USER GUIDE

SignalScout

Model 40

Copyright

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To: Psiber Data Systems Inc.
7075-K Mission Gorge Rd.
San Diego, CA 92120
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Introduction

New low cost over-the-air, digital TV antennas provide viewers free access to digital Broadcast TV (ATSC 1.0). Free use of major network broadcasts has made “Cord Cutting” a growing trend that allows users to reduce or eliminate high cost paid services.

Antenna costs are moderate but installation costs can be high without the proper test tools. Traditional rooftop installations require numerous trips up and down a ladder to point the antenna and then go to the TV to determine if there is adequate signal for each channel.

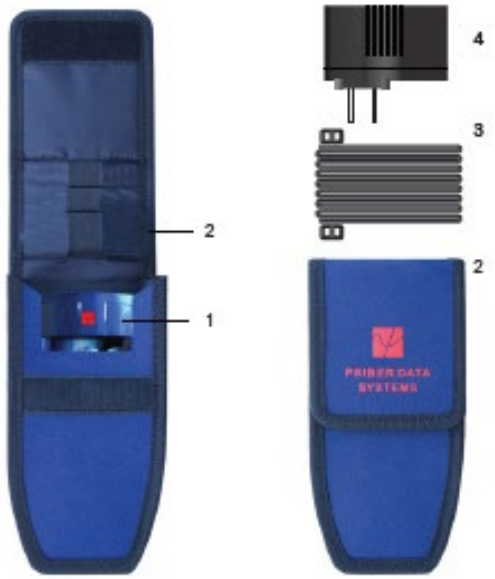
The SignalScout allows for optimum antenna alignment as it is installed. The meter provides fast and accurate measurement of signal strength when tuning an antenna for a local TV channel. The SignalScout has a built-in compass to give a starting point for aiming the antenna.

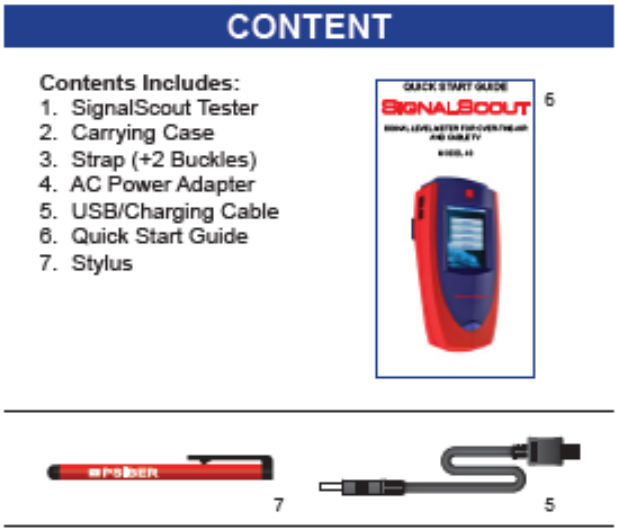
The unit also produces an audible tone that is proportional to the received signal strength so the user does not even have to look at the display to get the best antenna alignment. The SignalScout includes a 10dB amplifier for receiving weak signals from distant stations. This lets the user know if an amplifier must be installed in the home system for certain TV stations.

The SignalScout can be used to measure a single channel or an entire channel plan. There is also a learn mode to develop a channel plan for a specific location. The meter measures Signal level, Signal to Noise Ratio (SNR)/Modulation Error Ratio (MER), Tilt and provides Digital Error counts to verify the quality of the received signals and maintain or troubleshoot after installation.

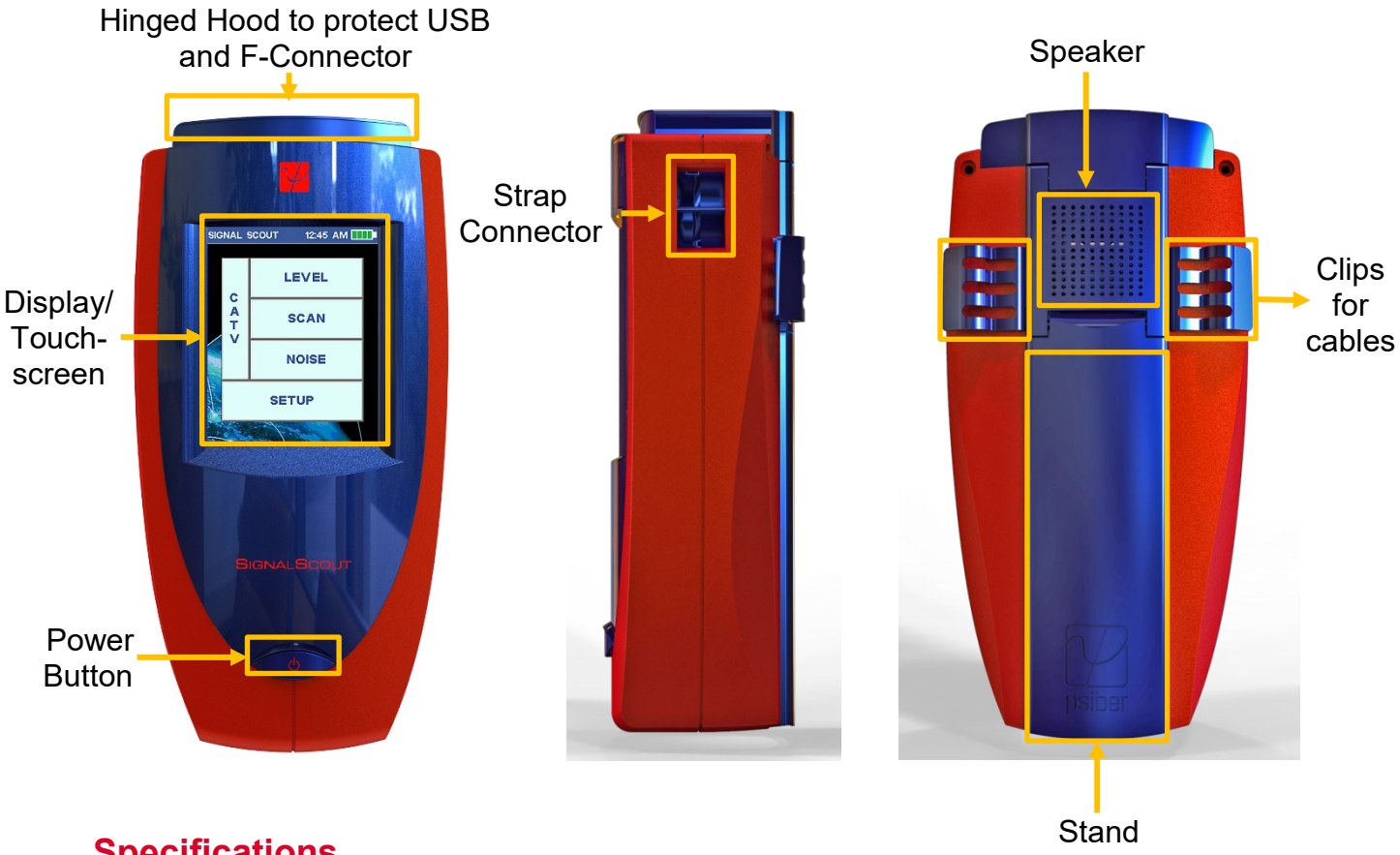
The SignalScout also verifies CATV service. The unit is 64/256 QAM fully compliant and DOCSIS 3.1 (OFDM) signal level compatible. Noise return power is measured through a 42MHz low pass filter.

Kit Content





Physical



Specifications

Dimensions	Approximately 3.3 in. x 2.0 in. x 6.75 in. / 84 mm x 51 mm x 172 mm
Weight	13.2 ounces (387 grams)
Interface	2.9-inch Color LCD Touchscreen Display
Power	Li-Ion Rechargeable Battery Pack; AC Power 110/240 VAC (via USB port)
Standards	ATSC 1.0 (A/53), ITU-T J.83, Annex A (DVB-C) (Planned), Annex B (US)
Connector Type	F Connector
Temperature range	Operating: 32°F to 122°F (0 °C to +50 °C)
	Storage: 14°F to +131°F (-10°C to +55°C)
Warranty	One Year

Preparing the Unit

The SignalScout is portable and can be handheld or placed on a surface large enough for stable use. The SignalScout is designed to withstand the rigors of everyday use and travel. However, to keep your tester in prime operating condition, please observe the following precautions to further reduce the risk of personal injury or damage to the tester.

- Never apply heavy pressure to the tester, especially on or around the display area. Avoid sharp impacts to the tester.
- Excessive pressure or impact can damage components or otherwise cause the tester to malfunction.
- Do not submerge, float or allow liquids to spill into or onto the tester.
- Do not use excessive force to connect or disconnect cables or peripherals.
- Use the supplied strap to prevent accidentally dropping the tester.
- Never use sharp objects on the display/touch screen area. Use only the supplied stylus.

Protect the SignalScout from; dust, moisture, direct sunlight, liquids and corrosive materials. Equipment that generates a strong electromagnetic field, rapid changes in temperature or humidity, extreme heat or cold may also damage your tester. Operate the analyzer within the specified temperature range.

Battery Use

The tester contains a rechargeable battery pack which is charged by the factory for quick use. The external USB adapter provides power to the tester and charges the battery pack from an AC outlet or computer.

The battery pack can be charged while the tester is on or off. Charging time is reduced if the tester is turned off. With the tester turned on, the battery symbol on the display provides the charge status of the battery pack.

				
Empty	Low	Normal	Full	Charging

Caution:

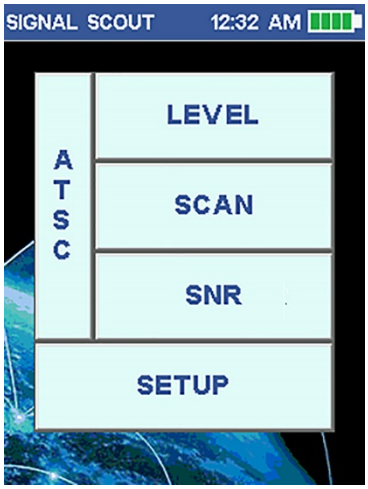
To avoid electric shock, never modify, forcibly bend, damage, apply heat to or place heavy objects on top of the power cord. If the power cable becomes damaged or the plug overheats, discontinue use.

Never remove the power plug from the outlet with wet hands.

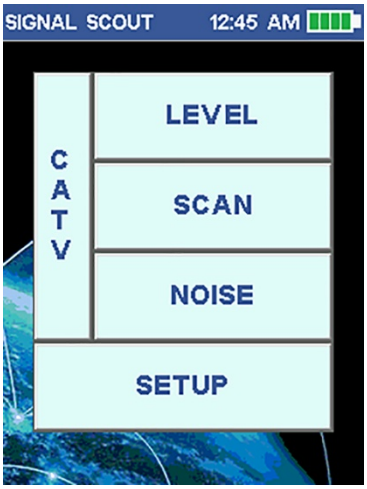
Using the wrong AC adapter could damage your tester. Psiber assumes no liability for damage in such cases. Never pull directly on the power cable to unplug it. Hold the power plug when removing the cable from the outlet.

Getting Started

Turn on the SignalScout by pressing the power button until the screen lights up, and then release the button. The unit automatically displays the **Home** Screen.



Home ATSC Screen



Home CATV Screen

The **Home** Screen has ATSC/CATV, Level, Scan, SNR/Noise and Setup Buttons.

