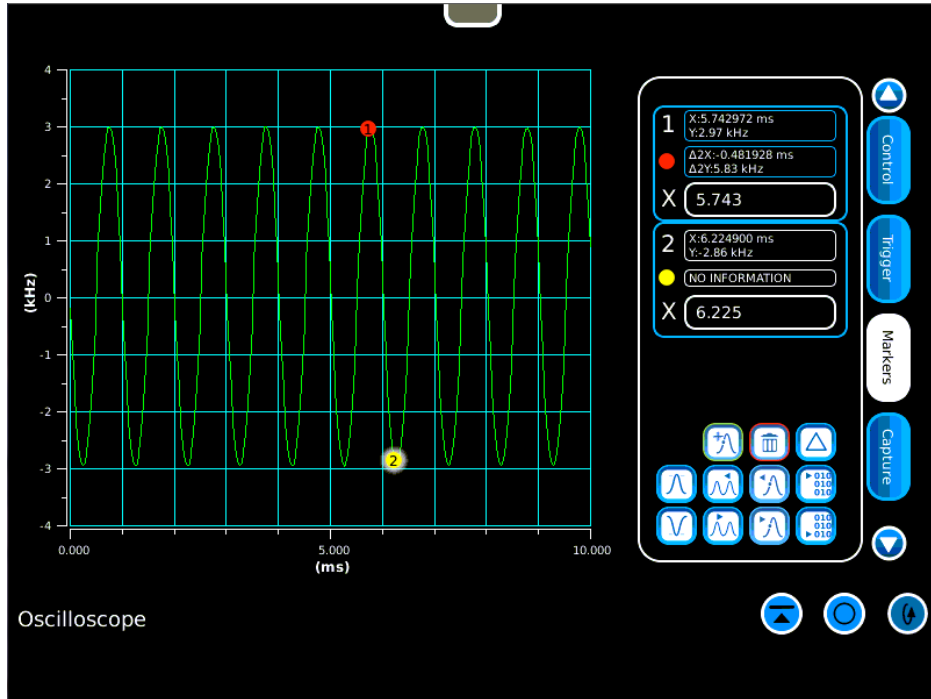
Scope – Maximized – Trigger Tab



- The Trigger Tab allows access to the following controls:
  - Trigger Edge
    - Falling
    - Rising
  - Trigger Level
  - Trigger Type
    - Normal
    - Auto

# Analyzers Menu

Scope – Maximized – Markers Tab



- The Markers Tab allows access to the following controls and readings:
- Up to 6 Markers can be enabled simultaneously.
  - Marker Time in mS
  - Marker Level
  - Delta Marker Readings
- Icons allow movement and control of markers
- The selected marker appears larger than unselected markers. To select a marker, touch the marker control of interest.



Move marker to the left or right



Move the marker to the beginning or end of the sweep



Add a marker



Remove selected marker



Delta Marker: Press delta then press the other marker to view the delta value



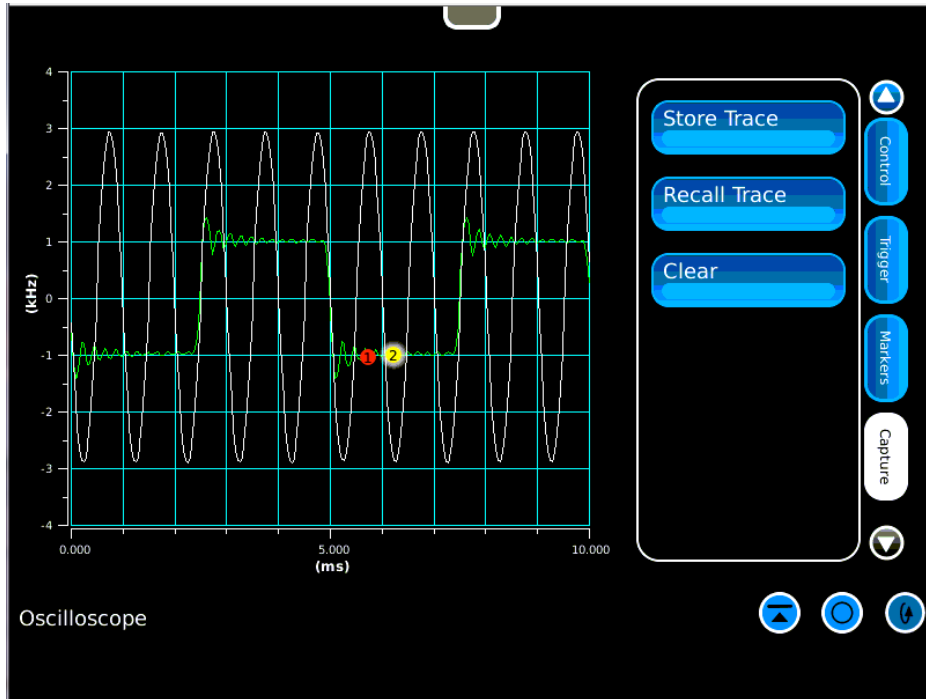
Peak Max/Min search



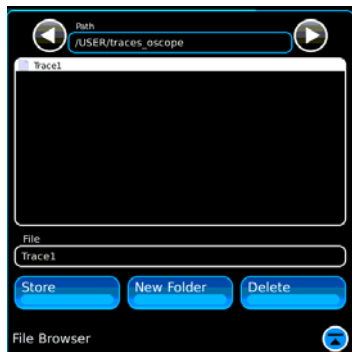
Move marker to next peak or valley

# Analyzers Menu

Scope – Maximized – Capture Tab



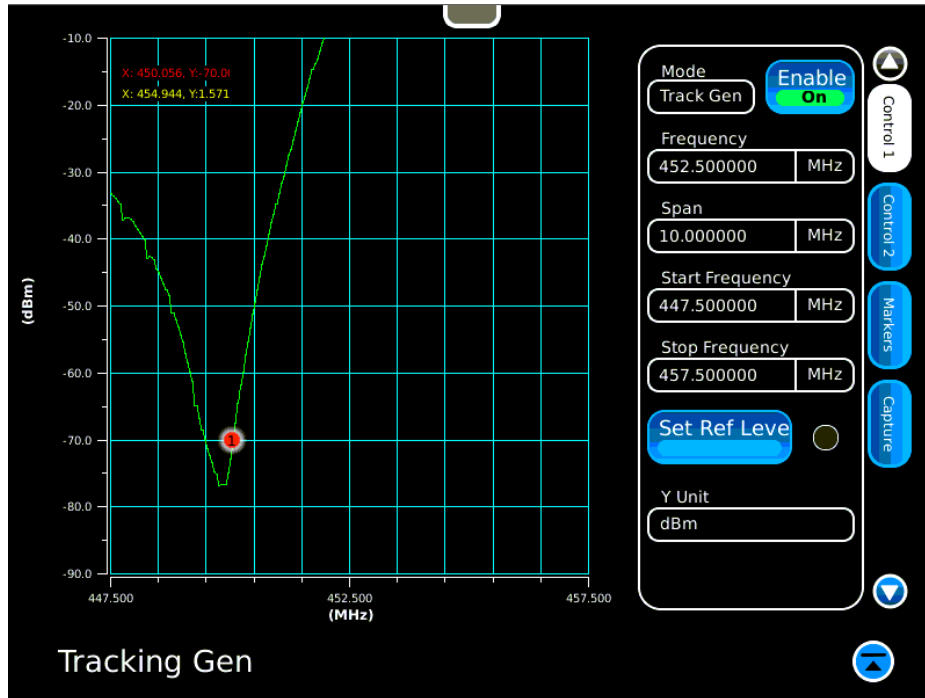
- The Capture Tab allows storage and recall of scope traces.
- Traces are saved as .csv files and may be exported for use with common spread sheet software.
- A recalled trace will be displayed in white while the live trace is displayed in green.
- The clear button will remove a recalled trace.



# Analyzers Menu



## Tracking Generator – Maximized Only – Option 010



- The Tracking Generator Option offers the following functions:
  - Tracking Generator
    - Used to align or test filters and RF Frequency Response.
  - Return Loss/VSWR Sweeps
    - Measure antenna performance and tuning
    - Requires use of an external Return Loss Bridge
  - Distance to Fault Plots (DTF)
    - Measure cable lengths and find transmission line faults
    - Requires a 50 Ohm Power Divider and 50 Ohm Termination



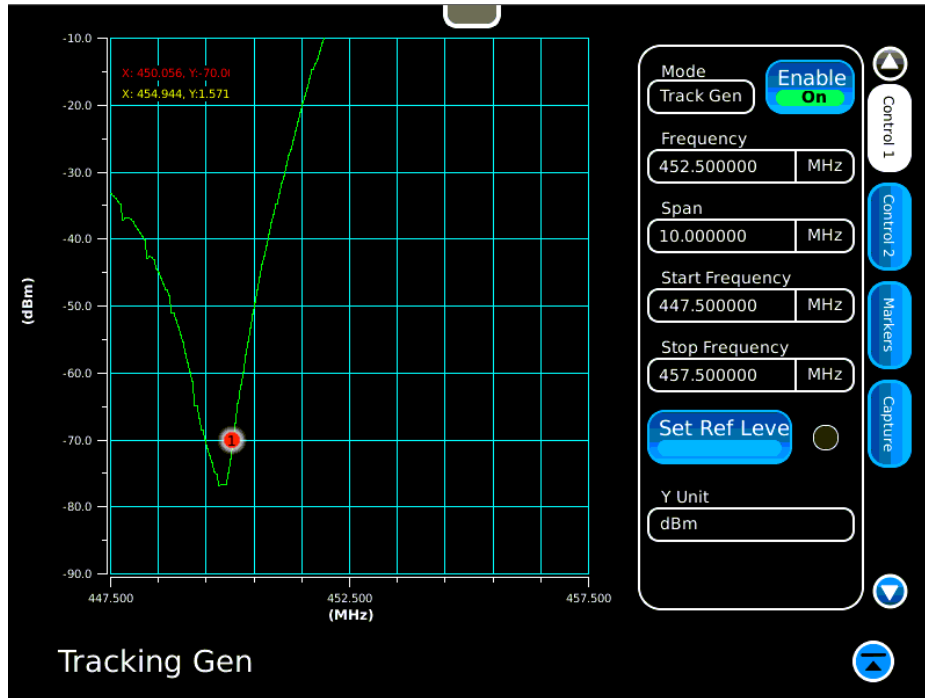
- 114348 – Precision DTF/VSWR Kit
  - Return Loss Bridge
  - Power Divider
  - 50 Ohm Termination
  - Test Cables





# Analyzers Menu



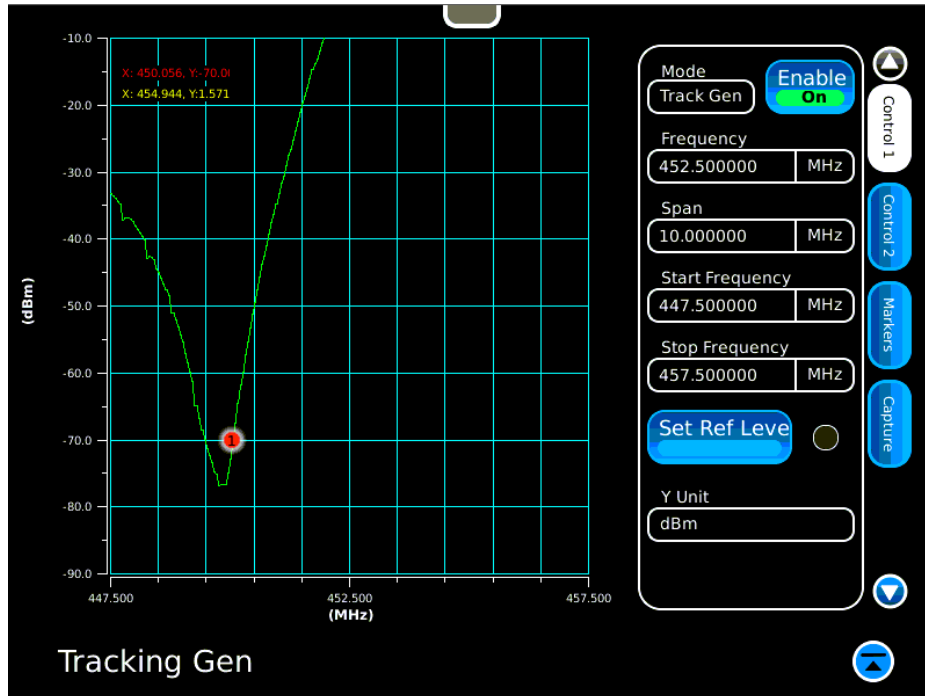
## Tracking Generator – Maximized Only – Option 010



- The TAB group on the right side allow access to different types of controls. The Tab groups are:
  - Control 1
  - Control 2
  - Markers
  - Capture
- To choose a different tab, simply touch it.
- The Tab bar can be scrolled by touching a TAB and sliding it up or down or the arrows   may be used to scroll through the Tab list.

