# Source Generator Feature

Introduction

The Source Generator feature provides the user with the ability to generate either a Continuous wave (CW), a 16/32/64/128/256 QAM, or a DOCSIS® 3.1 signal with adjustable frequency, level, and modulation in the return path from 5 to 85 MHz. This feature would allow the user to shoot a signal back to the headend, or any point down the line, and have someone else measure the results, testing for lose cables or degradation of signal.

If the dual RF option is also included, the user can utilize the Loopback function with allows for the meter to both transmit and receive a test signal, thereby allowing the user to test a device with one meter.

To access this feature, select the **Source** icon from the **Utility** menu, as shown below.
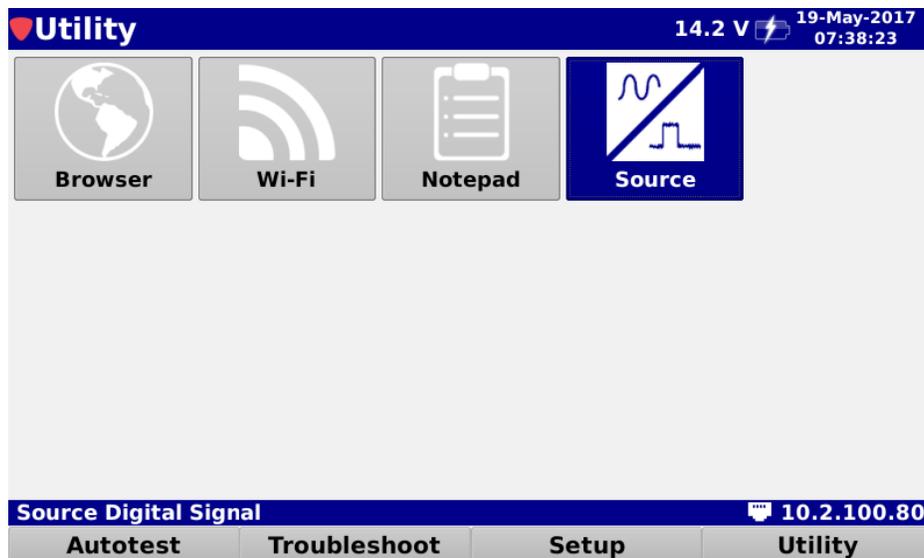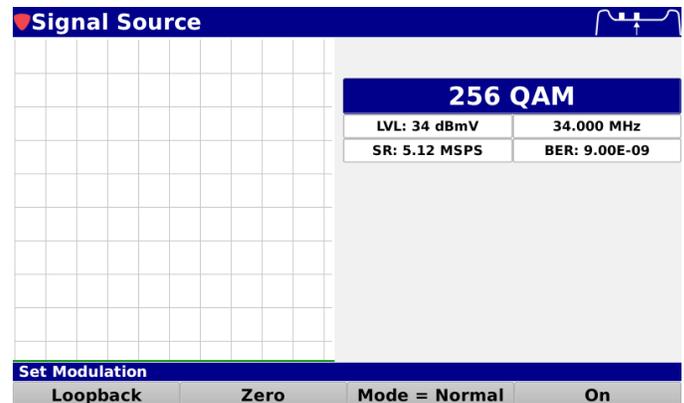
The Signal Source screen will be displayed as shown here. This screen displays the type of signal source along with related signal settings. In this example, the source is set to CW, which allows for simple level and frequency adjustments.
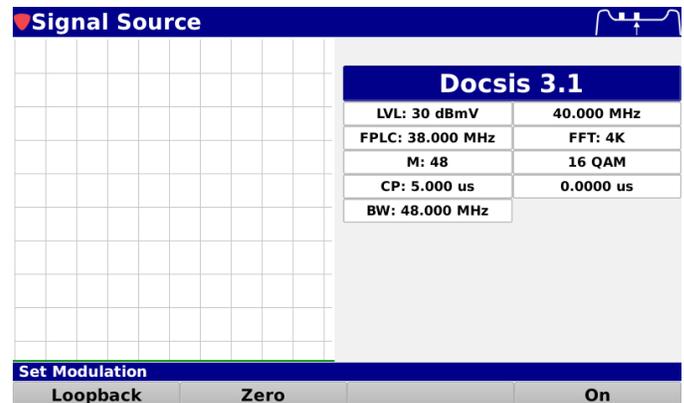
Take note of the mete icon at the top right of the screen, which indicates the RF port you need to use. This will change if you access the Loopback function.