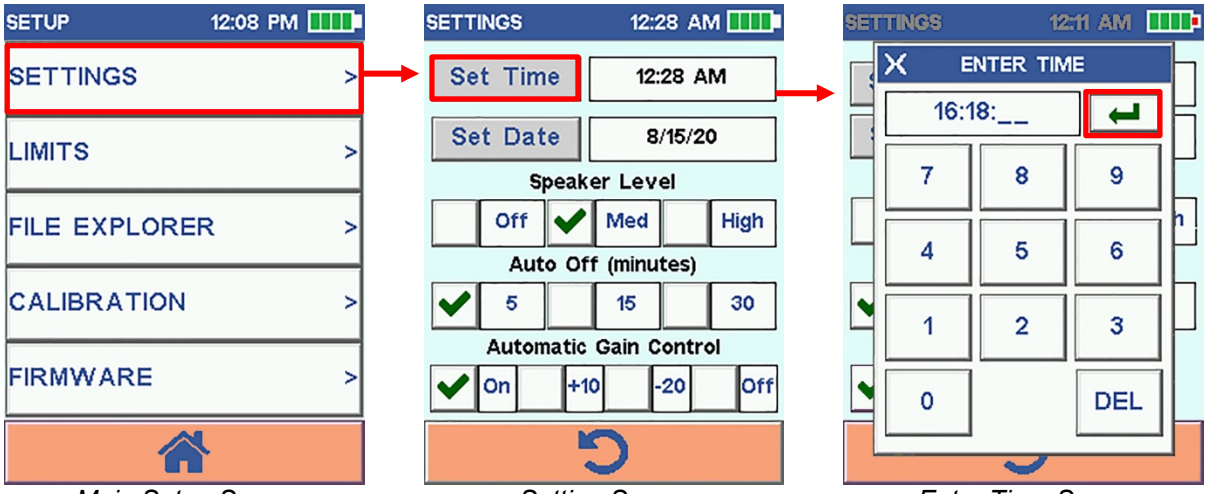
- **ATSC/CATV** allows for the ability to toggle between either for LEVEL, SCAN and SNR/NOISE tests.
- **Level** continuously scans for ATSC or CATV LEVELS on the selected Channel and Frequency displayed on the screen.
- **Scan** will scan all channels for ATSC or CATV signals from the selected frequencies in the channel plan under SETUP and displays the power levels in a single graph.
- **Noise** displays a power level graph of detected Noise.
- **Setup** allows the user to customize settings for the LEVEL, SCAN and NOISE.

Note: Double Tapping the Power button will automatically bring you back to the Home screen.

Setup

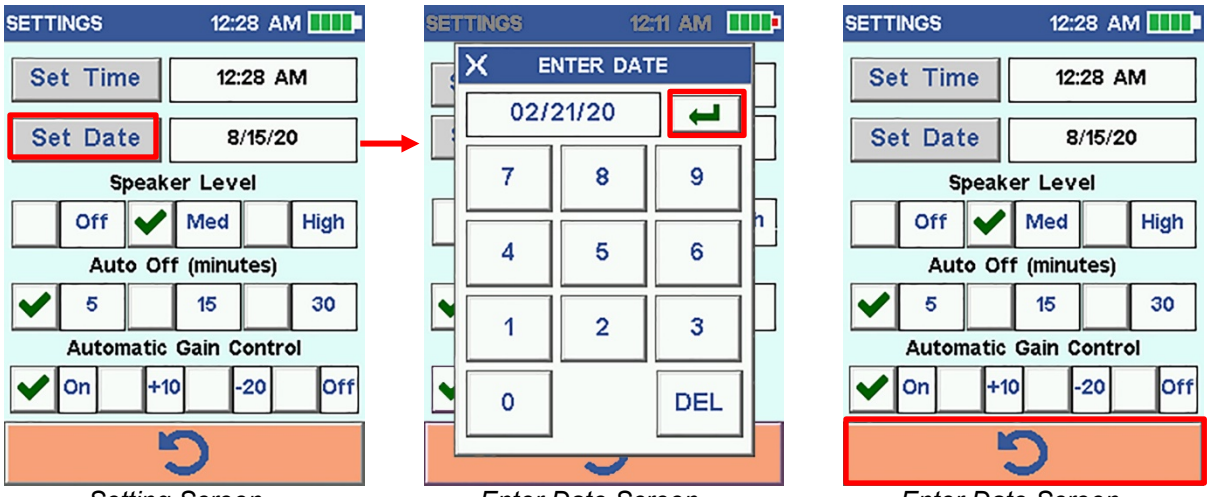
Select the **Setup** button from the **Home** Screen. The available configurable categories are displayed on the screen. Select the **Settings** button. The **Settings** screen allows the user to customize the SignalScout's operating parameters.

Select the gray **Set Time** button to change time. Enter in the correct time with the format 16:18:00 for 4:18 pm or enter in 4:18 for 4:18 am. Select the **Green Enter Arrow** to save the entered time or press the **X** to cancel and return to the **Settings** screen.



Main Setup Screen *Setting Screen* *Enter Time Screen*

Select the gray **Set Date** button to change Date. Enter in the correct date with the format 02/21/20. Select the **Green Enter Arrow** to save the entered Date or press the **X** to cancel and return to the **Settings** screen.



Setting Screen *Enter Date Screen* *Enter Date Screen*

The **Speaker Level** setting can be changed to either **High**, **Med** or **Off**. **Auto Turn Off** allows the SignalScout to turn off with either **5, 15** or **30** minutes of inactivity. To save battery life, change the Auto turn off time to **5** minutes.

The **Automatic Gain Control** setting can be changed to **On, +10, -20** or **Off**. This is the control of the signal path which can be directed through the internal +10 dB Amplifier, through the -20 dB Attenuator, or Straight Through to the Measurement chip.

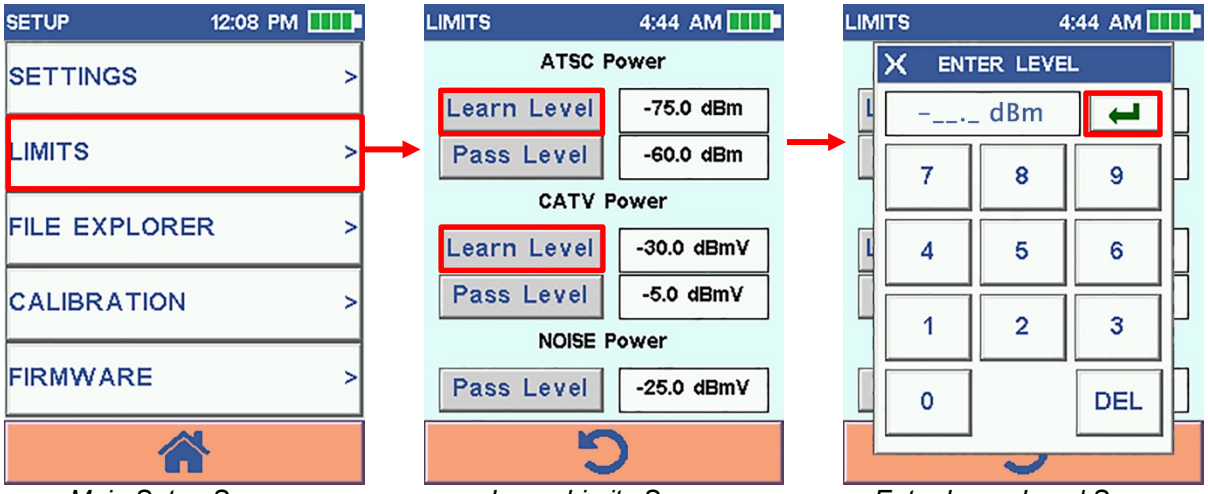
Using the **+10** dB Amplifier or **-20** dB Attenuator or AGC **Off** allows the user to take control of the signal path. This is very useful if you want to check a signal with and without the amplifier in order to determine if an amplifier is necessary. If the SignalScout cannot lock on to a channel without the amplifier enabled, it is doubtful that a TV will be able to either.

If the user leaves the AGC **On** to Auto mode, the SignalScout will determine if it requires an amplifier for best measurement. It would then display the word “Amp” in the Level menu. The same goes for the attenuator (PAD) but this would only be necessary at a very high Cable TV test point for example on the output of a line amplifier.

Once completed, select the **Return** Arrow to return to the **Main Setup** Screen.

Limits

Select the **Limits** button. The **Limits** Screen allows the user to customize the SignalScout’s operating power limits for ATSC, CATV and Noise.



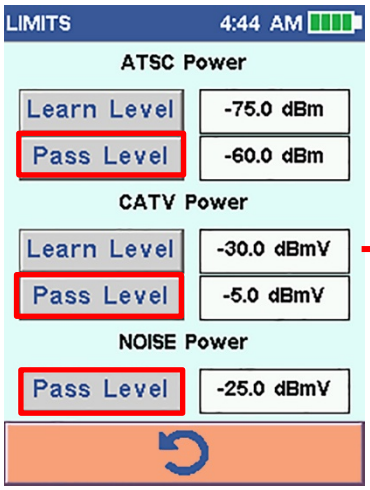
Main Setup Screen *Learn Limits Screen* *Enter Learn Level Screen*

Select the gray **Learn Level** button for ATSC or CATV Power. The power level is used to determine if a channel is present or absent when pressing the **LEARN** button in the **Scan** Screen. Any channel measured above this **Learn Level** will be marked as “active” in the channel plan. Any channel measured below this **Learn Level** will be marked as “skipped”. Enter in a **Limit Level** with the format -75.0 dBm. Select the **Green Enter Arrow** to save the entered level or press the **X** to cancel and return to the **Limits** screen.

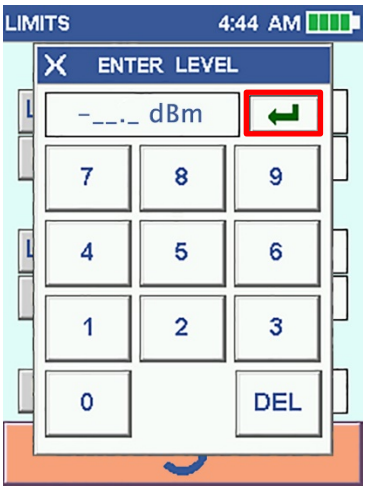
Select the gray **Pass Level** button for ATSC or CATV Power. For **Level** and **Scan**, anything above these numbers will show up on the graph as **Green**. For **Noise**, anything below this number turns **Green**. The SNR fields color is hard coded and does not change. The noise floor of the SignalScout is approximately -45 dBmV so a setting too low will cause the SignalScout to think noise is a channel. Setting it too high will causes SignalScout to think the channels do not exist. In normal scenarios, -5.0 dBmV is a good number.

Enter in a **Pass Level** with the format -5.0 dBmV. Select the **Green Enter Arrow** to save the entered level or press the **X** to cancel and return to the **Limits** screen.

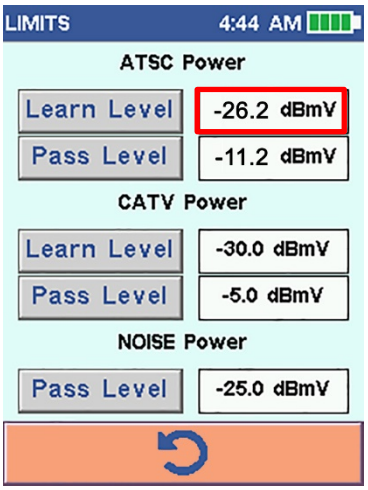
Select one of the white number boxes to toggle the measurment setting from dBm to dBmV. Toggle one in the ATSC Power section and the other will toggle as well. This keeps the measurement settings the same for both Learn and Pass levels. Once completed, select the **Return** Arrow to return to the **Main Setup** Screen.



Pass Limit Screen



Enter Pass Level Screen



Limit dBmV Screen

File Explorer

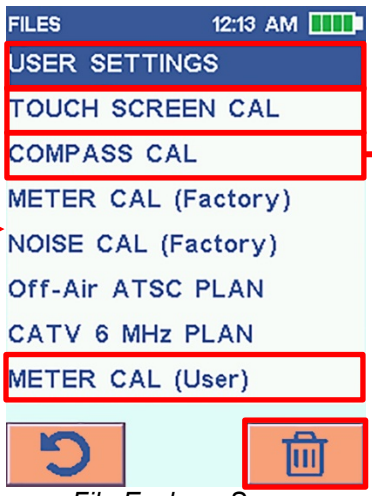
Select the **File Explorer** button. The **File Explorer** screen displays a list of files that can be edited or deleted. All cals are set to factory default upon arrival

Note: Calibration is done at the factory before the SignalScout is shipped.There is no need to recalibrated once you recived your SignalScout for the first time.

