

In order to provide the best accuracy for this measurement the video signal under tests should be at least 5 dBmV in level and the built in bandpass filters should be set to automatic mode. These automatic filters are used to prevent the analyzer from being overloaded when measuring low level distortion and noise. To turn on the automatic bandpass filters press the **FREQ** hard key from any of the measurement screens and press the bottom soft key to turn the filter to **AUTO**. If the video signal being tested is less than 5 dBmV the filters should be set to **OFF**. This measurement is not necessary for HRC frequency allocations.

A preamplifier is not normally needed because the AT2500 analyzer has its own internal pre-amp. A signal level of 5 dBmV will produce a 65 dB dynamic range.

In order to make a gated CSO measurement, a quiet line of video is necessary. Sunrise Telecom recommends the use of a quiet line inserter at the headend. If this is not available, we recommend using a local origination channel because the video normally originates at the headend. This measurement can be made using quiet lines from a broadcaster.

The first step in making this measurement is to verify which lines are quiet lines on the channel to be measured. This is most easily accomplished by using the video demodulator option or alternatively the depth of modulation measurement in the main menu. To verify a quiet line, use the following steps from the turn on condition of the analyzer.

USING VIDEO DEMODULATOR TO LOCATE A QUIET LINE

1. From the main menu, highlight the Video measurement and enter.
2. Press the **Freq** hard key then the video carrier soft key. Enter the desired channel number and press enter.
3. Press **Span** and then using the **Line Select** soft key, step up through the lines of video until a quiet line is displayed as shown in Figure 1. Notice the field and quiet line number displayed at the top of the screen.

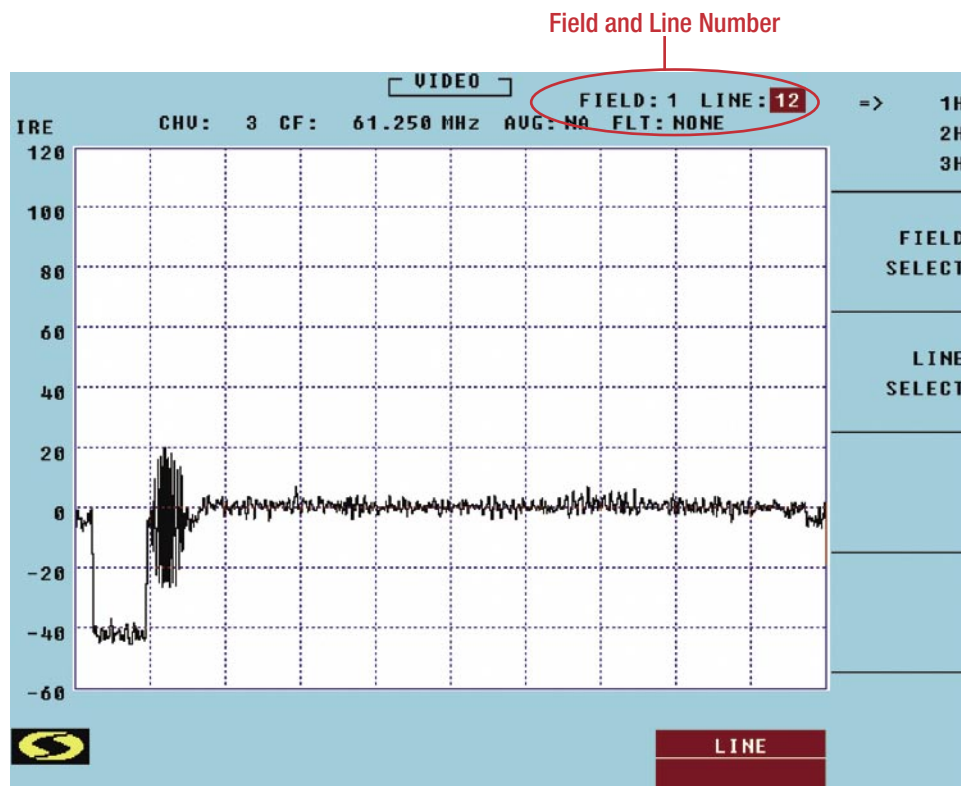
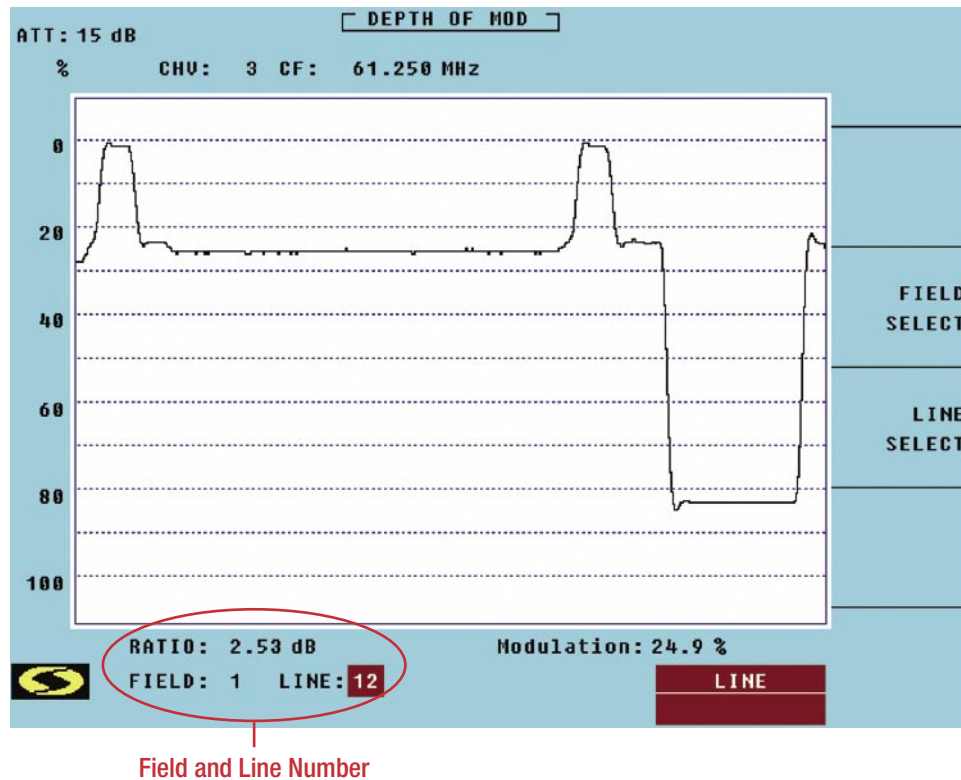