# Analyzers Menu

## Tracking Generator – Control 1 Tab



The Tracking Generator Output is always routed to the GEN Output Port.

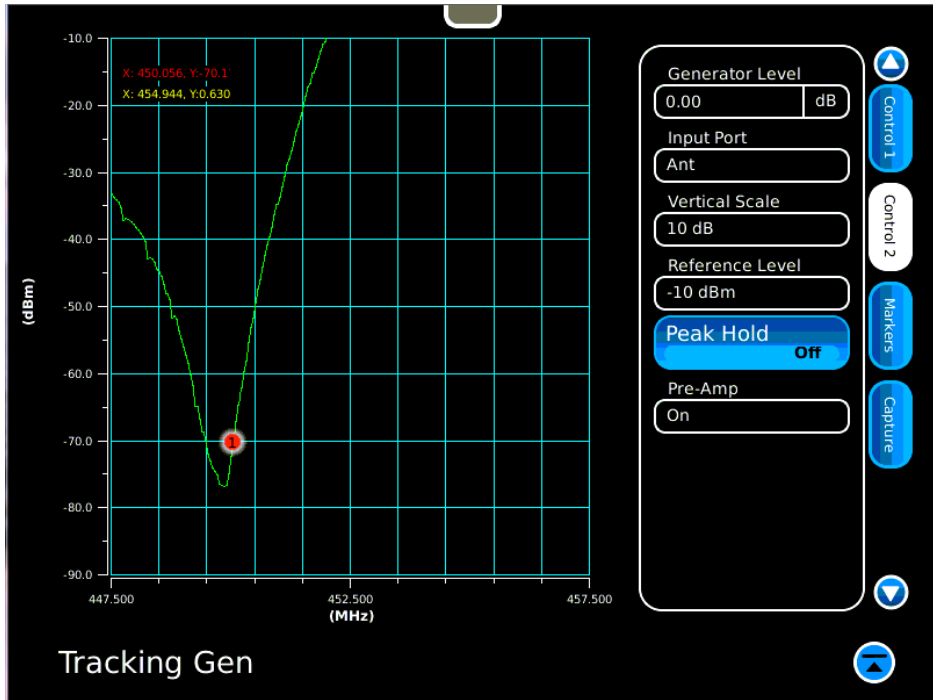
After Calibration with the Set Ref Level, the Y unit can be changed between:

- dBm (this will remove the Set Ref correction)
- dB (used for Return Loss)
- VSWR

- The Control 1 Tab allows access to the following controls:
  - Mode
    - Tracking Generator
      - 2 MHz to 1 GHz
      - Used for filter testing, VSWR and Return Loss sweeps
    - DTF
      - Used for Distance to Fault Plots
  - Control of the sweep can be done by two different methods:
    - Center Frequency and Span
    - Start/Stop Frequency
  - Set Reference Level
    - Calibrates a 0 dB reference
      - Connect test cables from the GEN Output to the ANT Input and touch the Set Ref Level button. Note: Make sure that the input is set to ANT on the Control 2 Tab.

# Analyzers Menu

## Tracking Generator – Control 2 Tab

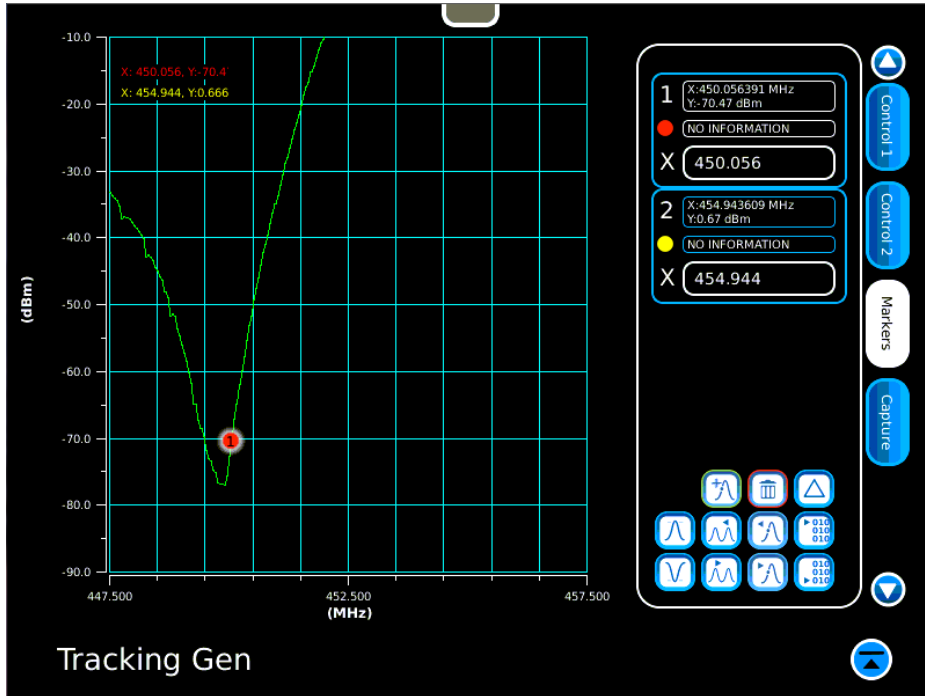


Setting the Reference Level to a lower value like -10 dBm will allow measurement maximum depth of a filter.

- The Control 2 Tab allows access to the following controls:
  - Tracking Generator Level (dB)
    - The Tracking Generator is unlevelled and 0 dB represents Maximum Output level
  - Input Port
    - ANT (Normal input)
    - TR
  - Vertical Scale
    - 2, 5, 10, 15 and 20 dB/div.
  - Reference Level
    - ANT: +10 to -70
    - TR: +50 to -30
  - Peak Hold
  - PreAmp Control
    - On/Off
    - On – ANT – Ref Level: -10 to -90

# Analyzers Menu

## Tracking Generator – Markers Tab



- The Markers Tab allows access to the following controls and readings:
- Up to 6 markers can be enabled simultaneously.
  - Marker Frequency (Entry and Indicator)
  - Marker Level
  - Delta Marker Readings
- Icons allow movement and control of markers
- The Selected marker appears larger than unselected markers. To select a marker, touch the marker control of interest.



Add a marker



Remove selected marker



Delta Marker: Press delta then press the other marker to view the delta value



Peak Max/Min search



Move marker to next peak or valley



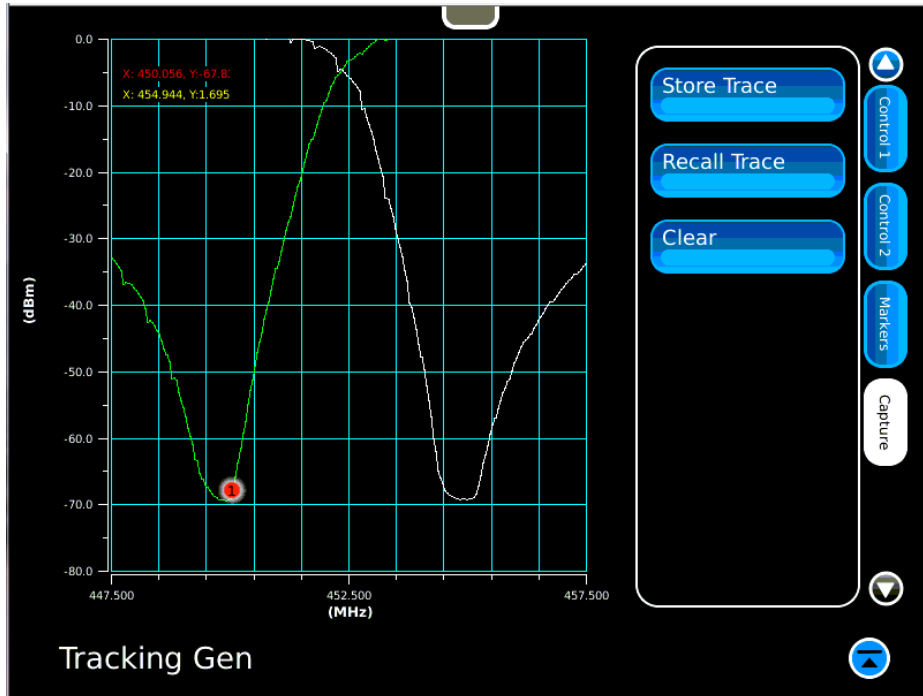
Move marker to the left or right



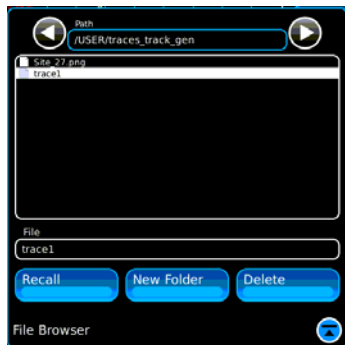
Move the marker to the beginning or end of the sweep

# Analyzers Menu

## Tracking Generator – Capture Tab



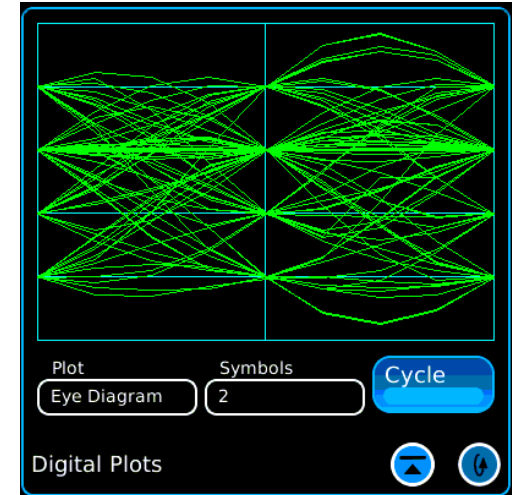
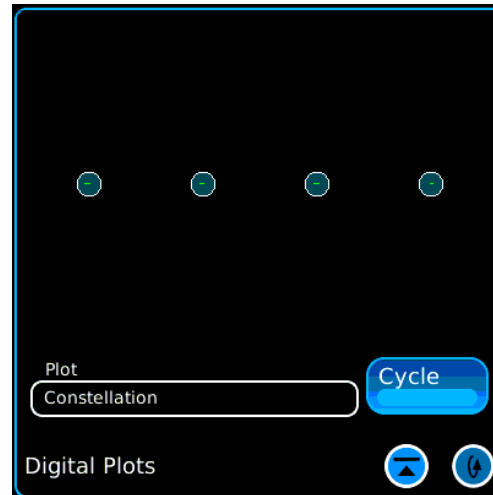
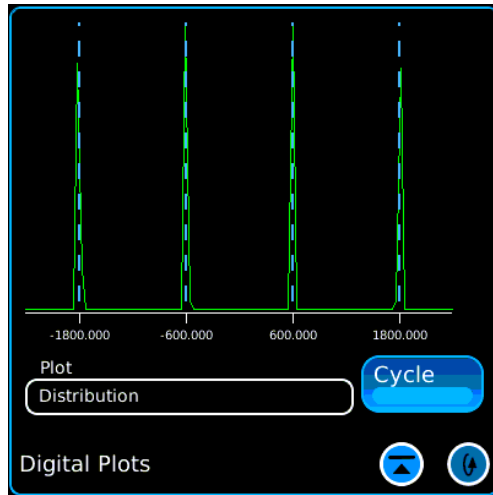
- The Capture Tab allows storage and recall of Tracking Generator sweeps.
- Traces are saved as .csv files and may be exported for use with common spread sheet software.
- A recalled trace will be displayed in white while the live trace is displayed in green.
- The clear button will remove a recalled trace.