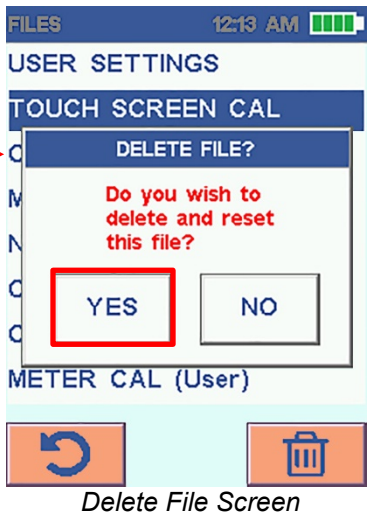
Select either **User Settings, Touch Screen Cal, Compass Cal or Meter Cal (User)** and then select the **Delete** button to delete these data files. A pop up will display asking *"Do you wish to delete and reset this file?"* Select **Yes** to delete or **No** to return back to the **File Explorer** Screen. **Meter Cal (Factory) and Noise Cal (Factory)** are for Factory Defaults and cannot be changed.

Note: Once any cal is deleted the user will need to recalibrate the SignalScout before testing again.

Setting Screen



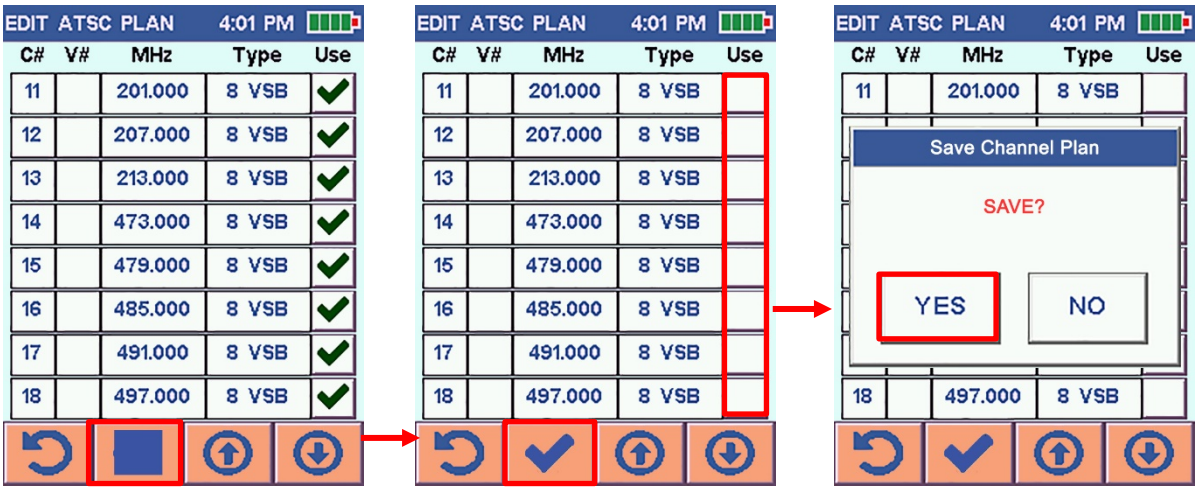
File Explorer Screen



Delete File Screen

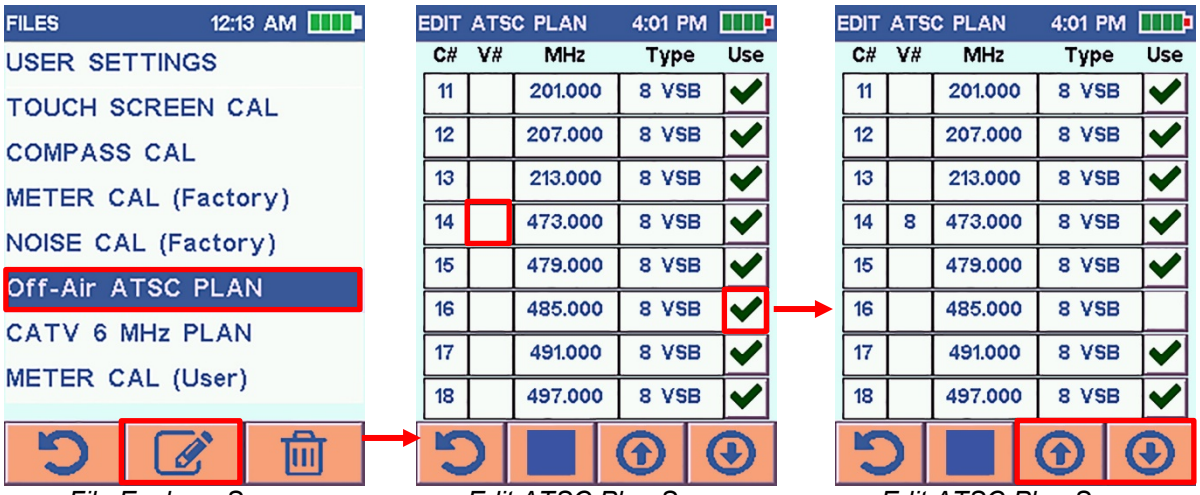
Both Channel Plans (ATSC and CATV) can be customized. Select the **Off-Air ATSC Plan** and then select the **Edit** button.

The Edit ATSC Plan Screen displays **Channel Number (C#), Virtual Number (V#), Frequency (MHz), Type and a Check Box** if selected for testing. Select all frequencies to use on the next ATSC Scan. To deselect all channels, select the **Square** button. To select all channels, select the **Check** button.



Edit ATSC Plan Screen *Edit ATSC Plan Screen* *Save ATSC Plan Screen*

Select the **Down Arrow** to show more Chanel Numbers/Frequencies to add to the ATSC Plan. Select the **V# button** next to the Channel number to enter in a Virtual number (if known). Virtual channels are implemented in digital television, helping users to find a desired channel easily.



File Explorer Screen *Edit ATSC Plan Screen* *Edit ATSC Plan Screen*

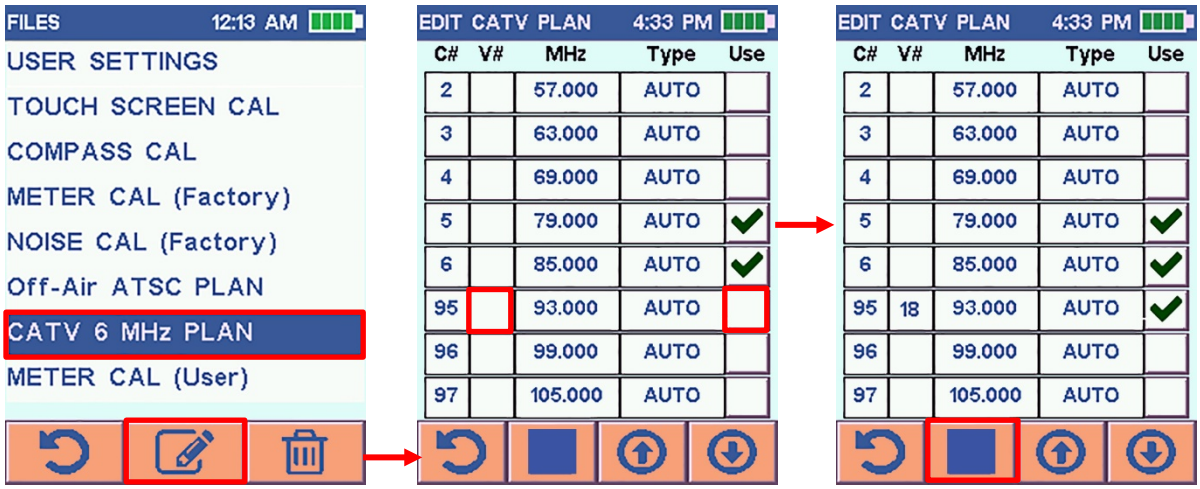
Select the **Return** Button. A pop up will display asking “Save?” to save the edited Channel Plan. Select **Yes** to save or **No** to not save before leaving the Channel Plan. The File Explorer Screen is displayed.

Select the **CATV 6 MHz Plan** and then select the **Edit** button.

Just like the ATSC Plan, the **Edit CATV Plan** Screen displays **Channel Number (C#), Virtual Number (V#), Frequency (MHz), Type and a Check Box** if selected for testing. Select all Frequencies to use on the next CATV Scan. To deselect all channels, select the **Square** button. To select all channels, select the **Check** button.

Select the **Down Arrow** to show more Chanel Numbers and Frequencies to add to the CATV Plan. Select the **V# button** next to the Channel number to enter in a Virtual number (if known).

Select the **Return** Button. A pop up will display asking “Save?” to save the edited Channel Plan. Select **Yes** to save or **No** to not save before leaving the Channel Plan. The File Explorer Screen is displayed.



File Explorer Screen *Edit CATV Plan Screen* *CATV Plan Screen*

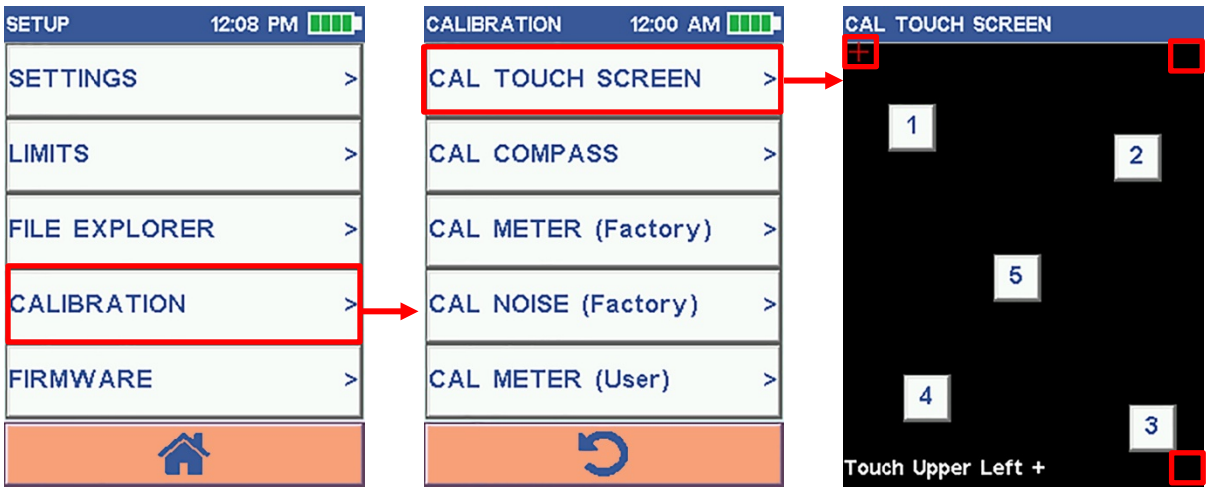
Once complete with the **File Explorer**, select the **Return** Arrow to return to the **Setup** Screen.

Calibration

Select the **Calibration** button from the **Setup** Screen. The **Calibration** Screen displays a list of different calibration for the SignalScout.

Note: Calibration is done at the factory before the SignalScout is shipped.There is no need to recalibrated once you recived your SignalScout for the first time.

Select the **Cal Touch Screen.** Follow the prompt on the bottom left. Touch the **Upper Left +, Upper Right +, Lower Right +** then Select the numbers in order from **1 to 5** with your finger or the supplied stylus until the boxes turn green. Once finished, the SignalScout will automatically return to the **Home** Screen.