Signal Source

| CW	
LVL: 40 dBmV	66.000 MHz
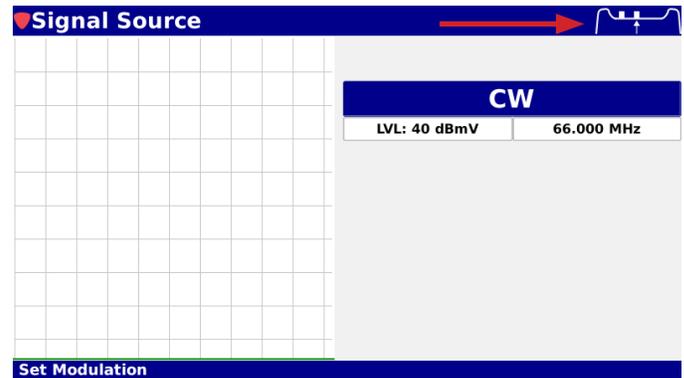
Set Modulation

Here is an example of the QAM settings. You will notice there are additional modulation settings which can be adjusted in order to simulate an actual upstream signal.

Signal Source

256 QAM	
LVL: 34 dBmV	34.000 MHz
SR: 5.12 MSPS	BER: 9.00E-09

Set Modulation

Loopback	Zero	Mode = Normal	On

The third signal type is a DOCSIS 3.1 signal. Once again, additional settings are available to help simulate your OFDM signal.

Signal Source

Docsis 3.1	
LVL: 30 dBmV	40.000 MHz
FPLC: 38.000 MHz	FFT: 4K
M: 48	16 QAM
CP: 5.000 us	0.0000 us
BW: 48.000 MHz	

Set Modulation

Loopback	Zero		On

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Once you have selected and adjusted your signal source, press the **On** softkey. The meter will then scan for incoming signals.
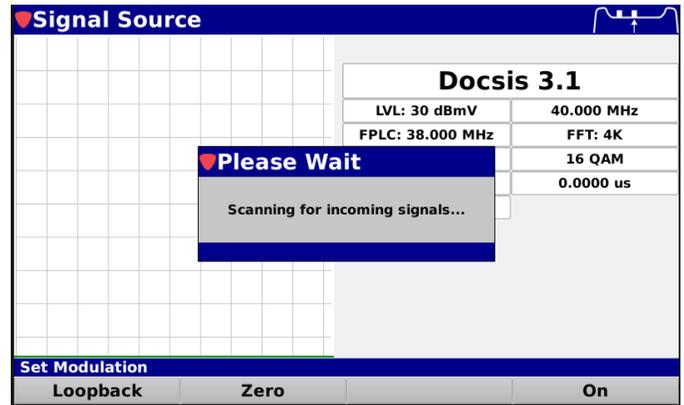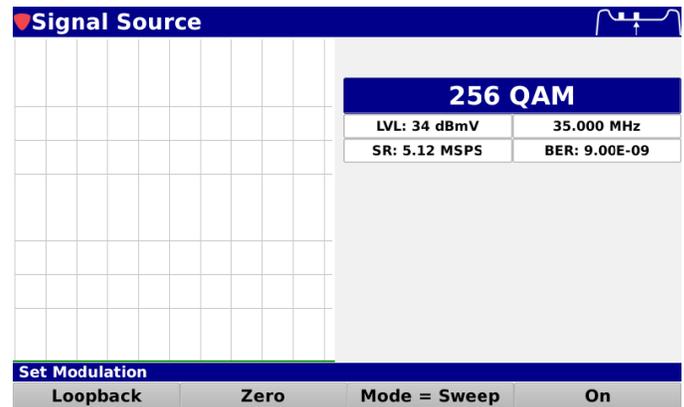