# Analyzers Menu



Digital Plots – Optional Included with P25, DMR, NXDN, dPMR, ARIB T98

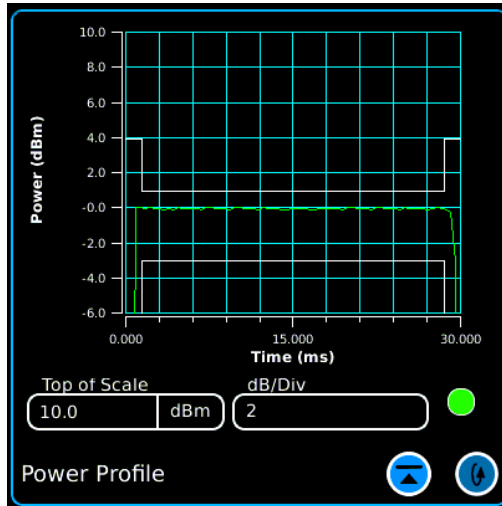


- Digital Plots Tile offers 3 different graphical views of a digital signal
  - Distribution Plot: Shows how often each symbol is accessed.
  - Constellation Plot: Shows Symbol Deviation symmetry.
  - Eye Diagram: Symbol clock error will cause the signal to be unstable around the center vertical line.
- The Cycle button will rotate through the three different views.
- The Distribution and Constellation displays can clearly show issues with symbol deviation.
- The Eye diagram can show issues with Symbol Clock Error.

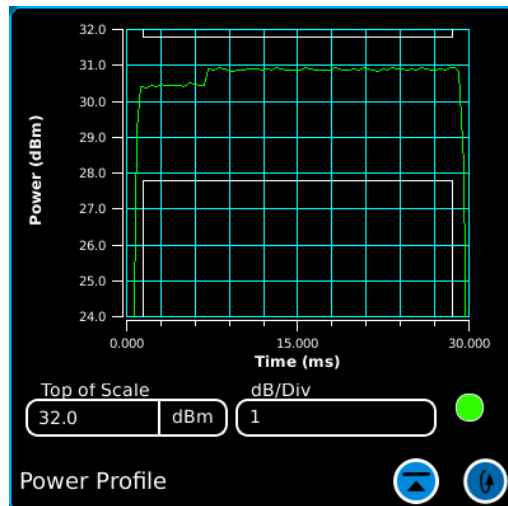
# Analyzers Menu



## Power Profile – Optional Included with DMR



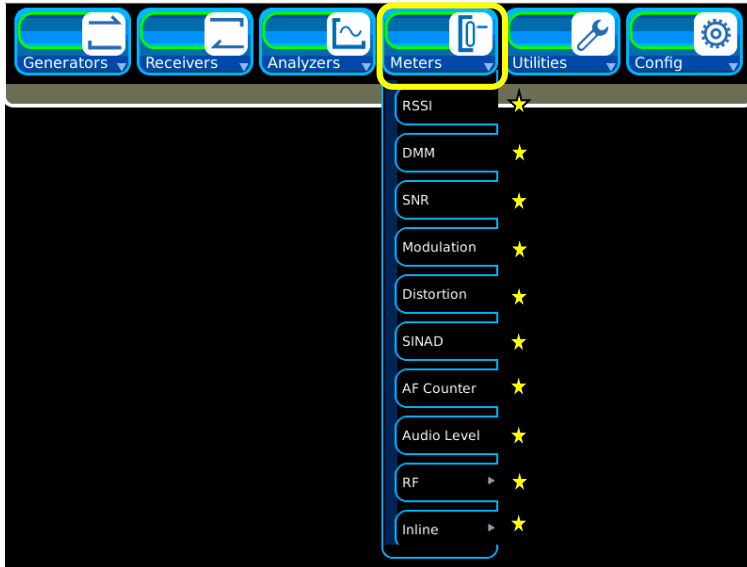
- The Power Profile Digital Plot can visually show issues with magnitude error.
- A mask is provided that the power ramp should fall within. An indicator light is green if the ramp is within the mask and red if any part of the ramp exceeds the mask.



- This Power ramp shows an issue that is within the mask but results in a magnitude error of more than 2%.

# Meters Menu

## Meter Selections

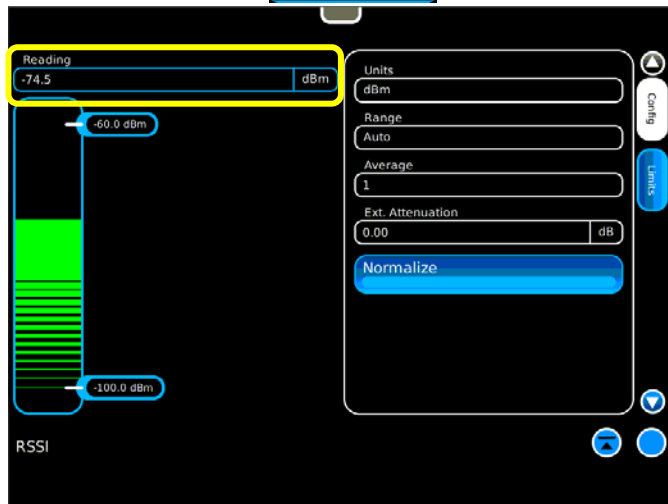
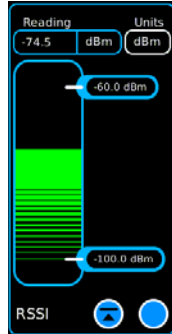


- The Meters Menu selection allows access to the following stand alone meter functions:
  - RSSI
  - DMM
  - SNR (Option 22)
  - Modulation
  - Distortion
  - SINAD
  - AF Counter
  - Audio Level
  - RF
    - RF Error
    - RF Power
  - Inline: Option 12 (Bird 5017D) Option 20 (R&S NRTZ)
    - Power
    - Config



# Meters Menu

## RSSI Meter



- The RSSI Meter has three different sizes with each larger size offering more details.
- Config Tab
  - Units: dBm, Watts, uWatts, uVolts
  - Range: Various ranges are available depending on the units selection. The default is auto range.
  - Average: Default is 1 but higher averaging values may be entered to settle unstable readings.
  - Ext. Attenuation: This control is also on the Receiver Tile. A negative value entry will compensate the reading to account for cable loss or external attenuators.
  - Normalize
    - This feature will calibrate the RSSI Meter for maximum accuracy.
- Limits Tab
  - Allows entry of upper and lower limit values.
  - Provides controls to enable use of upper and lower limits independently.
  - This is common to all meters.

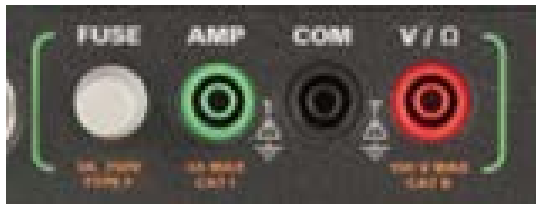
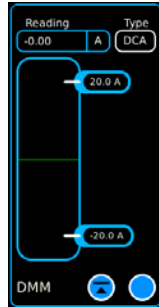
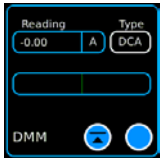
- Meter Color codes

- Black: No limit is set
- Red: Reading is above the upper limit
- Green: Reading is within limits
- Blue: Readings is below the lower limit



# Meters Menu

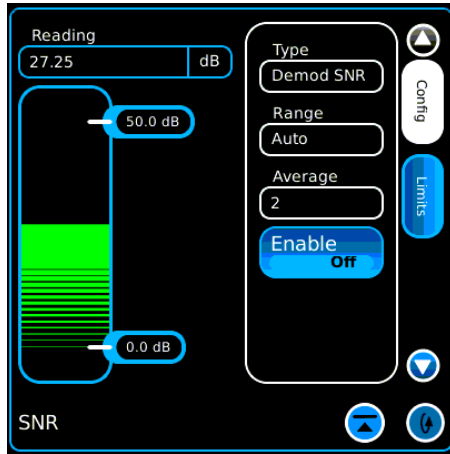
## DMM Meter



- The DMM Meter has three different sizes with each larger size offering more details.
- Config Tab
  - Range: Various ranges are available depending on the type selection. The default is auto range.
  - Type: DCA, DCV, ACA, ACV
  - Average: Default is 1 but higher averaging values may be entered to settle unstable readings.
  - Peak Hold Enable
  - Peak Hold Clear
  - Peak Hold Reading
  - Enable: Used to disable or enable the readings.
- Up to 20 amps can be measured with a current shunt (AC24011) using the COM and V/ohms input.
- Limits Tab
  - Allows entry of upper and lower limit values.
  - Provides controls to enable use of upper and lower limits independently.
  - This is common to all meters.

# Meters Menu

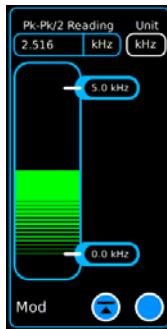
## SNR Meter – Option 022



- The SNR Meter
  - Type
    - Demod SNR: Used for transmitter testing
      - Measured signal is the 8800SX Receiver Demod signal.
      - Transmitter is externally modulated with AF Generator 1.
    - Audio SNR: Used for receiver testing
      - Measured signal is Audio IN
      - The 8800SX Modulator is used to modulate the generator that injected into the radio receiver.
  - Range
    - Auto or fixed ranges
  - Enable: Start or stop the SNR Meter operation.
- Limits Tab
  - Allows entry of upper and lower limit values.
  - Provides controls to enable use of upper and lower limits independently.
  - This is common to all meters.

# Meters Menu

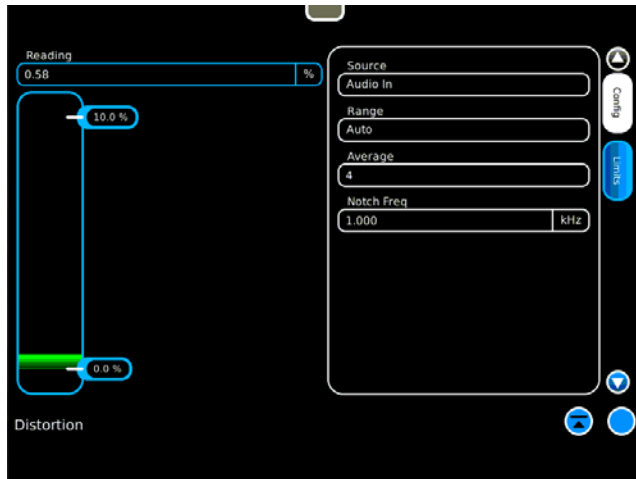
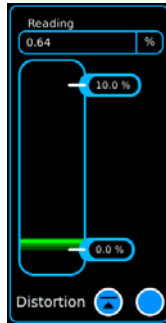
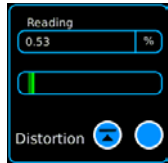
## Modulation Meter



- The Modulation Meter has three different sizes with each larger size offering more details. This meter measured the modulation value in either kHz for FM Deviation or % for AM Modulation determined by the Receiver Demod type selection.
- Config Tab
  - Range
  - Average
  - Type: Peak Plus, Peak Minus, PK-PK/2, RMS
  - Units: kHz, % or dB
  - Set Relative Function: Valid only when units setting is set to dB. This will establish a new 0 dB reference.
  - Peak Hold Function: Causes only the highest reading to be displayed.
  - Reset Meter Function: Resets the peak hold reading.
- Limits Tab
  - Allows entry of upper and lower limit values.
  - Provides controls to enable use of upper and lower limits independently.
  - This is common to all meters.