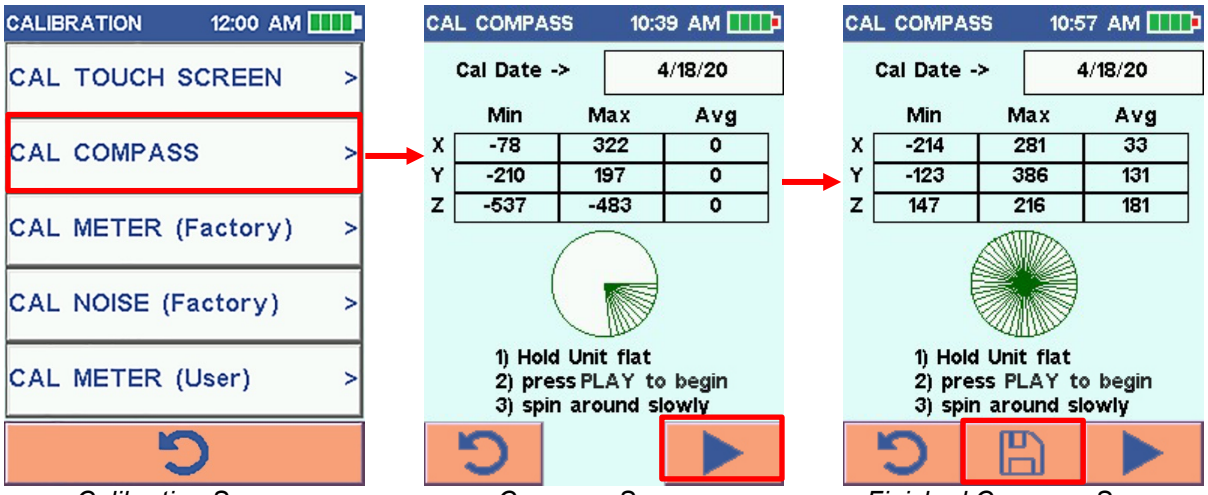


Setup Screen *Calibration Screen* *Cal Touch Screen*

Return back to the **Calibration** Screen then select the **Cal Compass.**

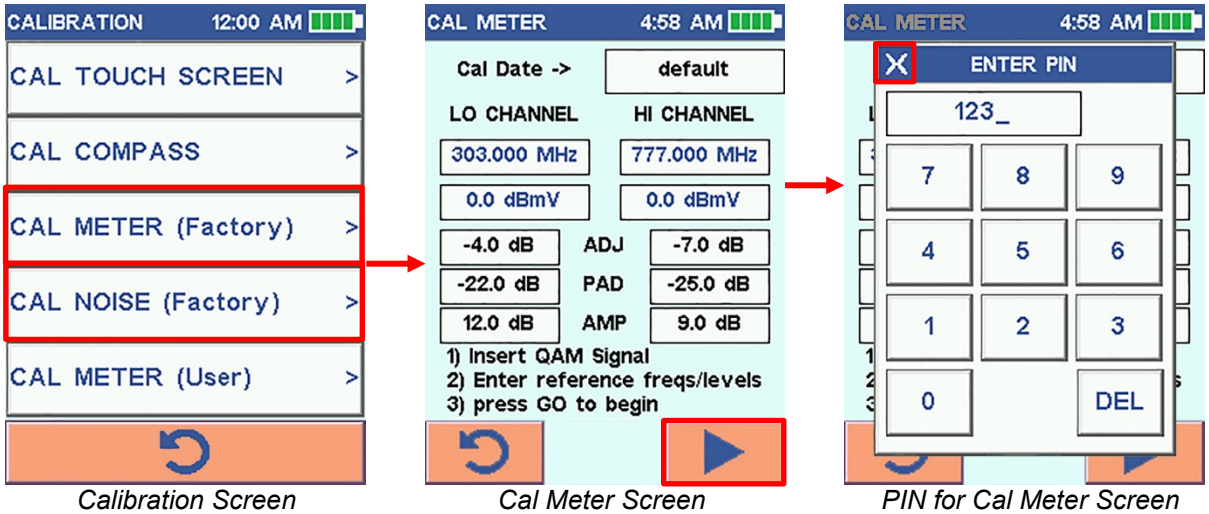
1. Place the SignalScout **FLAT** on a bench/table surface with the LCD face up or hold the SignalScout flat in your hands with LCD face up
2. Select the **Play** button.
3. Slowly spin the SignalScout around **twice** while the circle fills up with green markings. Make one full rotation of the SignalScout by the time the green marking fills half of the circle then the second rotation while the rest of the circle completes.
4. When the **Save** button appears, stop spinning the SignalScout and press the **Save** button. The Date will be entered into the Cal Date field.

Once complete, select the **Return** Arrow to return to the **Calibration** Screen.



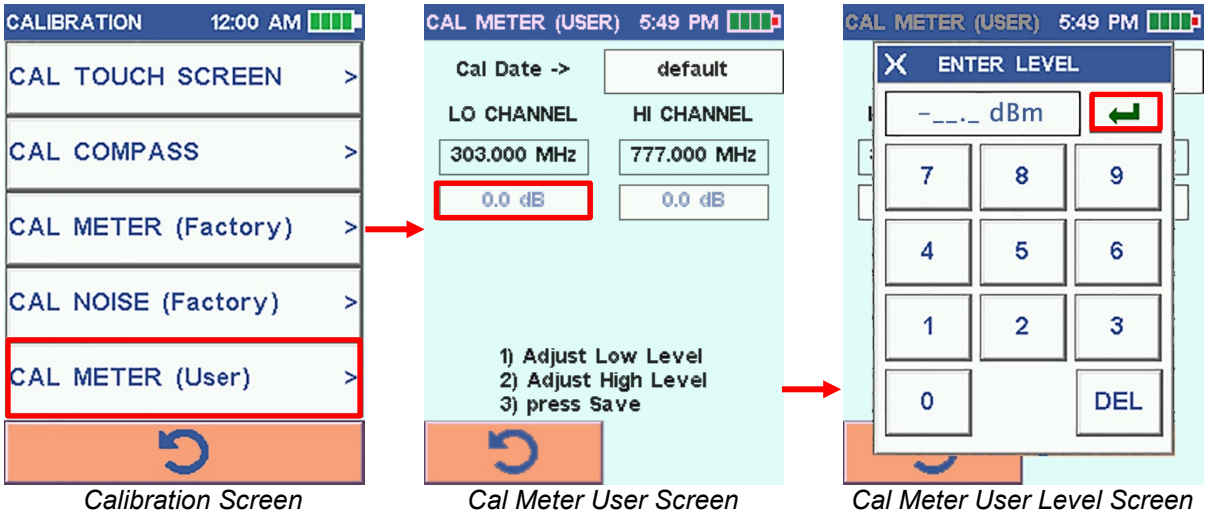
Calibration Screen *Compass Screen* *Finished Compass Screen*

The **Cal Meter (Factory) and Cal Noise (Factory)** are used for Factory Default purposes only. A pin must be entered to change Factory Default.



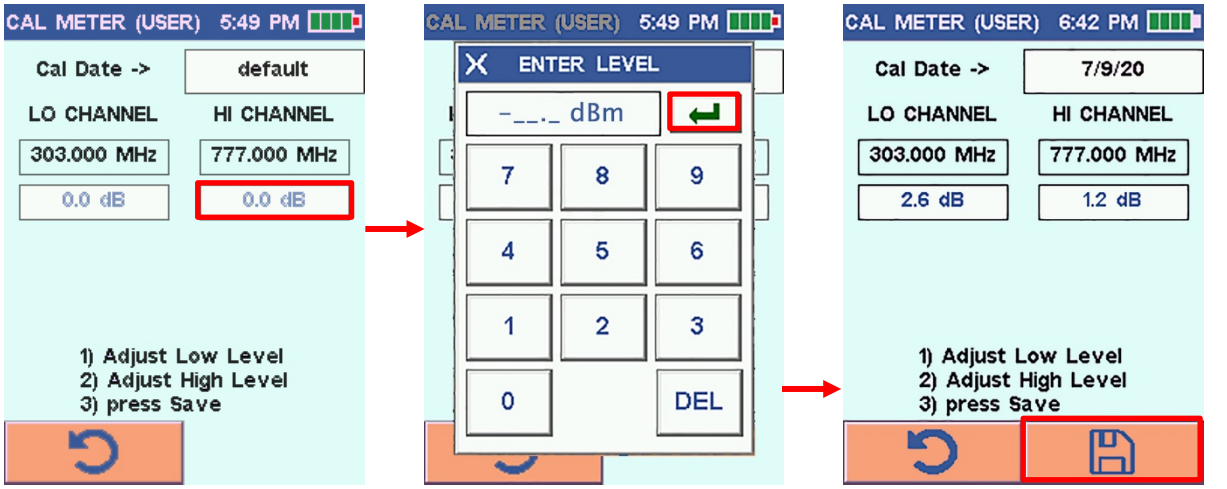
Calibration Screen *Cal Meter Screen* *PIN for Cal Meter Screen*

Select the **Cal Meter (User).** This screen allows the user to calibrate the meter by using a QAM Modulator. Setup the QAM for a 303.0000MHz output signal. Select the white **dB button** under **LO Channel** to enter in the **Level** at this frequency and select the **Green Enter** button.



Calibration Screen *Cal Meter User Screen* *Cal Meter User Level Screen*

Change the output signal on the QAM to **777.000 MHz.** Select the white **dB button** under **HI Channel** to enter in the **Level** at this frequency and select the **Green Enter** button. Select the **Save** button to save the new dB Levels. The **Cal Date** will change from Default to the current date that the SignalScout was last calibrated.



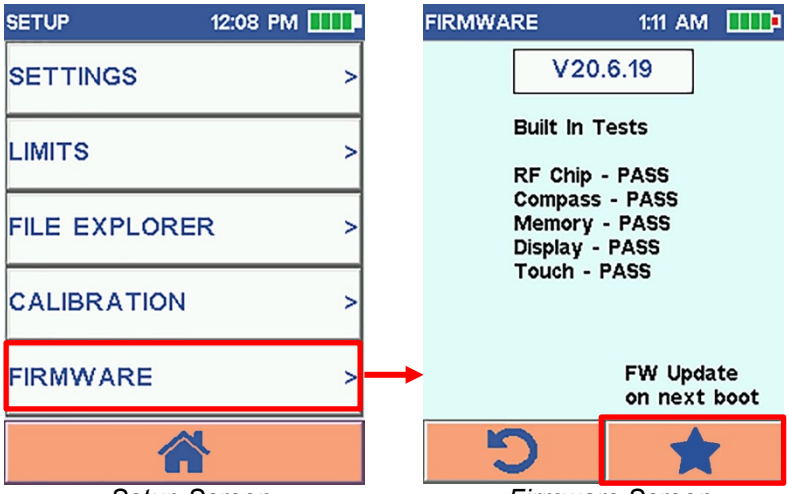
Cal Meter User Screen *Cal Meter User Level Screen* *Cal Meter Entered Levels Screen*

Once complete, select the **Return** Arrow to return to the **Calibration** Screen.

Once finished with **Calibrations**, select the **Return** Arrow to return to the **Setup** Screen.

Firmware

Select the **Firmware** button. The **Firmware** screen displays the current Firmware Version of the SignalScout with built-in test to verify all internal parts are working.



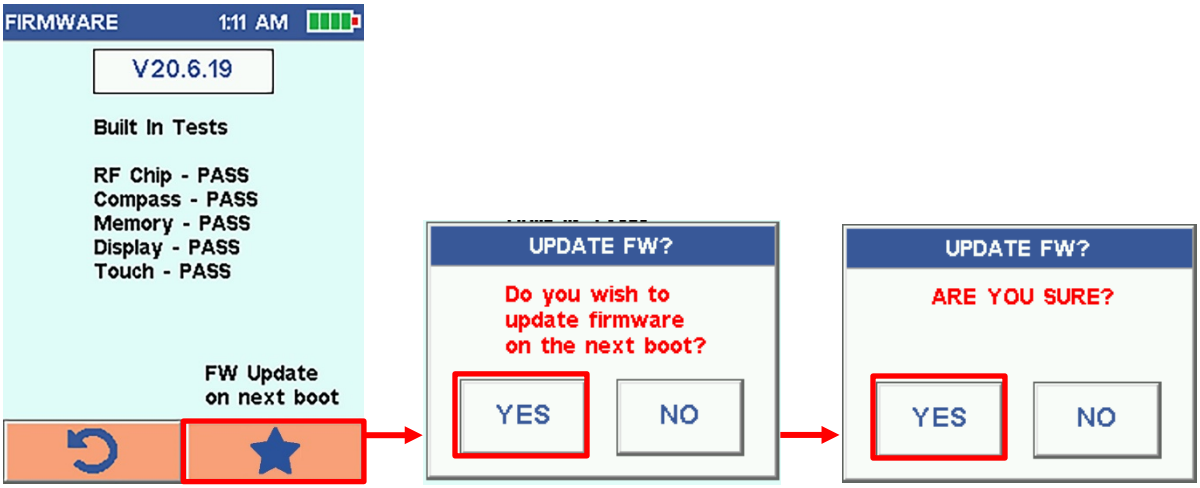
Setup Screen *Firmware Screen*

The Signal Scout has the ability to have its firmware upgraded via the USB port and any Windows PC.