If an incoming signal is detected, the meter will warn the you and issue a continue option.
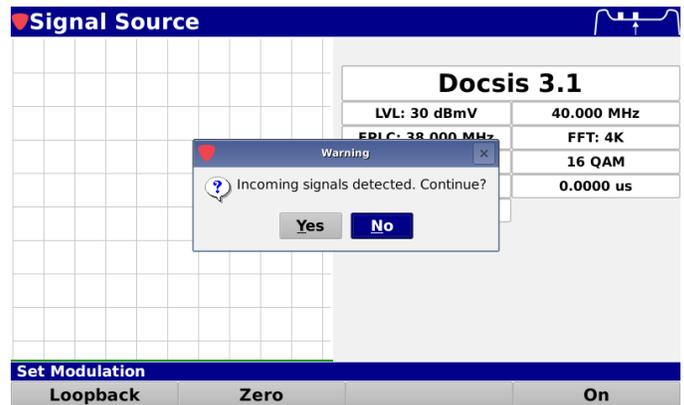
If you select yes, or there is not an incoming signal, the meter will generate a signal and transmit it.

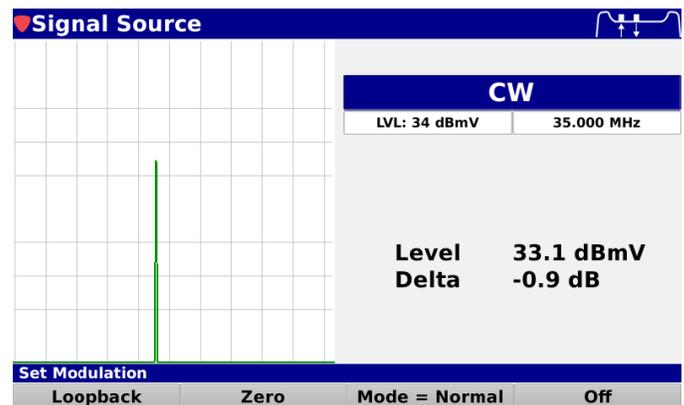**innovative technology** to keep you a ***step ahead***
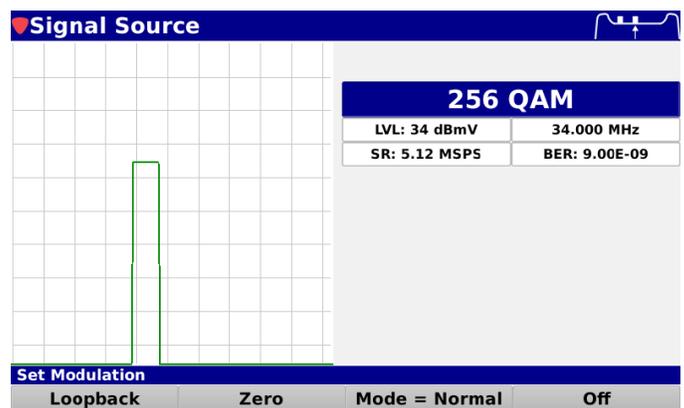
In the CW and QAM modulation settings, you also have a Mode = setting, which allows for either **Normal** or **Sweep**. This setting must be toggled prior to turning the TX on.

Signal Source

256 QAM

LVL: 34 dBmV	35.000 MHz
SR: 5.12 MSPS	BER: 9.00E-09

Set Modulation

Loopback	Zero	Mode = Sweep	On

Set Modulation

Loopback	Zero	Mode = Normal	On

As mentioned above, if the meter also has the dual RF option, you can utilize the Loopback function, which will allow for the meter to both transmit (TX) and receive (RX) the test signal. Loopback is available in the CW and QAM modulation settings.

The signal adjustments are the same, but once you turn on the Loopback, you will also see the RX information below the TX information. Note that the RF port requirements have changed, and the meter icon in the upper right has been updated.

Signal Source

CW

LVL: 34 dBmV	35.000 MHz

Level	33.1 dBmV
Delta	-0.9 dB

Set Modulation

Loopback	Zero	Mode = Normal	Off

Prior to using Loopback to test a device, it is a good idea to connect a short jumper between the TX and RX ports, and then press the **Zero** softkey. This will "calibrate" your output, so that you start with a good TX level.

> **NOTE**
>
> *For Additional Help, Contact Trilithic Applications Engineering*
> *1-800-344-2412 or 317-895-3600*
> *support@trilithic.com or www.trilithic.com*

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