# Meters Menu

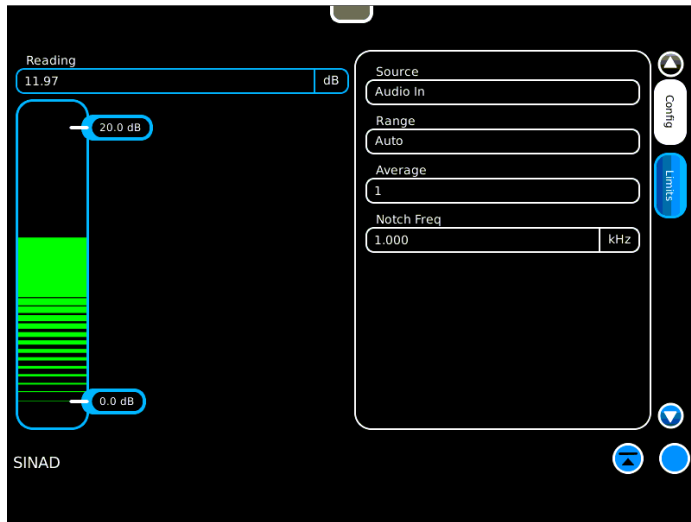
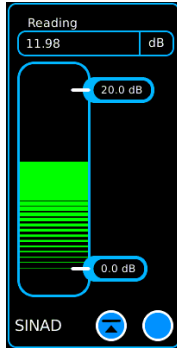
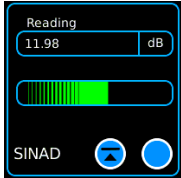
## Distortion Meter



- The Distortion Meter has three different sizes with each larger size offering more details.
- Config Tab
  - Source: Audio In or Receiver Demod
  - Range: Auto or fixed
  - Average: Sets the number of readings to average.
    - For unstable signals, increase averaging.
  - Notch Frequency: **Option 021**
    - The Standard Notch Frequency is 1 kHz.
    - Option 021 allows the notch frequency to be varied between 1000 Hz and 5000 Hz.
- Limits Tab
  - Allows entry of upper and lower limit values.
  - Provides controls to enable use of upper and lower limits independently.
  - This is common to all meters.

# Meters Menu

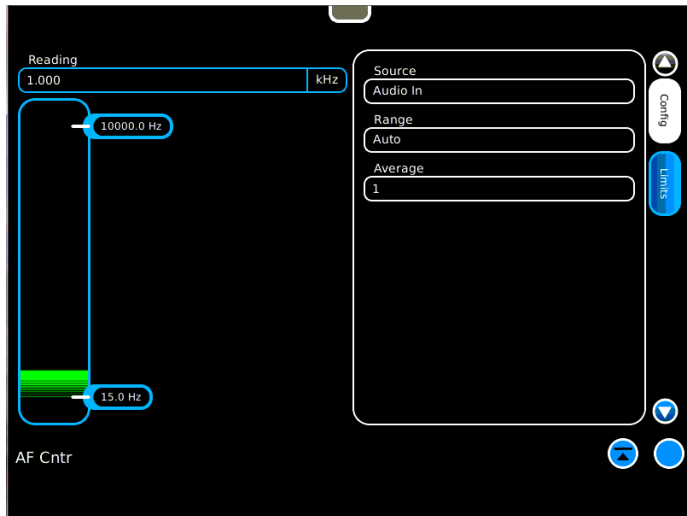
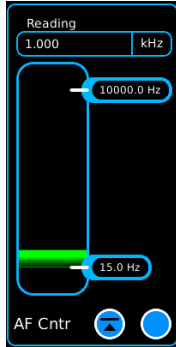
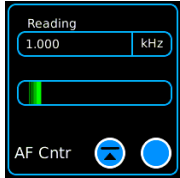
## SINAD Meter



- The SINAD Meter has three different sizes with each larger size offering more details.
- Config Tab
  - Source: Audio In or Receiver Demod
  - Range: Auto or fixed
  - Average: Sets the number of readings to average.
    - For unstable signals, increase averaging.
  - Notch Frequency: **Option 021**
    - The Standard Notch Frequency is 1 kHz.
    - Option 021 allows the notch frequency to be varied between 1000 Hz and 5000 Hz.
- Limits Tab
  - Allows entry of upper and lower limit values.
  - Provides controls to enable use of upper and lower limits independently.
  - This is common to all meters.

# Meters Menu

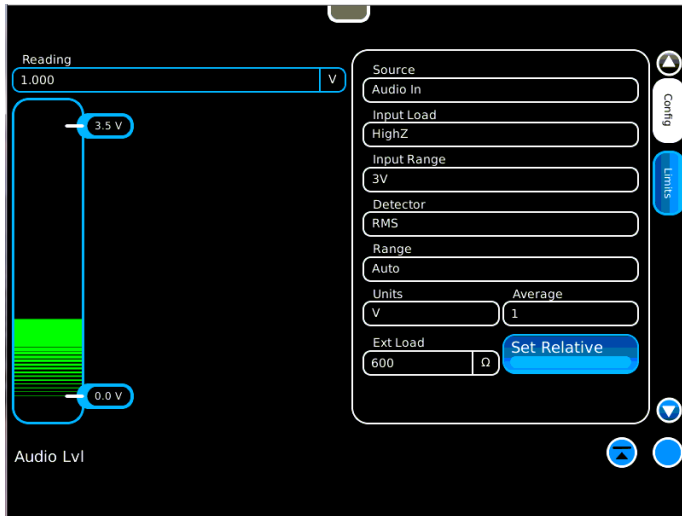
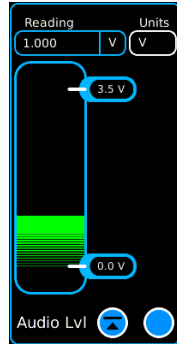
## AF Counter



- The AF or Audio Frequency Counter has three different sizes with each larger size offering more details.
- Config Tab
  - Source: Audio In or Receiver Demod
    - Uses include measuring PL/CTCSS Tone Frequencies
  - Range: Auto or fixed
  - Average: Sets the number of readings to average.
    - For unstable signals, increase averaging
- Limits Tab
  - Allows entry of upper and lower limit values.
  - Provides controls to enable use of upper and lower limits independently.
  - This is common to all meters.

# Meters Menu

## Audio Level Meter

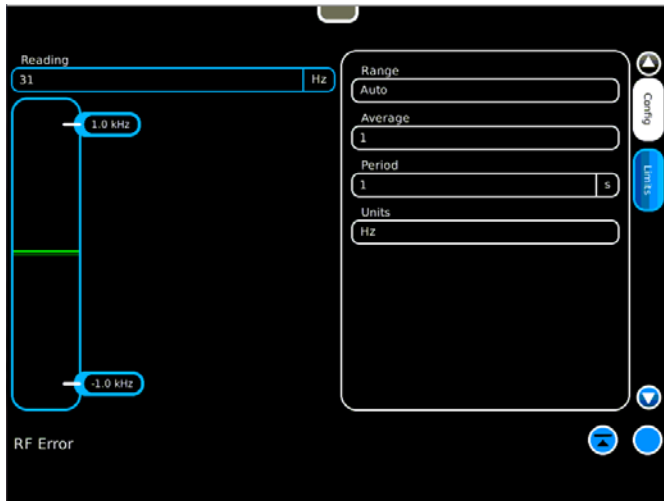
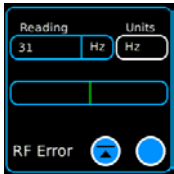


- The Audio Level Meter has three different sizes with each larger size offering more details.
- Config Tab
  - Source: Audio In or Receiver Demod
    - Uses include measuring PL/CTCSS Tone Frequencies
  - Input Load: High Z, 150, 600 or 1K ohm internal loads
  - Input Range: 3 V or 30 V
  - Detector: RMS, Peak+, Peak-, Pk2Pk
  - Range: Auto or fixed
  - Units: V, mV, dBuV, dBm, Watts, dBr
  - Average: Sets the number of readings to average.
    - For unstable signals, increase averaging
  - External Load Value: Enter an external load factor to calculate dBm when using an external load.
  - Set Relative Function: Set a 0 dB Reference for dBr mode
- Limits Tab
  - Allows entry of upper and lower limit values.
  - Provides controls to enable use of upper and lower limits independently.



# Meters Menu

## RF Error Meter

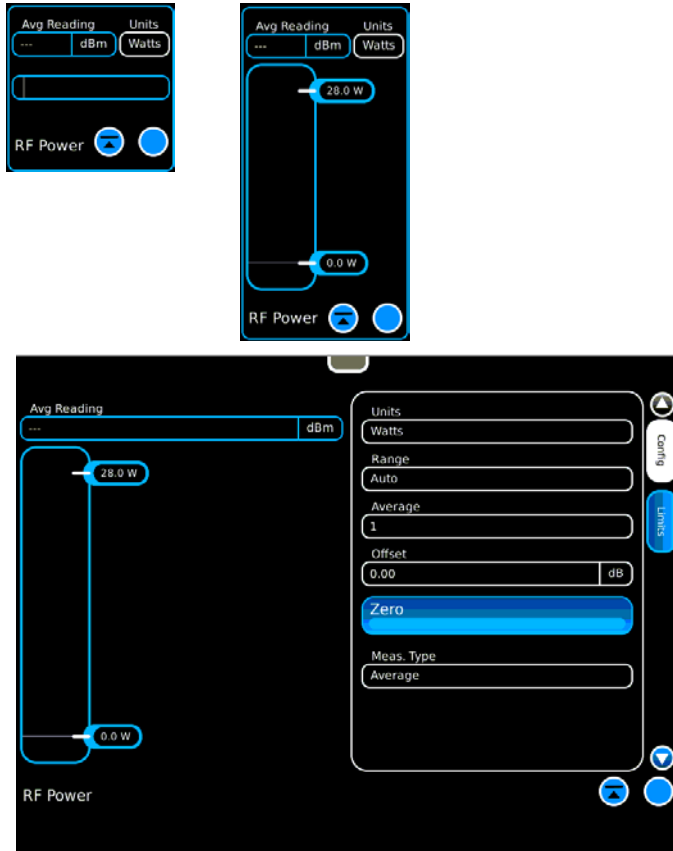


- The RF Error Meter has three different sizes with each larger size offering more details.
- Config Tab
  - Range: Auto or fixed
  - Average: Sets the number of readings to average.
    - For unstable signals, increase averaging.
    - Default value is 1
  - Period: Default value is 1 second
  - Units: Hz or PPM
- Limits Tab
  - Allows entry of upper and lower limit values.
  - Provides controls to enable use of upper and lower limits independently.

The RF Error Meter measures the difference in frequency between the 8800SX receiver frequency and the incoming signal.

# Meters Menu

## RF Power Meter

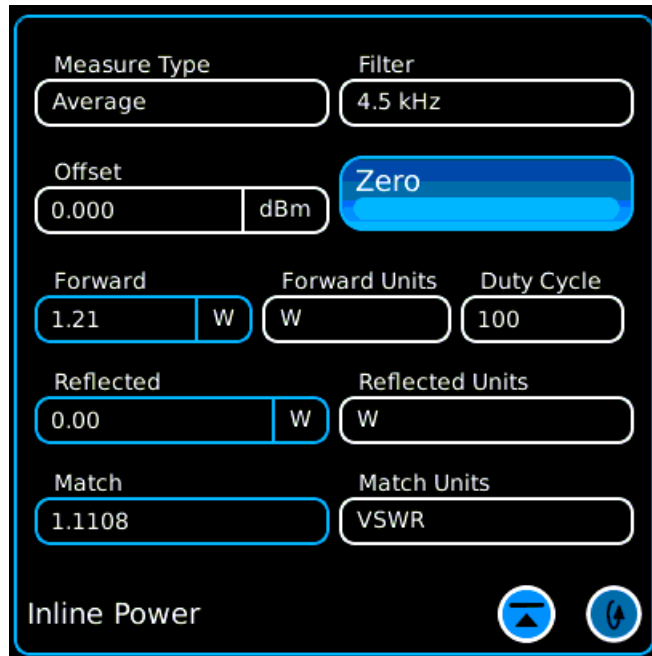


This is a Broadband Power Meter that will show RF energy at the TR Port. The receiver frequency provides a correction factor for the power meter for best accuracy.

- The RF Power Meter has three different sizes with each larger size offering more details.
- Config Tab
  - Units: Watts or dBm
  - Range: Auto or fixed
  - Average: Sets the number of readings to average.
    - For unstable signals, increase averaging.
    - Default value is 1
  - Offset: A negative entry will correct the power meter for an external cable or attenuator loss.
  - Zero Function: Zeros DC Offset from the Broadband Power Meter. Must be done prior to using for maximum accuracy.
  - Meter Type: Average, Minimum, Maximum
  - Clear: Resets minimum or maximum readings
- Limits Tab
  - Allows entry of upper and lower limit values.
  - Provides controls to enable use of upper and lower limits independently.