Note: All of the calibration files and channel plan files are stored in protected flash memory and are not affected by a firmware update. The device Bootloader is also protected and cannot be erased.

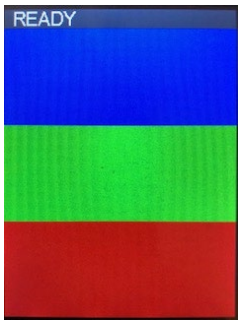
Update Firmware

1. Select the **FW Update Star button** in the lower right corner.
2. A pop up message is displayed asking *"Do you wish to update firmware on the next boot?"*
3. Select **Yes** to set the meter for a firmware update on the next power up or select **No** to return back to the Firmware screen and not do a firmware update on next power up.
4. If **Yes** is selected, the pop up messages asks "Are sure you?" Please select **Yes**.

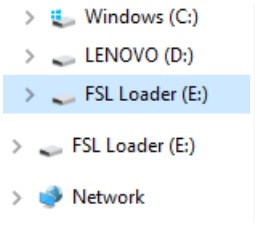


Firmware Screen *Confirmation Pop-Up* *Second Confirmation Pop-Up*

5. **Turn off** the Signal Scout by pressing the **Power button**.
6. Plug in the USB cable between the SignalScout and the PC.
7. Press the **Power button** on the SignalScout. A red-green-blue test pattern with READY on top is displayed.
8. If you do not wish to update the firmware at this time, simply turn off the Signal Scout and nothing will have changed.



9. On your PC, a USB Mass Storage device in Windows Explorer should be displayed. In this example, it is Drive (E:) but it could be any drive. However, it will always be labeled “FSL Loader”. If you do not see a drive like this, check the Psiber Data Systems website for an application note or contact technical support.



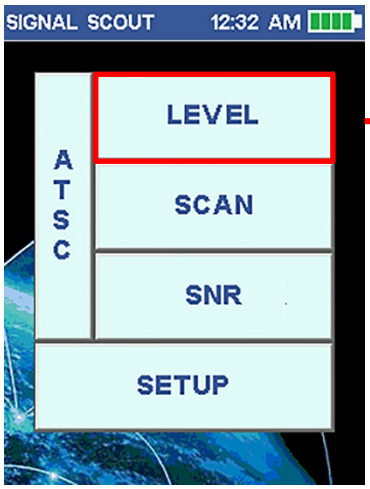
10. Find the firmware file on your PC (it will always be named “XXXX.sb”) For Example, “ss_mar_09_2020.sb” which represents Mar 9th, 2020 Signal Scout Firmware.
11. Drag and Drop the “ss_mar_09_2020.sb” file onto the drive “FSL Loader” and the unit will update itself and reboot. You can also copy the file “ss_mar_09_2020.sb” and paste it on the “FSL Loader” drive to accomplish the same thing. If a white screen comes up after automatic rebooting then turn off the power and turn back on.
12. After the device reboots, go to the **Firmware** screen and verify the version was updated to the correct date. For our example, it would say V20.3.9 for March 9th 2020.

ATSC Level

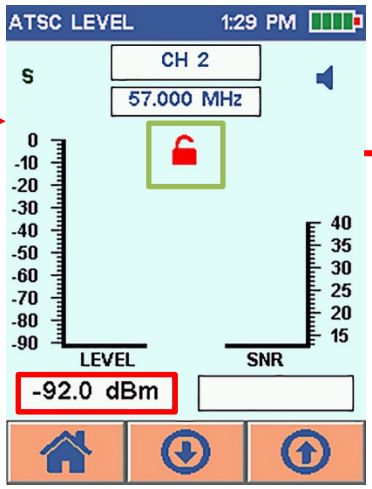
From the **Home Screen**, Select the **Level** button while **ATSC** button is shown.

There are 2 graphs displayed on the **Level** Screen - the **Power Level** on the Left and **Signal-to-Noise Ratio (SNR)** on the Right. These graphs show if a signal is detected and signal strength. The levels are shown numerically under each graph. Selecting the **Power Level** or **SNR Numberical white boxes** will toggle the meaurment settings between dBm and dBmV.

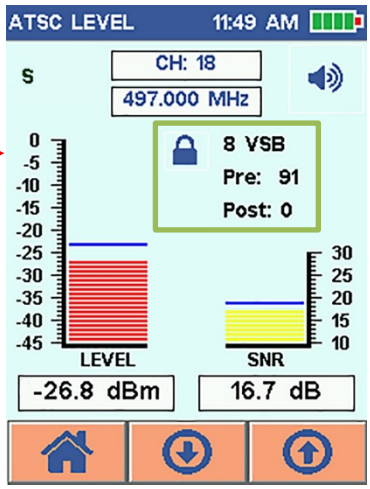
When the signal is not found, a **Red Padlock** is shown. Once the channel is locked and being decoded then the padlock will close and turn **Blue**.



Home Screen

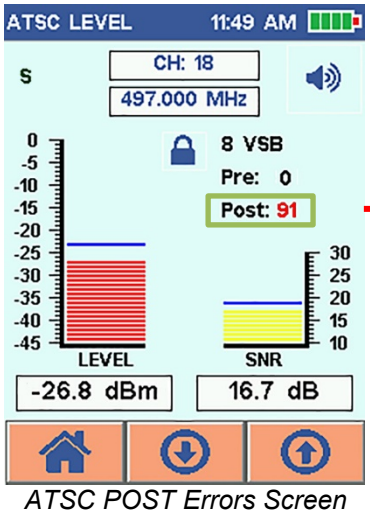


ATSC Level Unlocked Screen

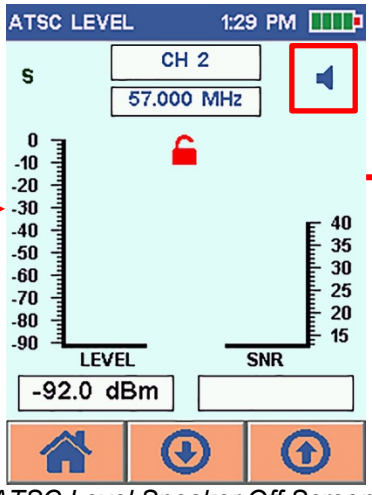


ATSC Level Locked Screen

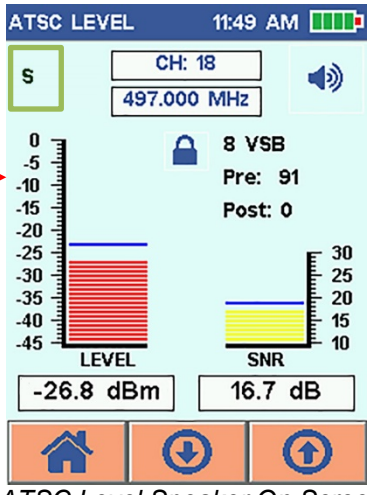
Pre and **Post** errors are shown on this screen once the padlock is locked. **Pre** are coding errors in the data that are automatically corrected by a TV's error correction algorithm. **Post** errors cannot be corrected and cause picture problems. If **Post** errors are found, they will be shown in **Red**. The 8 VSB encoding level is displayed.



ATSC POST Errors Screen



ATSC Level Speaker Off Screen

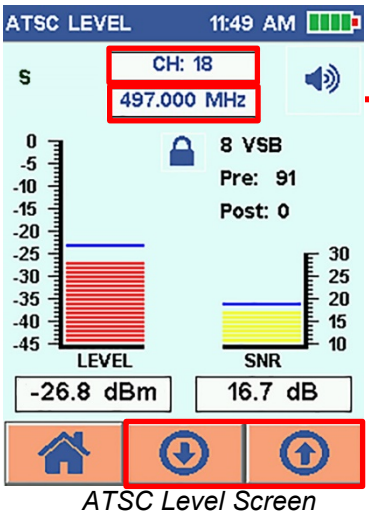


ATSC Level Speaker On Screen

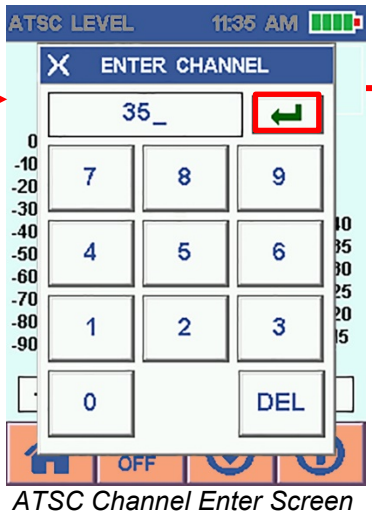
Select the **Speaker** icon in the top right corner of the screen to enable an audible tone that is proportional to the received signal strength. There will be no tone below -79 dBm.

The built-in **Compass** gives a starting direction for aiming the antenna. For best results, hold the SignalScout flat and horizontal to the ground with the LCD display facing up.

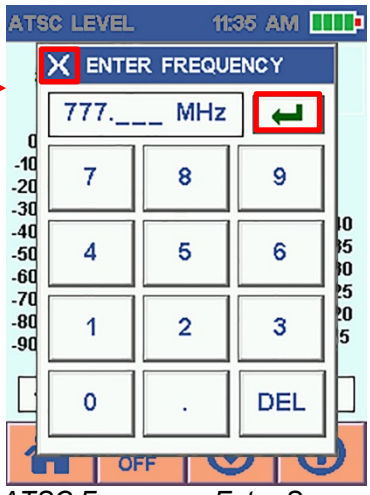
The SignalScout continuously scans for ATSC Levels on the selected Channel and Frequency shown on the top of the screen. Select the **Up** and **Down Arrow** buttons to change the Channel and Frequency shown at the Top.



ATSC Level Screen



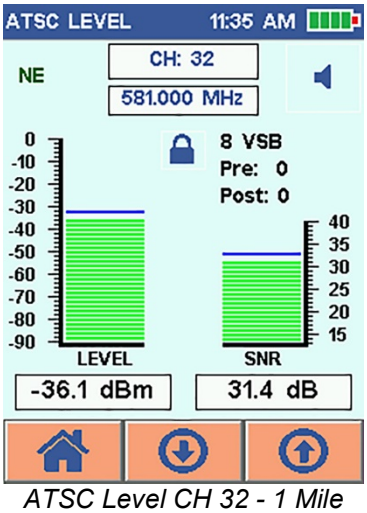
ATSC Channel Enter Screen



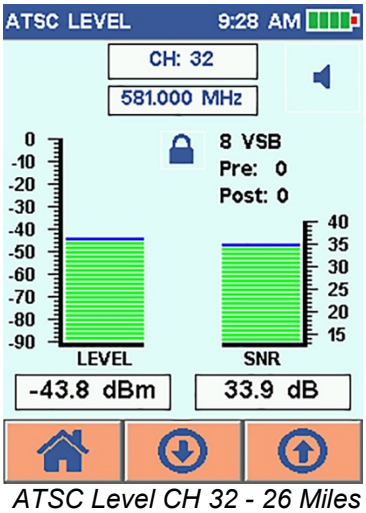
ATSC Frequency Enter Screen

Select the white **Channel** or **Frequency** button and enter in a specific channel or frequency to jump to that specific number instead of scrolling through all the numbers. Select the **Green Enter** Arrow button to select a specific number or select the "**X**" to cancel and go back to the **ATSC Level** Screen without saving entered data.

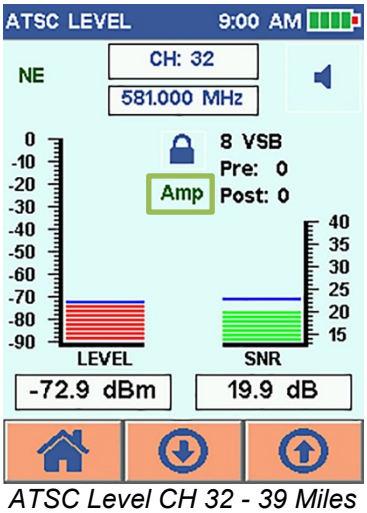
Below shows a signal on Channel 32 (Frequency 581.000 MHz) at 1 mile, 26 miles and 39 miles away from the broadcasting tower. This example shows how the signal strength decreases due to distance.



ATSC Level CH 32 - 1 Mile



ATSC Level CH 32 - 26 Miles



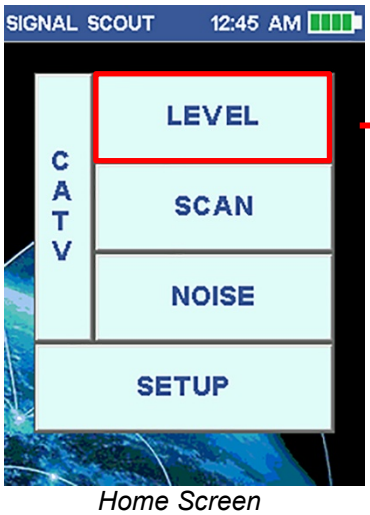
ATSC Level CH 32 - 39 Miles

CATV Level

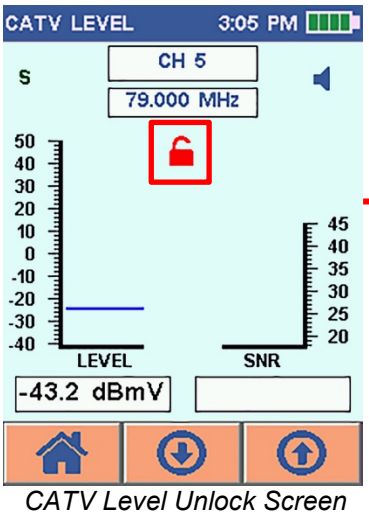
From the **Home Screen**, Select the **Level** button while **CATV** button is shown. The **CATV Level** Screen is displayed and acts exactly like the **ATSC Level** Screen.

There are 2 graphs displayed on the **Level** Screen - the **Power Level** on the Left and **Signal-to-Noise Ratio (SNR)** on the Right. These graphs show if a signal is detected and signal strength. The levels are shown numerically under each graph. Selecting the **Power Level** or **SNR numberical white boxes** will toggle the meaurment settings between **dBm** and **dBmV**.

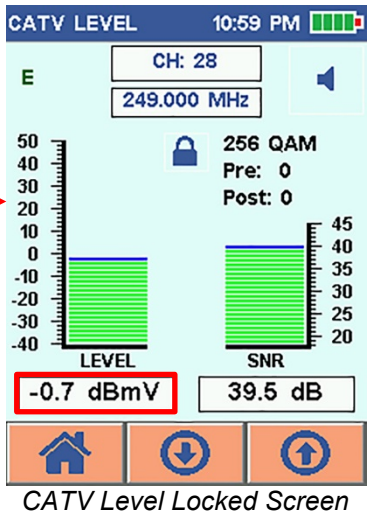
When the signal is not found, a **Red Padlock** is shown. Once the channel is locked and being decoded then the padlock will close and turn **Blue**.



Home Screen



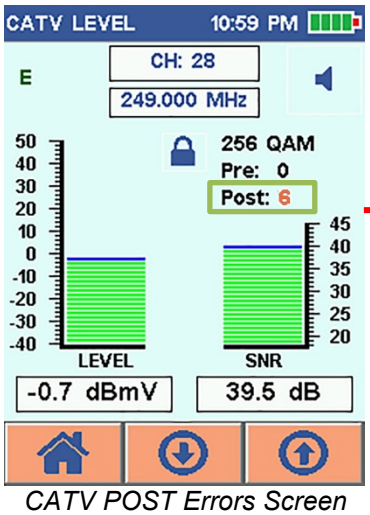
CATV Level Unlock Screen



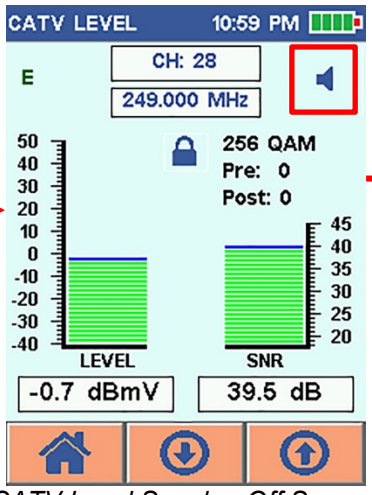
CATV Level Locked Screen

Pre and **Post** errors are shown on this screen once the padlock is locked. **Pre** are coding errors in the data that are automatically corrected by a TV's error correction algorithm. **Post** errors cannot be corrected and cause picture problems. If **Post** errors are found, they will be shown in **Red**.

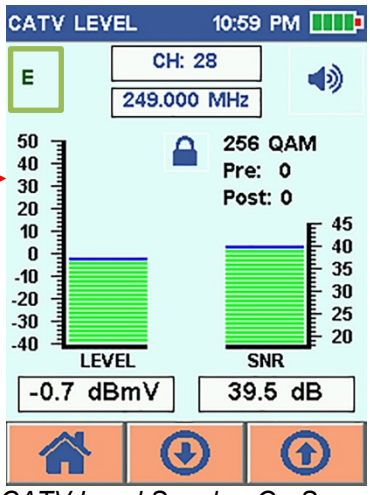
The QAM encoding level is displayed. The SignalScout is 64/256 QAM compliant and DOCSIS 3.1 (OFDM) signal level compatible.



CATV POST Errors Screen



CATV Level Speaker Off Screen

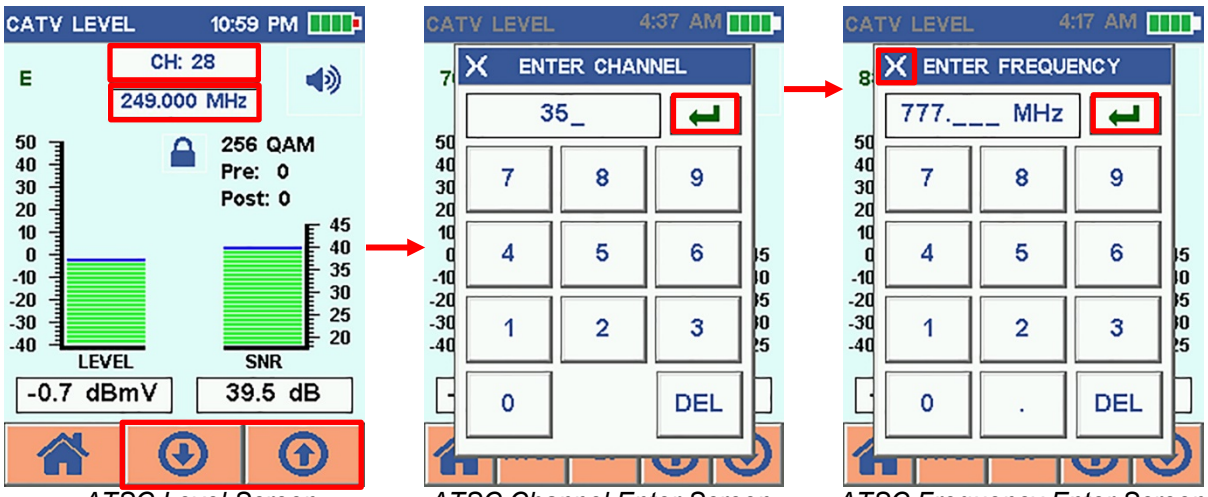


CATV Level Speaker On Screen

Select the **Speaker** icon in the top right corner of the screen to enable an audible tone that is proportional to the received signal strength. There will be no tone below -79 dBm.

The built-in **Compass** gives a starting direction for aiming the antenna. For best results, hold the SignalScout flat and horizontal to the ground with the LCD display facing up.

The SignalScout continuously scans for CATV Levels on the selected Channel and Frequency shown on the top of the screen. Select the **Up** and **Down Arrow** buttons to change the Channel and Frequency shown at the Top.



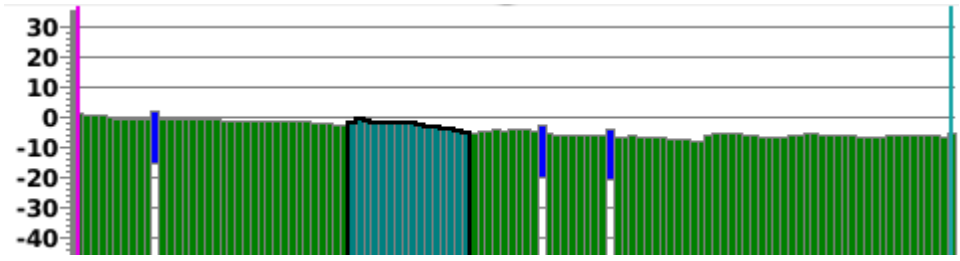
ATSC Level Screen *ATSC Channel Enter Screen* *ATSC Frequency Enter Screen*

Select the white **Channel** or **Frequency** button at the top and enter in a specific channel or frequency to jump to that specific number instead of scrolling through all the numbers. Select the **Green Enter** Arrow button to select a specific number or select the "**X**" to cancel and go back to the **CATV Level** Screen without saving entered data.

Once finished, select the **Home** button to return to the **Home** Screen.

Here is a visual example of a typical cable TV channel plan.

Note: A channel plan is simply a collection of channels



There are many digital TV channels shown in GREEN, a few older legacy analog channels in BLUE, and a new DOCSIS 3.1 OFDM channel in CYAN.

This is very common as cable companies transition from old analog to modern digital and state of the art DOCSIS 3.1 video and data formats. Since Signal Scout supports coaxial testing, it can measure power on all of these types of channels.

Signal Scout uses an advanced measurement chip that can lock on to and measure ATSC / 8VSB over-the-air signals and QAM 64/256 Annex-B (A, C also possible) coaxial signals. It also supports analog 6MHz power and the DOCSIS 3.1 6 MHz power measurement.

Note: DOCSIS (Data Over Cable Service Interface Specification) is an international telecommunications standard that permits the addition of high-bandwidth data transfer to an existing cable television (CATV) system.

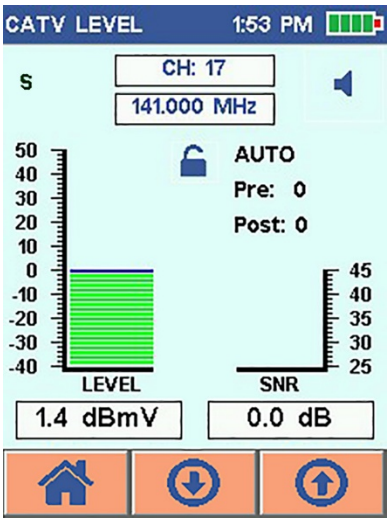
Note: CEA-542 called out in the DOCSIS 3.1 Physical Layer Specification is a Consumer Electronics Association standard that defines a channel identification plan for 6 MHz-wide channel frequency allocations in cable systems.

Note: Section 9.3.9 in the DOCSIS 3.1 Physical Layer Specification says the purpose of the downstream received power metric is to measure the average received downstream power in a set of non-overlapping 6 MHz bands for any DOCSIS 3.0 (QAM 64/256) and DOCSIS 3.1 (OFDM) signal in the receive channel set of the Cable Modem including the DOCSIS 3.1 PLC (Physical Link Channel).

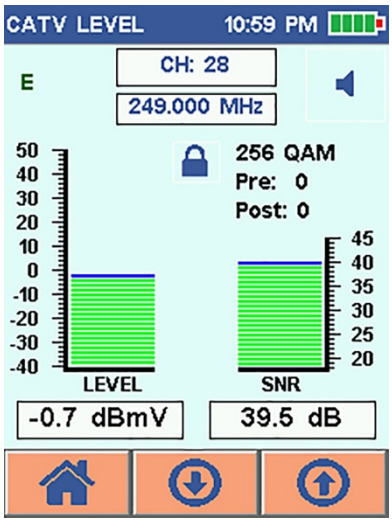
When it comes to Analog or DOCSIS 3.1 channels, Signal Scout sees their appropriate 6 MHz power and cannot lock on to them. When it comes to Digital QAM channels, the Signal Scout also measures SNR / MER and Bit Error Rate (pre-FEC and post-FEC).