# Meters Menu

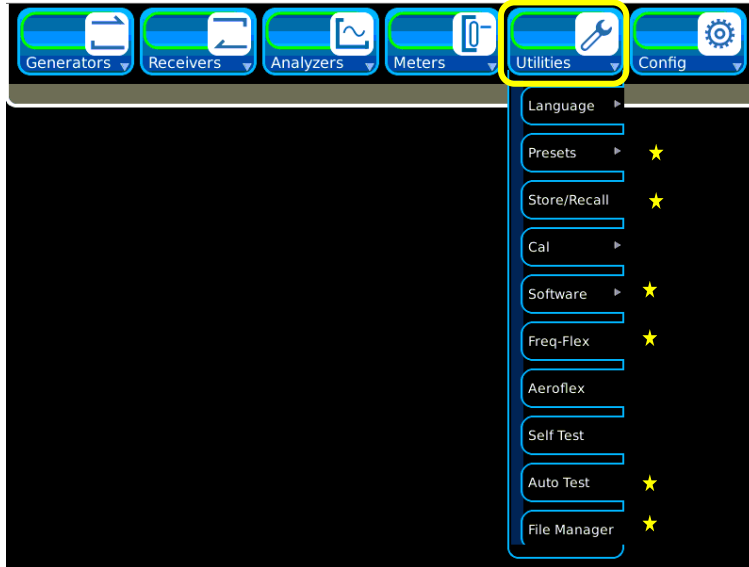
## Inline Power Meter – Option 012



- The Inline Power Meter (**Option 012**) is an unterminated thru-line power meter with an input for a transmit signal and an output to an external load. This meter is capable of power measurements to 500 Watts Peak.
- The Power Meter can show both forward and reflected power measurements along with VSWR or Return Loss match making it ideal for testing base stations and transmission lines to the matching antenna.
- This meter can be used to measure both FM, AM and TDMA signals.
  - Set the Duty Cycle to 50% to measure DMR signals which are on for 30 mS and off for 30 mS.
- Units
  - Power can be measured in Watts or dBm.
- Offset entry allows a negative offset to compensate for external cable loss.
- Match can be displayed as VSWR, Return Loss or RHO
- A Configuration Screen is available to allow entry of upper and lower limits for color coded pass/fail tests.
- **Option 013** provides metering for use with an External Bird Model 5017D.
- **Option 020** provides metering for use with an External R/S NRTZ Power Sensor.

# Utilities Menu

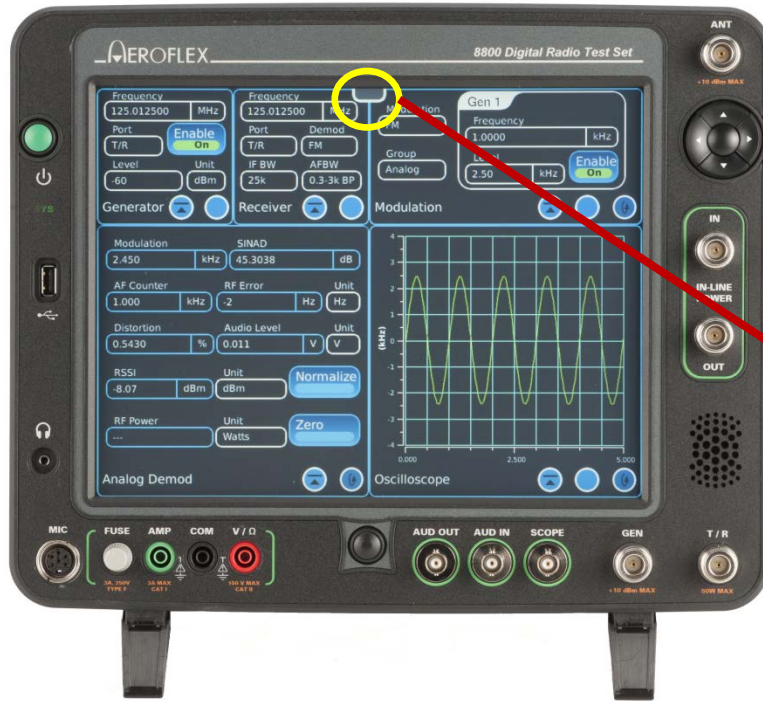
## Utilities Selections



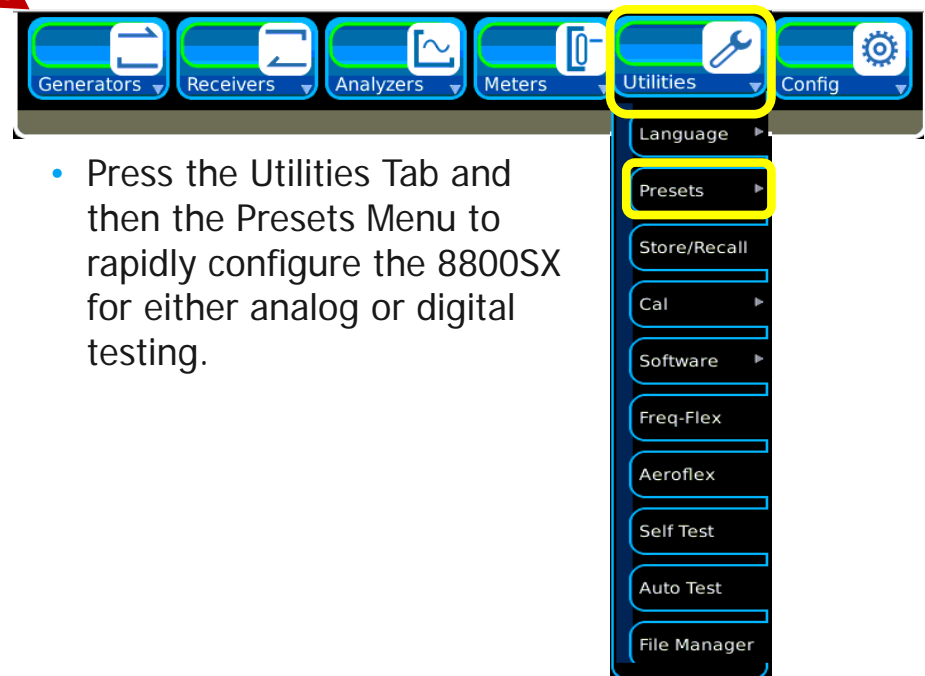
- The Utilities Menu selection allows access to the following stand alone meter functions:
  - Selection of **optional** languages
  - Presets
    - Three standard presets
    - Seven user definable presets
  - Store/Recall setups with pre-configured samples
  - Cal
  - Software
    - Option installation
    - System information/network settings
    - Software update
  - Freq Flex – Timebase optimization
  - Aeroflex
  - Self-Test
  - Auto-Test – **Optional Automated OEM Radio Alignment**
  - File Manager
    - Transfer files to and from the 8800SX

# Utilities Menu

## Presets



- The small tab at the top center of the display allows access to the launch bar.
- Simply touch the tab and the launch bar will expand.

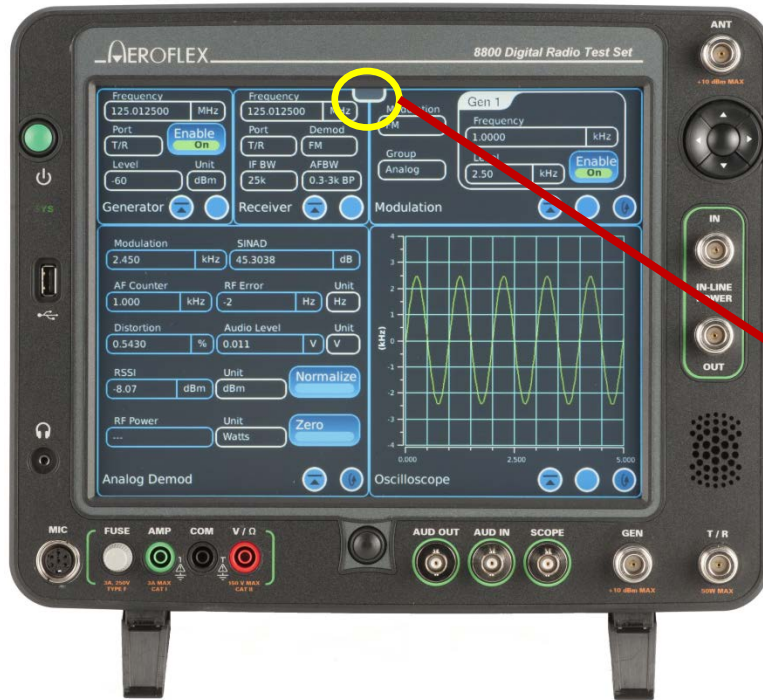


- Press the Utilities Tab and then the Presets Menu to rapidly configure the 8800SX for either analog or digital testing.

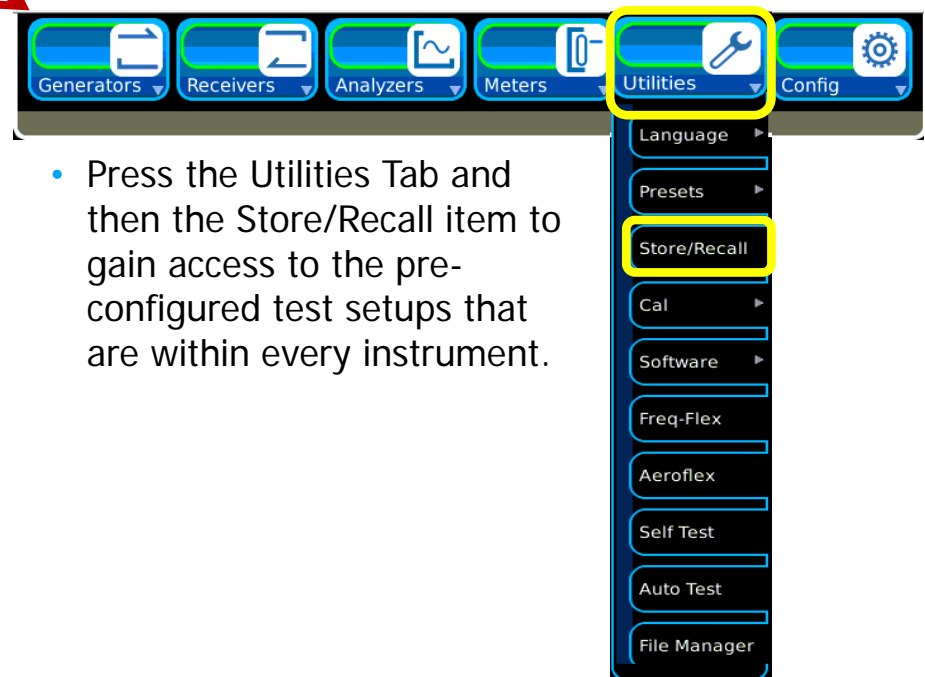
Presets quickly configure standard tile selections and locations.

# Utilities Menu

## Store/Recall



- Setup files store complete instrument configurations that include all settings.
- To open the menu, simply touch the tab and the menu will expand.

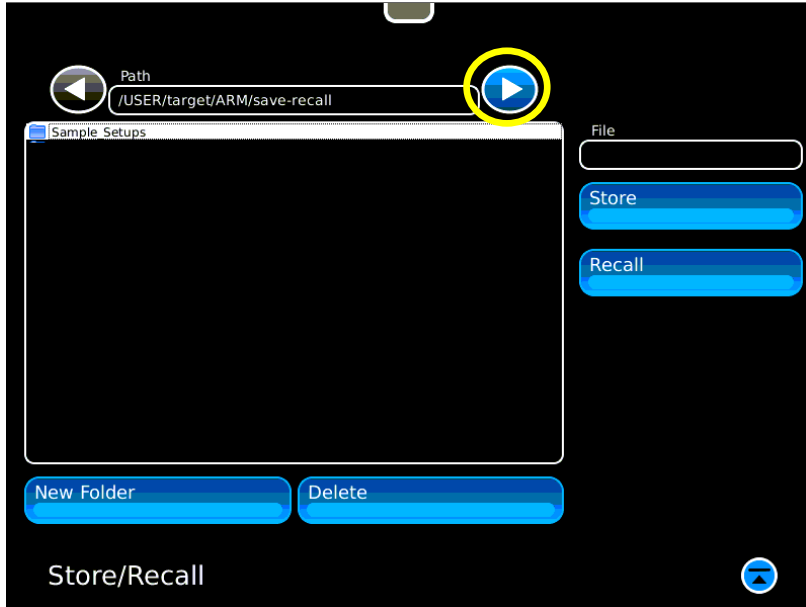



- Press the Utilities Tab and then the Store/Recall item to gain access to the pre-configured test setups that are within every instrument.

Every 8800SX is pre-configured with a large group of sample setups to configure the instrument for a variety of basic tests.

# Utilities Menu

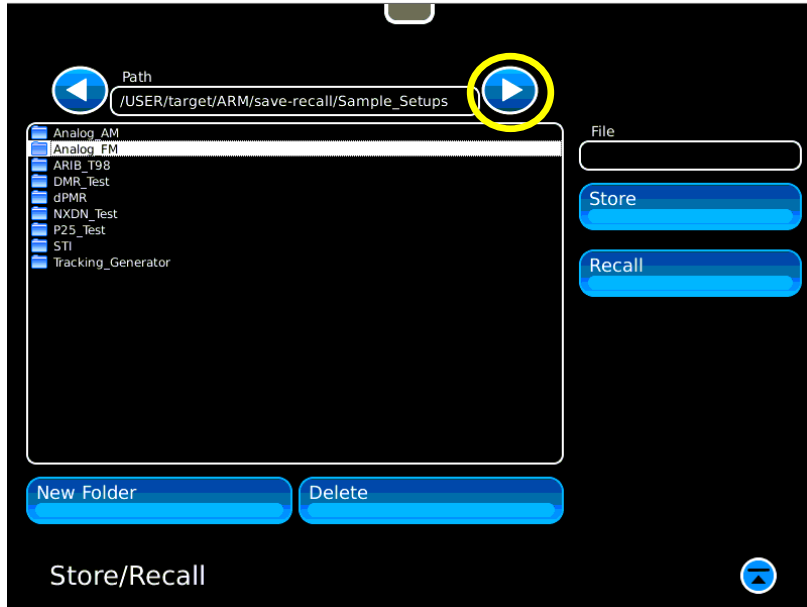
## Store/Recall Navigation




- When first entering the Store/Recall Menu, a folder named “Sample Setups” will be visible.
- To enter the folder, touch or highlight the Sample Setups item on the list then press the  icon to enter the folder.

# Utilities Menu

## The Sample Setups



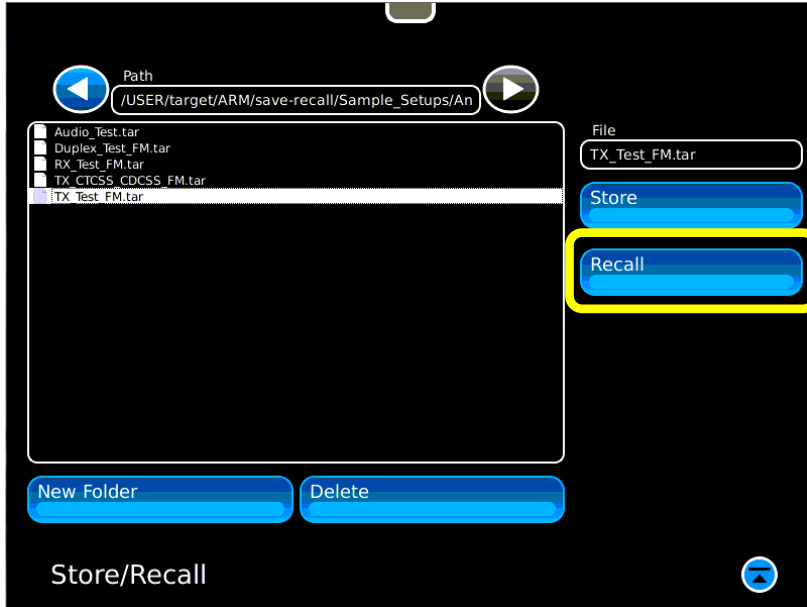
- After entering the Sample Setups folder, there are a variety of basic test folders available.
- Highlight the Analog FM folder and press the  icon to enter the folder.



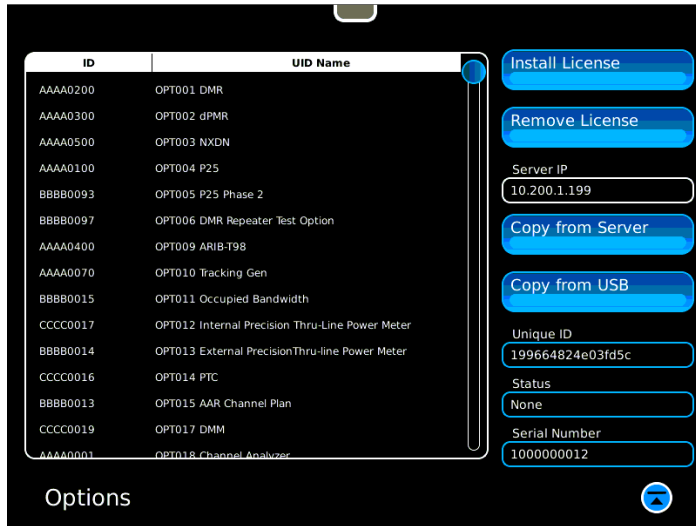
# Utilities Menu



## Configure the 8800SX for FM Transmitter Test



- Highlight the TX\_Test\_FM setup file and press the Recall button.
- This will configure the 8800SX to perform basic FM transmitter tests.



- The Software Options Screen displays all installed options and allows installation of a new option/license file.
- Install License: Installs a license file that has been copied into memory
- Remove License: Password protected (Aeroflex use)
- Server IP: IP address of a file server
- Copy from Server: Copies license file from a file server
- Copy from USB: Copies license file from USB memory
- Unique ID
- Status
- Serial Number: Displays the serial number of the unit

To install a new license file:

Verify the unit displays a serial number. If the serial number field is blank, contact Aeroflex Customer Service. This procedure can only be completed with a serial number installed in the unit.

Unzip the license file to the PC then copy the license file (options.new) to the following directory on a USB Flash Drive: Aeroflex\License. Install the USB flash drive in the USB Connector and wait for the unit to recognize the USB flash drive (approximately 15 seconds).

Select Copy from USB button and verify the status field displays "Copying from USB Drive." When the copy process is completed, the status field displays "Copying from USB Done."

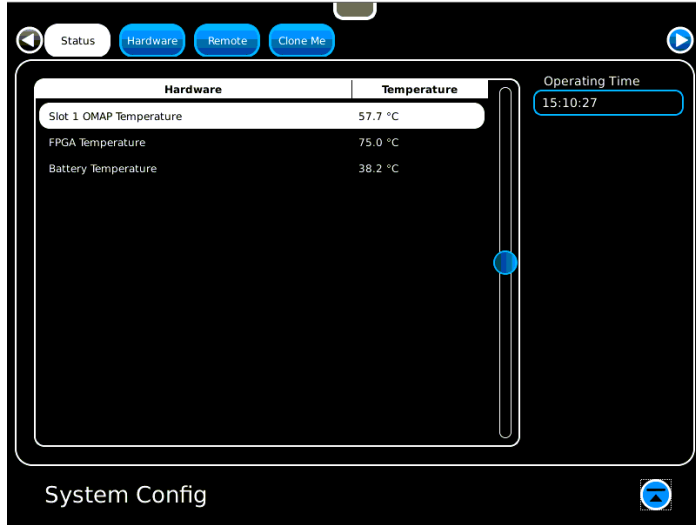
6. Select install license button. When license file installation is complete the status field displays "Installing License Done."

7. The unit prompts to cycle power.

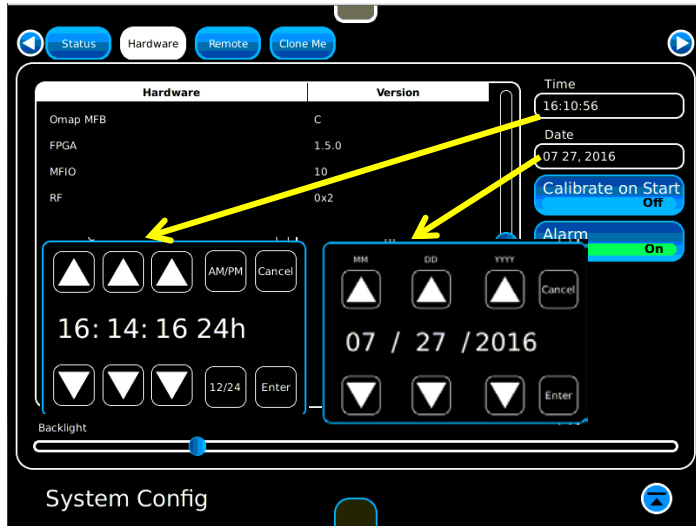
# Utilities



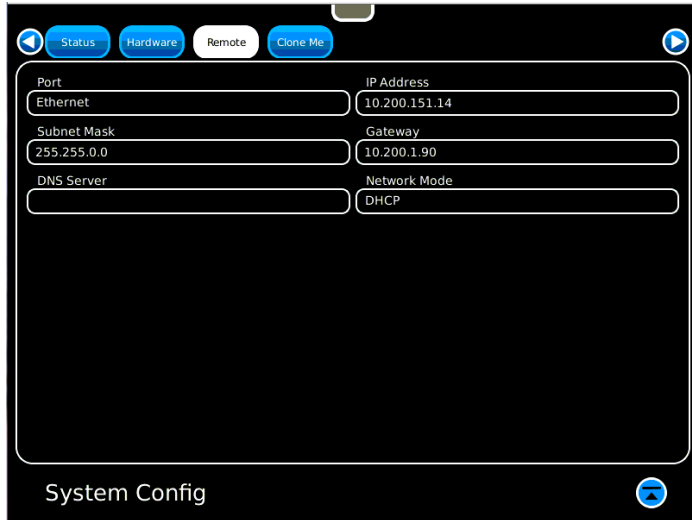
## Software – System – Status and Hardware Tabs



- The Software System Status display shows internal temperatures of various internal components.



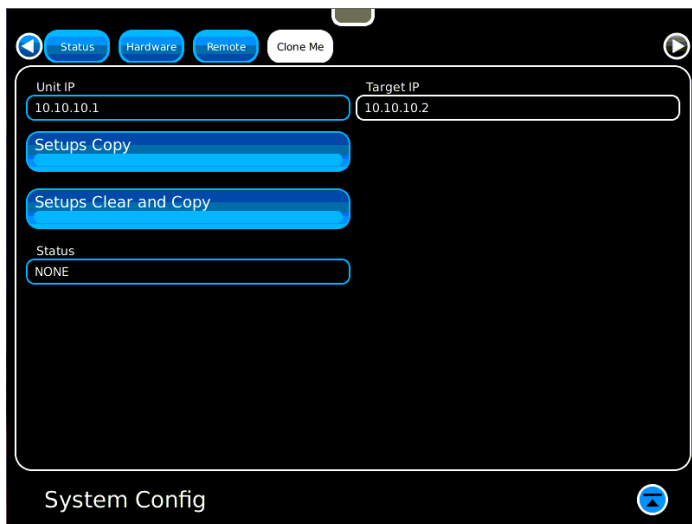
- The Software System Hardware display shows hardware revisions of system components.
- Allows entry of system Time and Date.
- Provides access to the backlight control which is also on the System Menu.
- Calibration on Start requires (Aeroflex Use).
- Alarm On/Off: Turn off the thermal alarm. Leave this in the ON state.