Here is an example of a NTSC Analog Channel 17, QAM 256 Digital Channel 35 and a DOCSIS 3.1 Channel 36 to Ch 51 for a Bandwidth of 96 MHz

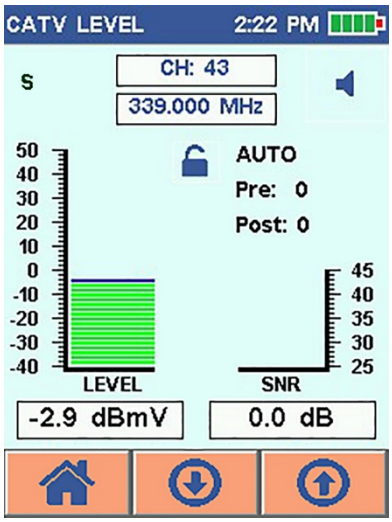
Note: Per the D3.1 specification, this is divided into 6 MHz channels (in our case 16 Channels)



Analog Channel (No SNR)



QAM Channel with SNR

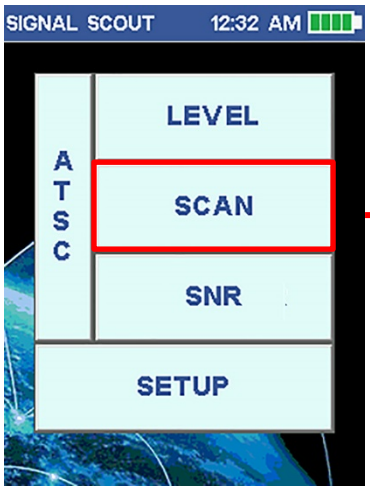


DOCSIS 3.1 Channel (No SNR)

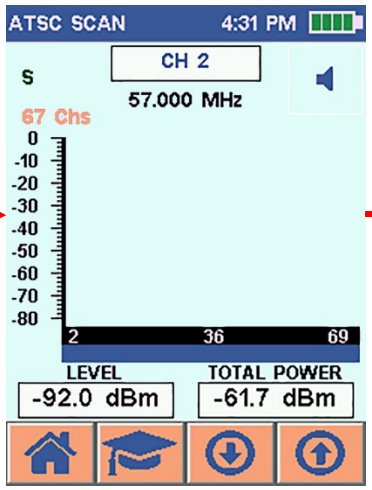
ATSC Scan

From the **Home Screen**, Select the **SCAN** button while the **ATSC** button is shown.

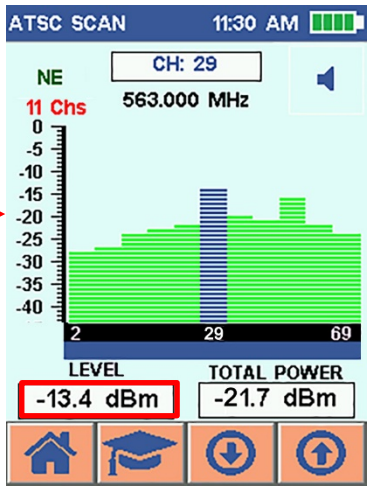
The SignalScout will scan all channels from the selected frequencies in the channel plan entered in **Setup** and displays the power levels for each frequency in a single graph. The **Power Level** for the selected channel and **Total Power** is displayed under the graph. Selecting the **Power Level** or **Total Power numberical white boxes** will toggle the meaurment settings between **dBm** and **dBmV**.



Home Screen



ATSC Start Scan Screen



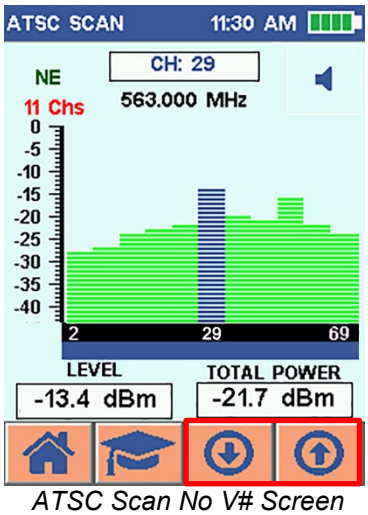
ATSC Toggle Scan Screen

Select the **Up** and **Down Arrow** buttons to scroll through the channels on the graph. The selected channel will be displayed as a **Blue** line.

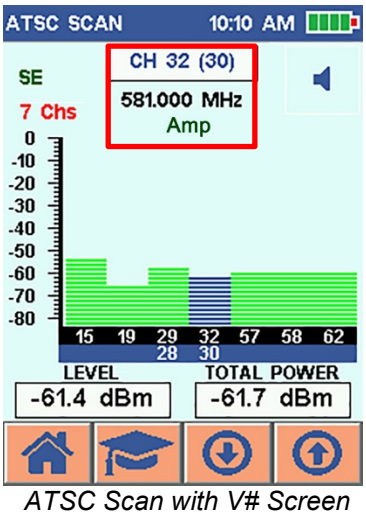
The channel number, the virtual number (if entered), and frequency will be displayed at the top of the screen. The virtual number will be displayed in parentheses next to the channel number. The total number of channels selected from the channel plan in setup is displayed in red below the direction on the left.

If an amplifier is needed for any of the channels, then the word **Amp** will be displayed under the frequency.

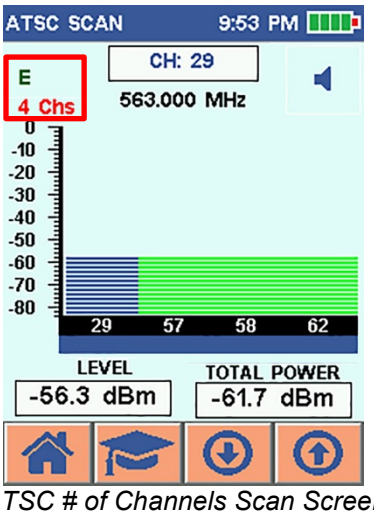
Below the graph, the channel numbers are displayed in the **Black** bar and the virtual number are displayed in the **Blue/Grey** Bar.



ATSC Scan No V# Screen

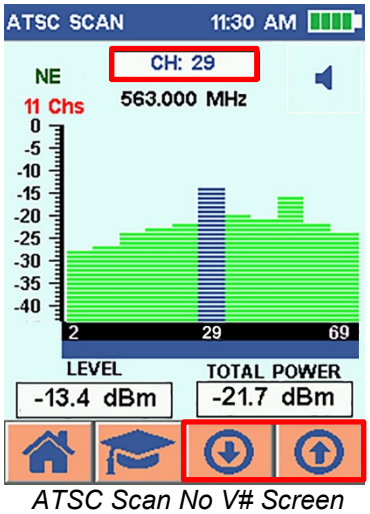


ATSC Scan with V# Screen

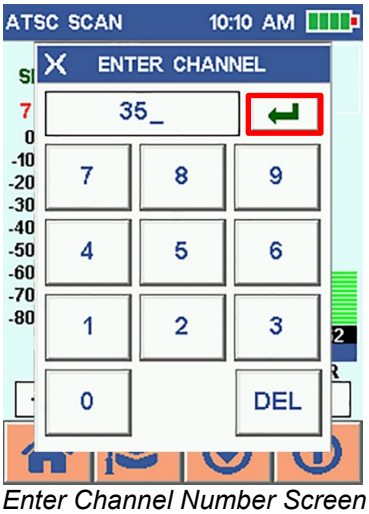


ATSC # of Channels Scan Screen

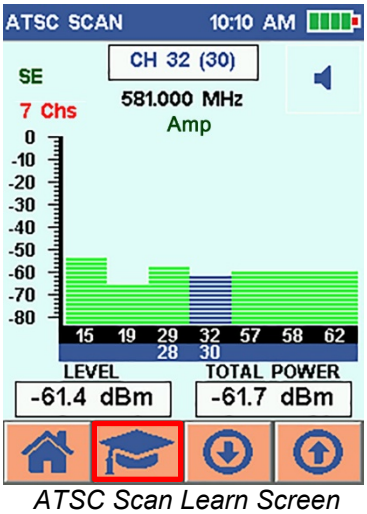
Select the white **Channel** button and enter in a specific channel to jump to that specific number instead of scrolling through all the numbers. Select the **Green Enter** Arrow button to select a specific number or select the "**X**" to cancel and go back to the **ATSC Scan** Screen without saving entered data.



ATSC Scan No V# Screen



Enter Channel Number Screen



ATSC Scan Learn Screen

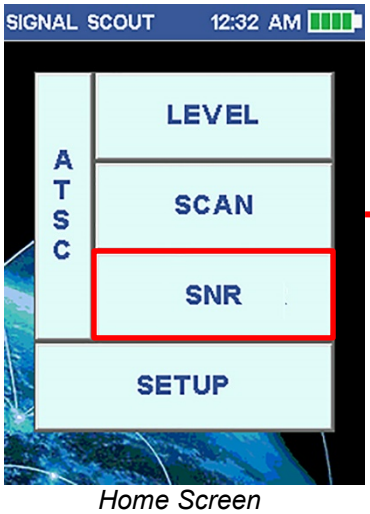
Select the **Learn** button to scan and display all channels that a signal was detected. A signal is detected if it is over the **Learn Level Limit** under **Setup**. When selecting the **Learn** button, the channel plan in **Setup** will be updated and saved to the channels that were detected in that specific area and direction. This button is used when going into a new unknown area and unable to setup a Channel Plan to test.

Once finished, select the **Home** button to return to the **Home** Screen.

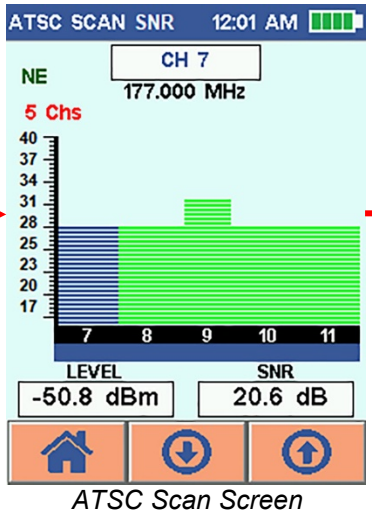
ATSC Scan SNR

From the **Home Screen**, Select the **SNR** button while the **ATSC** button is shown.

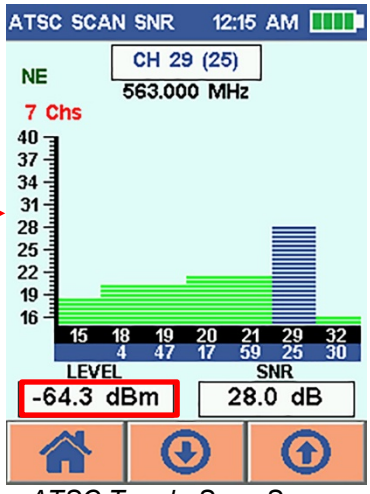
The **ATSC Scan SNR** screen is setup up exactly like the **ATSC Scan** screen except **Total Power** is changed to **SNR** and no learn button. The SignalScout will scan all channels from the selected frequencies in the channel plan entered in **Setup** and displays the power levels for each frequency in a single graph. The **Power Level** and **SNR** for the selected channel is displayed under the graph. Selecting the **Power Level** or **SNR numberical white boxes** will toggle the meaurment settings between **dBm** and **dBmV**.