The screenshot shows the 'Remote' tab in the System Config utility. It features a navigation bar with 'Status', 'Hardware', 'Remote', and 'Clone Me' buttons. The main area contains a table of network configuration fields:

Field	Value
Port	Ethernet
IP Address	10.200.151.14
Subnet Mask	255.255.0.0
Gateway	10.200.1.90
DNS Server	
Network Mode	DHCP

System Config



The screenshot shows the 'Clone Me' tab in the System Config utility. It features a navigation bar with 'Status', 'Hardware', 'Remote', and 'Clone Me' buttons. The main area contains the following fields and buttons:

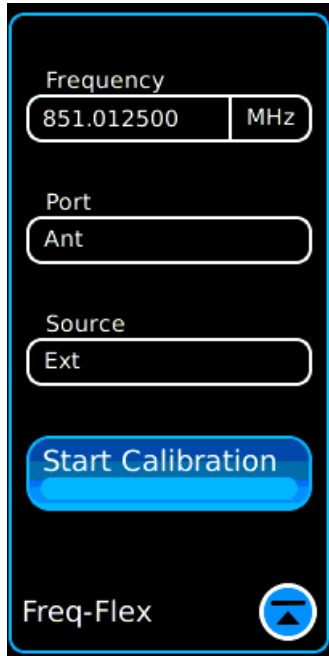
Field	Value
Unit IP	10.10.10.1
Target IP	10.10.10.2
Buttons	Setups Copy, Setups Clear and Copy
Status	NONE



System Config

- The Software System Remote Tab allows entry of Static or DHCP mode.
  - DHCP: Network assigns an IP address and other parameters.
  - Static: Manually enter IP Address, Subnet Mask, and Gateway values.
- With networking enabled, it is possible to use a VNC viewer application on a computer to remotely control the 8800SX. Files may also be transferred with a WINSXP application.
- **NOTE:** If networking is not required, set the mode to OFF. This will **reduce the bootup time** of the 8800SX.
- The Software System Clone Me Tab allows the ability to copy setups files from one 8800SX to another over an Ethernet interface. Enter the source and target IP addresses select Setups Copy.

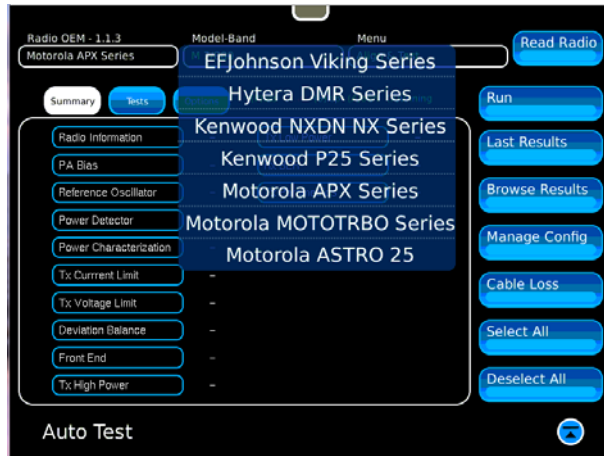
# Utilities

## Software – Freq-Flex



- The Freq Flex Function allows calibration of the internal 10 MHz reference to an external RF Signal of known accuracy.
- This calibration is most accurate at high frequencies.
- Inject an Unmodulated RF Carrier to the ANT or TR Port.
  - ANT: Level must be between -50 and +10 dBm
  - TR: Level must be between -10 and +20 dBm
- With external signal applied, touch the Start Calibration to calibrate the internal time base to the frequency of the external reference signal.
- After calibration the source may be changed between external and internal.
  - Internal: Calibration offset is not applied 
  - External: Calibration offset is applied 
- The Icon Bar shows the status and can be used to change from internal to external by touching the icon.





- The 8800SX supports a growing list of automated test and alignment applications and are based on OEM alignment and test specifications for each specific model.
- Connect the radio's USB Programming Cable from the radio to one of the 8800SX USB Ports.
- Connect an RF Cable from the radio's TX Output to the 8800SX TR Port.
- Turn on the radio and select Read Radio and the 8800SX will identify the model of radio that is connected.
- Either Test Only or Align and Test can be selected.
- Touch the Run button to execute the process.
- Test results are automatically stored internally and a filename is created based on the Model, Serial Number and Time/Date stamp.
- All radio information is captured including radio software versions and options.

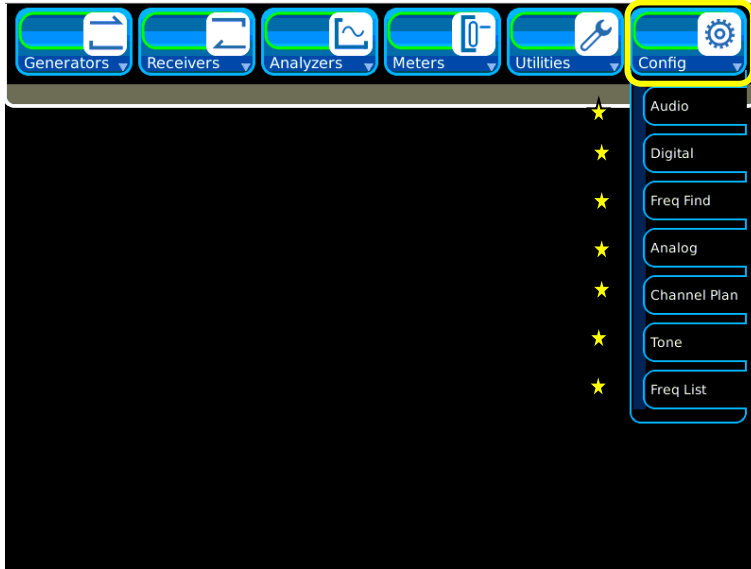




- The File Manager allows the ability to transfer files from the 8800SX storage directories to a USB memory stick.
- The 8800SX storage directories include:
  - Auto-Test Results
  - Cable Types: Used for DTF measurements
  - Frequency Lists: Stored Frequency lists
  - Presets
  - Save Recall: Stored setup files
  - Snapshot: Stored screen shots
  - Traces\_analyzer: Stored spectrum analyzer traces
  - Traces\_oscope: Stored scope traces
  - Traces\_track\_gen: Stored traces from the Tracking Generator system. Includes DTF and Return Loss Traces.
- Touch a directory name to highlight it then use the arrow keys next to the path name to navigate to the directory and file group of interest.
- Touch the usbstick\_sda1 folder and use the path arrows above to navigate to the USB folder of interest.
- Files can now be transferred from either direction.

# Configuration Menu

## Configuration Selections

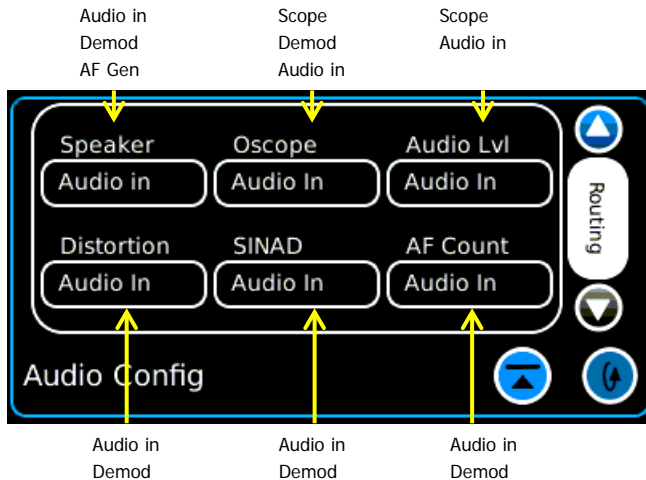
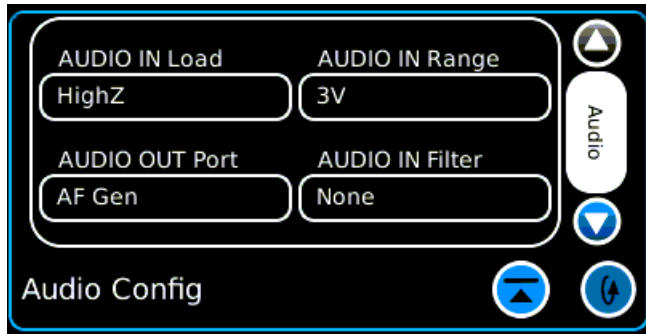


- The Configuration Menu selection allows access to the following features:
  - Audio
    - Input and Output signal routing
    - Input and Output control
  - Digital – **Included with any digital option**
    - Configure limits and averaging for all digital meters
  - Freq Find
    - Configure parameters used by Receiver Frequency Find Feature
  - Analog
    - Configure limits and averaging for all analog meters
  - Channel Plan – **Option 15**
    - AAR Channel Plan
  - Tone
    - Configure User Definable Tone Sequence
  - Freq List
    - Configure frequency lists



# Config

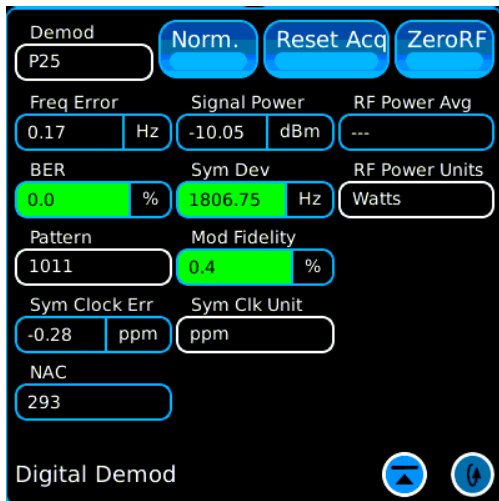
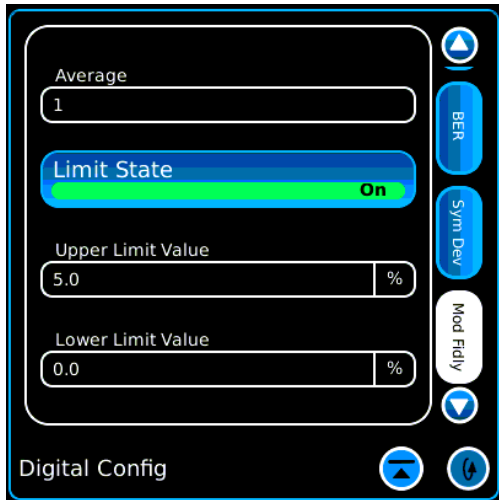
## Audio



- The Audio Configuration Tile is used to configure Audio Routing, Input Range and Filtering.
- Audio Tab
  - Audio IN Load: High Z, 150 Ohm, 600 Ohm or 1 k Ohm internal load selections.
  - Audio IN Range: 3 V or 30 V
    - Set this range to be appropriate for audio signals coming into the Audio IN Port.
  - Audio OUT Port
    - AF GEN: Audio Generator is routed to the AUD OUT Port.
    - DEMOD: Receiver Demod Audio is routed to the AUD OUT Port.
  - Audio IN Filter: Choose from a list of low pass, high pass and band pass filters to filter audio coming into the AUD IN Port.
- Routing Tab
  - Define audio signal that various devices may be evaluating. Choose between Audio IN, Receiver Demod and others. Selections are different for different devices.

# Config

Digital – Provided with any **Optional** Digital System



- The Digital Config Tile provides access to upper and lower limit entries for all digital meters.
- Meter averaging can also be set for each meter independently.
- Meters are separated by tab selections on the right side of the display.
- This is a fast method to configure meter limits if multiple meters are to be configured.

# Config

## Frequency Find



Start Frequency  
100 MHz

Stop Frequency  
900 MHz

Channel Spacing  
6.25 kHz

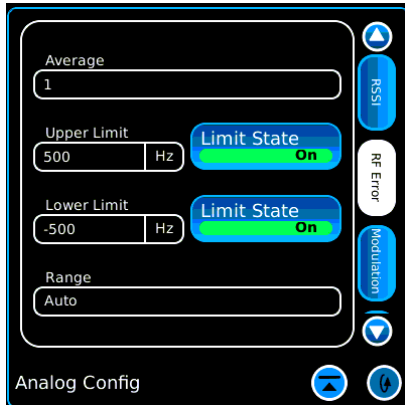
Threshold  
-30 dBm

Freq Find Config

- The Frequency Find Configuration Tile allows configuration of the frequency search parameters.
  - Start Frequency: Begin the search at start frequency
  - Stop Frequency: Search up to the stop frequency
  - Channel Spacing: Step size of the search
  - Threshold: Signal must be greater than this value
- To initiate a search for a transmitter, use the Freq Find Button on the Receiver Tile.

# Config

## Analog Config



- The Analog Config Tile provides access to upper and lower limit entries for all analog meters.
- Meters are separated by tab selections on the right side of the display.
- This is a much faster method to configure meter limits if multiple meters are to be configured.