Home Screen



ATSC Scan Screen



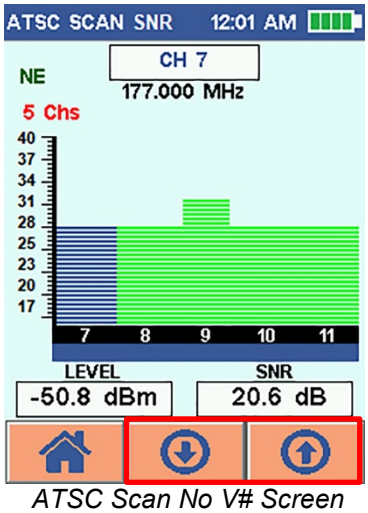
ATSC Toggle Scan Screen

Select the **Up** and **Down Arrow** buttons to scroll through the channels on the graph. The selected channel will be displayed as a **Blue** line.

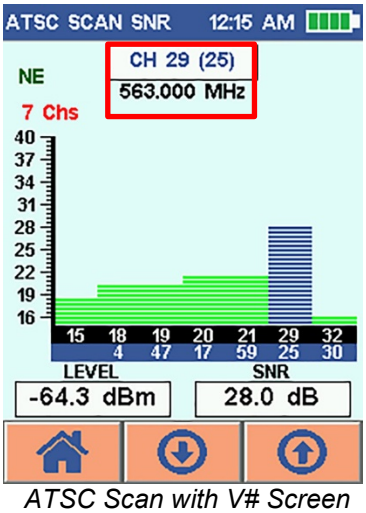
The channel number, the virtual number (if entered), and frequency will be displayed at the top of the screen. The virtual number will be displayed in parentheses next to the channel number. The total number of channels selected from the channel plan in setup is displayed in red below the direction on the left.

If an amplifier is needed for any of the channels, then the word **Amp** will be displayed under the frequency.

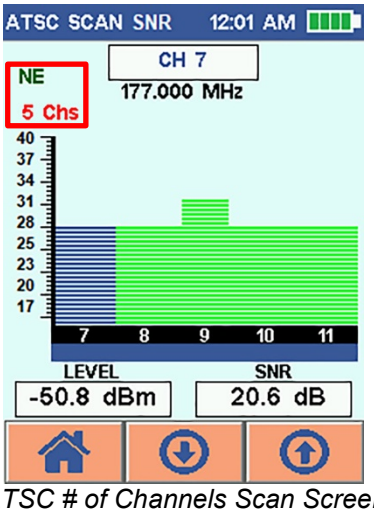
Below the graph, the channel numbers are displayed in the **Black** bar and the virtual number are displayed in the **Blue/Grey** Bar.



ATSC Scan No V# Screen

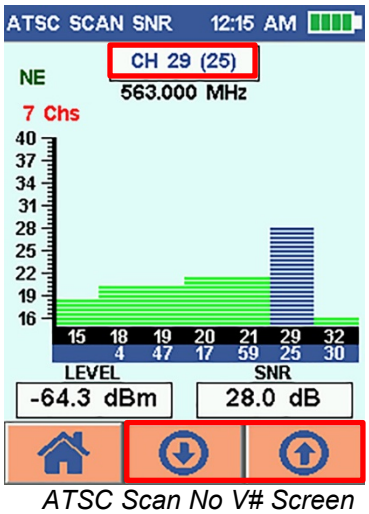


ATSC Scan with V# Screen

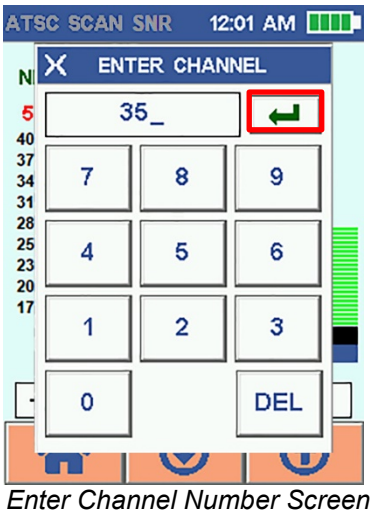


ATSC # of Channels Scan Screen

Select the white **Channel** button and enter in a specific channel to jump to that specific number instead of scrolling through all the numbers. Select the **Green Enter** Arrow button to select a specific number or select the "**X**" to cancel and go back to the **ATSC Scan SNR** Screen without saving entered data.



ATSC Scan No V# Screen

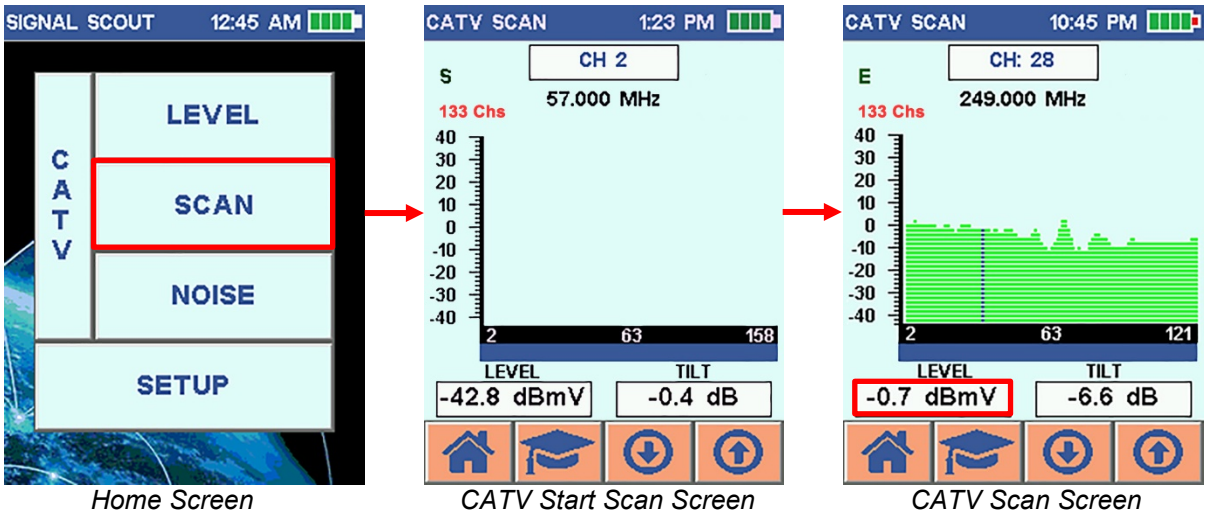


Enter Channel Number Screen

CATV Scan

From the **Home Screen**, Select the **SCAN** button while the **CATV** button is shown.

The SignalScout will scan all channels from the selected frequencies in the channel plan entered in **Setup** and displays the power levels for each frequency in a single graph. The **Power Level (dBm)** and **Tilt (dB)** is displayed for the selected channel. **Tilt** is calculated as the last channel power minus the first channel power. Select the **Power Level numberical white box** to toggle the meaurment settings between dBm and dBmV.

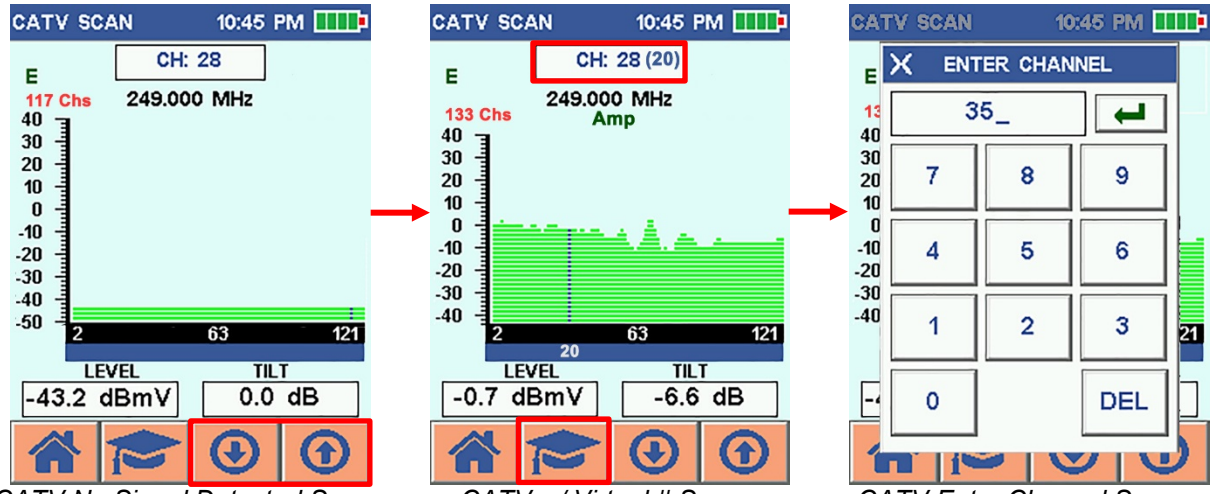


Home Screen *CATV Start Scan Screen* *CATV Scan Screen*

Select the **Up** and **Down Arrow** buttons to scroll through the channels on the graph. The selected channel will be displayed as a **Blue** line.

The channel number, the virtual number (if entered), and frequency will be displayed at the top of the screen. The virtual number will be displayed in parentheses next to the channel number. The total number of channels selected from the channel plan in setup is displayed in red below the direction on the left. If an amplifier is needed for any of the channels, then the word **Amp** will be displayed under the frequency.

Below the graph, the channel numbers are displayed in the **Black** bar and the virtual number are displayed in the **Blue/Grey** Bar.



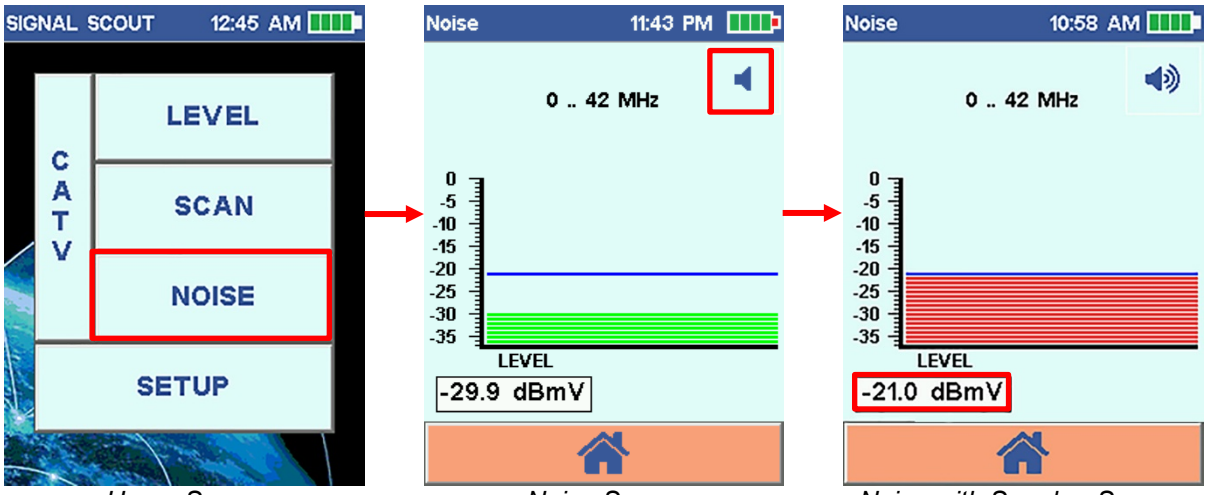
CATV No Signal Detected Screen *CATV w/ Virtual # Screen* *CATV Enter Channel Screen*

Select the **Learn** button to scan and display all channels that a signal was detected. A signal is detected if it is over the **Learn Level Limit** under **Setup**. When selecting the **Learn** button, the channel plan in **Setup** will be updated and saved to the channels that were detected in that specific area and direction. This button is used when going into a new unknown area and unable to setup a Channel Plan to test.

Once finished, select the **Home** button to return to the **Home** Screen.

Noise

From the **Home Screen**, Select the **Noise** button while **CATV** is displayed. The **Nosie** Power Level graph is displayed. The actual power level number is displayed below the graph. Select the **Power Level numberical white box** to toggle the meaurment settings between dBm and dBmV.



Home Screen *Noise Screen* *Noise with Speaker Screen*

Select the **Speaker** icon to enable an audible tone that is proportional to the Ground Block Noise Strength.

This can be used to detect problems like loose connectors and cut cables that should be minimized to get the best cable modem installation. There is no tone below -30 dBmV. Noise return power is measured through a 42MHz low pass filter.

Once finished, select the **Home** button to return to the **Home** Screen.