# Config

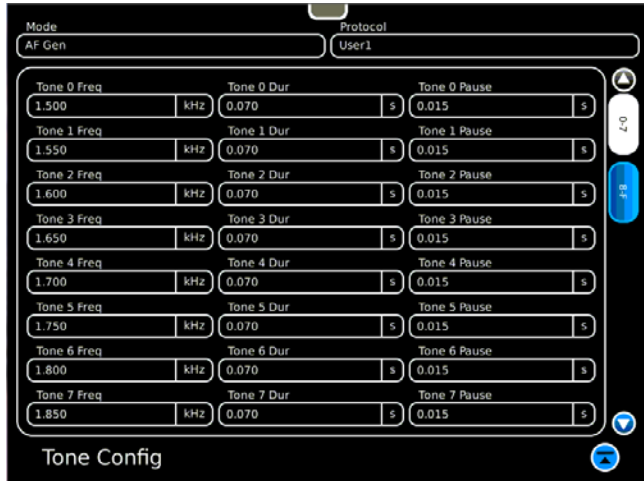
## Channel Plan – Option 015



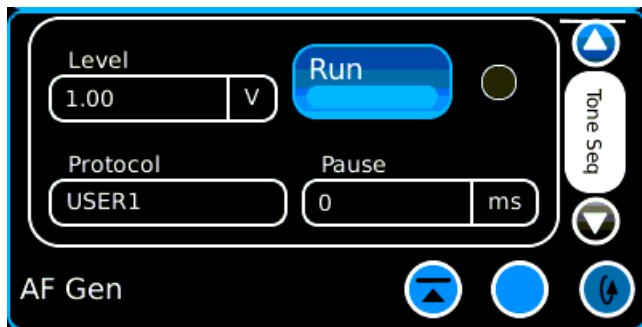
- Option 015 is for the AAR Channel plan used by the various railroads in North America including:
  - Norfolk Southern
  - CSX
  - BNSF
  - UPRR
  - P&W, MBTA and Amtrack
- A channel entry controls the generator and receiver frequencies along with the modulator and demodulator settings.
- Channels 5 – 97, 104 – 197 are used for FM
- Channels 302 – 488 are used for NXDN Technology

# Config

## Tone

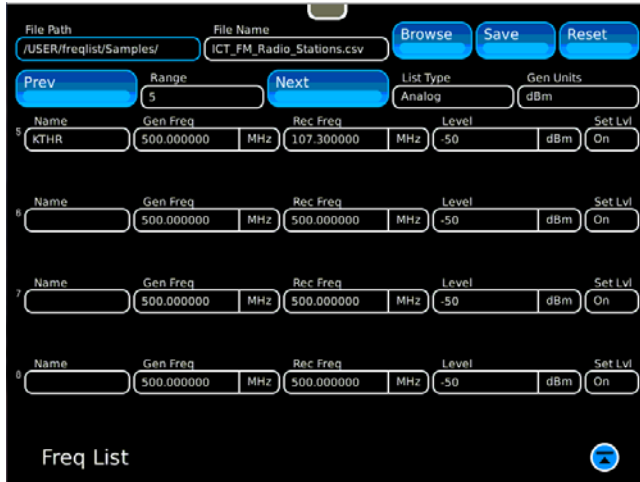


- The 8800SX provides entries for two user definable tone sequences for use with Tone Sequential. Separate lists are available for the RF Generator Modulator and the Audio Generator.
- Tones 0-7 and 8-F can be defined for frequency, duration, and pause.
- Use the AF Generator or RF Generator Modulator Tone Seq Tab to send the sequence.



# Config

## Frequency List

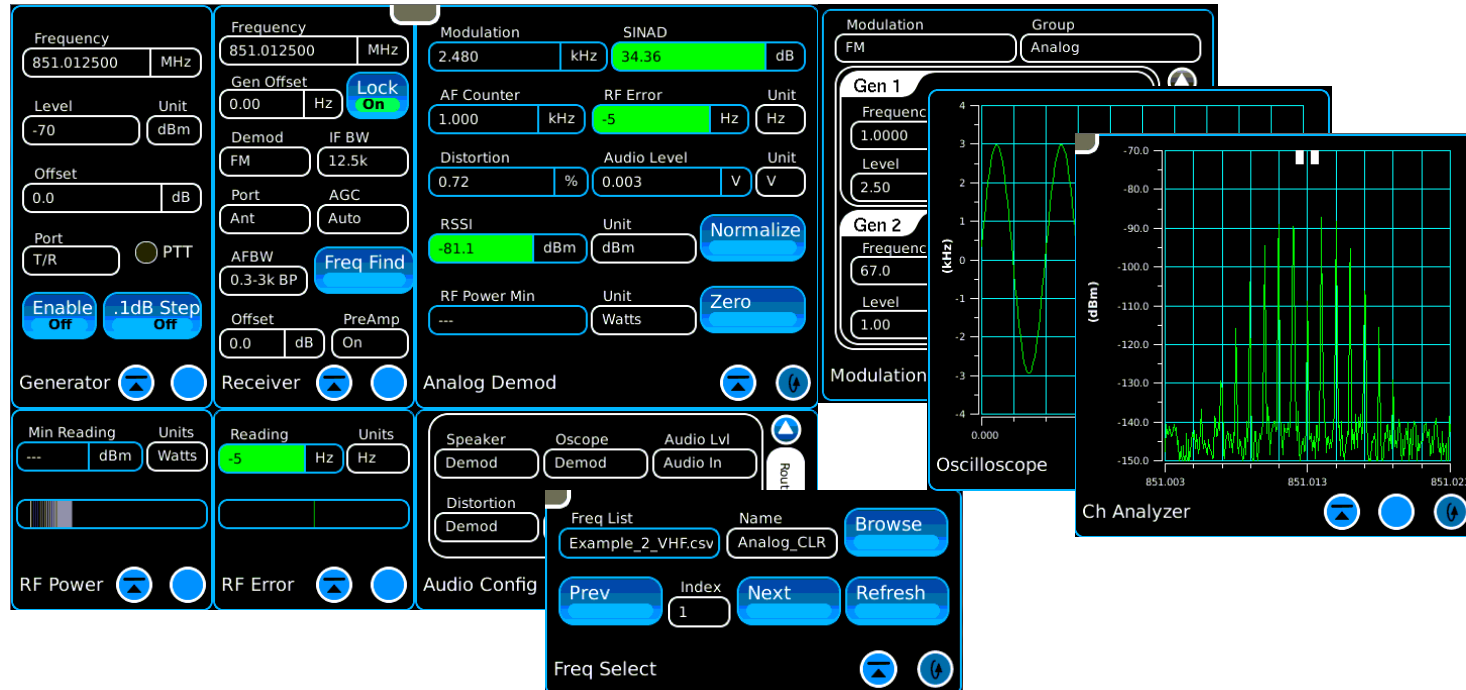



Frequency lists can be exported and modified with standard spreadsheet software. After being modified, they can be imported back. Use the File Manager to transfer files.

- The Frequency List configuration allows entries in a variety of ways. Each entry allows entry of a user definable label.
  - List Type
    - Analog
      - Enter Gen/Rec frequencies, Gen Level
      - Set Lvl control
        - On: Sets the Gen Level
        - Off: Does not set the Gen Level
    - PL DCS: Adds the ability to set Mod1 and Mod2 frequency and Deviation levels along with on/off controls. PL or DCS can be chosen for Mod 2.
    - P25: Adds the ability to add a NAC for P25 Encode.
    - DMR: Adds the ability to enter a Color Code and Call ID for DMR Encode.
    - NXDN: Adds the ability to enter a RAN Code and Baud Rate for NXDN Encode
    - dPMR: Adds the ability to enter CC, Call ID, Unit ID, and Comms Format.

# Putting It All Together

## Screen Arrangements



Use Tile Stacking and the Fast Stack Icon  to quickly access any controls or tiles that might be useful for specific tasks.

Use meter configuration screens to set limits on specific meters of interest for fast pass/fail tests.

Save the configuration as a preset to store only tile locations or as a setup to store all settings and tile locations.



# 8800SX Options and Accessories



## 8800SX Options and Accessories

139942 8800SX Digital Radio Test Set

### Standard Accessories

Fuse, 5 A, 32 V, Mini Blade	Power Supply
AC Power Cord - USA	AC Power Cord - China
AC Power Cord - Europe	AC Power Cord - UK
Adapter, N(m) to BNC(f), Qty 3	Front Cover
Internal Battery	

### Options

113334	8800OPT01	DMR
113335	8800OPT02	dPMR
113336	8800OPT03	NXDN
113337	8800OPT04	P25
138895	8800OPT05	P25 Phase 2
140215	8800OPT06	DMR Repeater Test
113338	8800OPT09	ARIB T98
113339	8800OPT10	Tracking Generator
113340	8800OPT11	Occupied Bandwidth
113309	8800OPT12	Internal Precision Power Meter (Meter + Sensor)
113342	8800OPT13	External Precision Thru-Line Meter (for use with Bird WPS Sensor)
113343	8800OPT14	PTC
113344	8800OPT15	AAR Channel Plan
139836	8800OPT20	R&S NRT-Z Power Sensor Support
139837	8800OPT21	Selectable Notch Filters
139838	8800OPT22	SNR Meter
138525	8800OPT101	Kenwood NXDN Auto-Test
138526	8800OPT102	Kenwood 5X20 P25 Series Auto-Test
138527	8800OPT103	Motorola APX Auto-Test
138528	8800OPT104	Motorola MOTOTRBO™ Auto-Test
139315	8800OPT105	Motorola ASTRO® 25 XTS®/XTL™ Auto-Test

### Languages

113350	8800OPT300	Simplified Chinese
113351	8800OPT301	Traditional Chinese

113352	8800OPT302	Spanish
113353	8800OPT303	Portuguese
113354	8800OPT304	Malay/Indonesian
113355	8800OPT305	Korean
113356	8800OPT306	Arabic
113357	8800OPT307	Polish
113358	8800OPT308	Russian
113359	8800OPT309	Japanese
113360	8800OPT310	German
113361	8800OPT311	French
139625	8800OPT312	Italian

### Accessories

138313	Calibration Certificate - 8800 Series
82560	AC27003 Attenuator - 20 dB/150 W
67076	Spare Internal Battery
114479	External Battery Charger
114477	Hard Transit Case
114478	Soft Carrying Case
114475	Antenna Kit
114348	Precision DTF/VSWR Accessory Kit for 8800
63927	AC25081 Site Survey Software
92793	5017D Bird Power Sensor
114312	Mounting Bracket
112861	Microphone
62404	DC Cord/Cigarette Adapter
63936	AC24009 DMM Test Leads
112277	10 AMP Current Shunt, 0.01 Ohm
67411	Scope Probe Kit

### Extended Warranties

114481	Extended Standard Warranty 36 Months
114482	Extended Standard Warranty 60 Months
114483	Extended Standard Warranty 36 Months with Scheduled Calibration
114484	Extended Standard Warranty 60 Months with Scheduled Calibration

### Select 8800SX Accessories Overview

*Soft Case* 114478  
The soft case allows full operation of the 8800SX while inside the case. The laptop style design is lightweight and provides extra protection during field operation. Storage pockets provide extra space for spare batteries, test cables, etc.



*Hard Transit Case* 114477  
The hard transit case features form-fitted slots for the 8800SX, protective cover, precision VSWR/DTF Kit, power supply, 150 W attenuators, spare battery, and more.



*Precision DTF/VSWR Accessory Kit* 114348  
This accessory kit provides all items necessary for accurate and VSWR, Return Loss, and Distance-to-Fault measurement. The kit includes a case, return loss bridge, power divider, 50 Ω calibrator, and two N-type test cables specifically designed for the 8800SX.



*Bird 5017D Thru-Line Power Sensor* 92793  
The 8800SX also supports the Bird 5017D Thru-Line Power Sensor as an external power meter for users that already have the 5017D. This capability requires 88XXOPT13 and provides simultaneous forward and reverse power measurements up to 500 W and VSWR measurements that are displayed on the 8800SX screen.



## Questions or Comments?

### Contact Information

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For information about pricing for our products, contact the sales office by calling VIAVI Solutions at (800) 835-2352 or emailing [AvComm.Sales@viavisolutions.com](mailto:AvComm.Sales@viavisolutions.com).

For technical/product support, calibration, maintenance and general customer service inquiries, you can contact our help desk by [clicking here](#), calling (800) 835-2350, or emailing [Service.Americas@aeroflex.com](mailto:Service.Americas@aeroflex.com).

[Click here](#) for more information on the 3920B and latest software versions and training materials.