Figure 1

ALTERNATE METHOD: USING DEPTH OF MODULATION TO LOCATE A QUIET LINE

1. From the main menu, highlight the Depth of Mod measurement and enter.
2. Press the Freq hard key then the video carrier soft key. Enter the desired channel number and press enter.
3. Press the escape key and that returns the analyzer to the Depth of Mod mode.
4. Using the Line Select soft key, step up through the lines of video until a quiet line is displayed as shown in Figure 2. Notice the field and quiet line number displayed on the bottom.

*Figure 2*

Once a quiet line is found, the next step is to make the carrier to noise measurement. From the video or depth of modulation measurement, take the following steps.

1. Press the MENU hard key and select the CCN, CSO, CTB measurement.
2. Make sure single measurement is selected on the top soft key.
3. On the second soft key, make sure that CSO is selected.
4. This is a gated measurement so be sure that gated is selected on the third soft key.
5. Make sure Discrete Freq Interference is set to OFF.
6. Press the Set Measurement Parameters soft key. Ensure that the field and line are selected from the procedure above. Also check the CSO measurements shown in Figure 3. Make sure they are turned on for standard frequency allocation systems except for the -1.25 MHz measurement. This is not required by the NCTA Recommended Practices and falls outside the channel's lower channel boundary anyway. Save the set up with the soft key and this returns you to the measurement menu. Note: These settings can be configured in the channel plan so that the analyzer will always use the correct measurement settings for a specific channel.

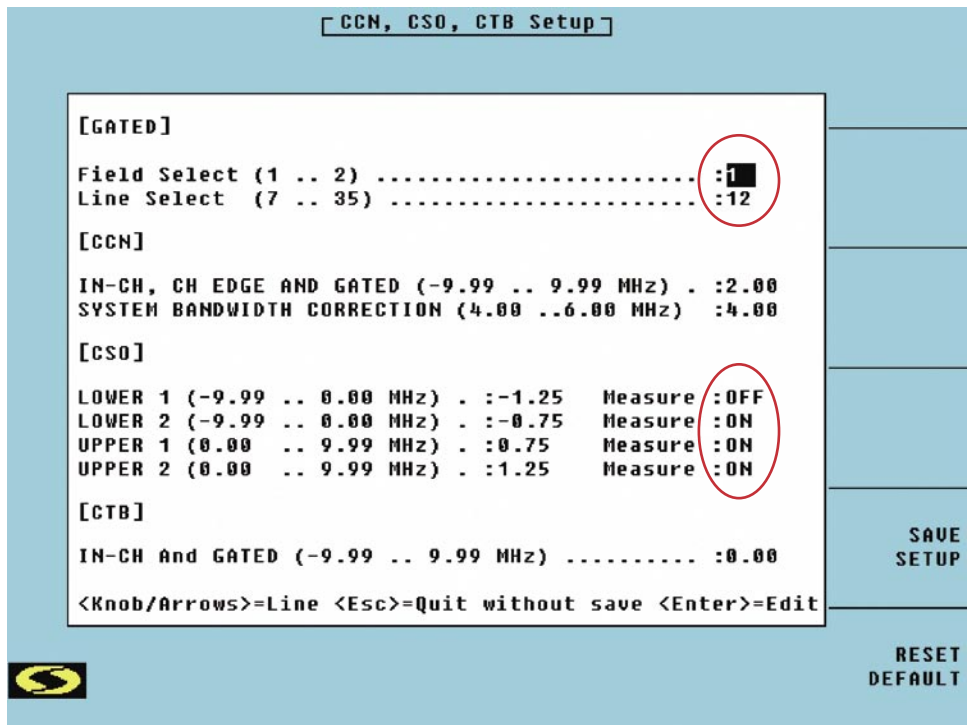
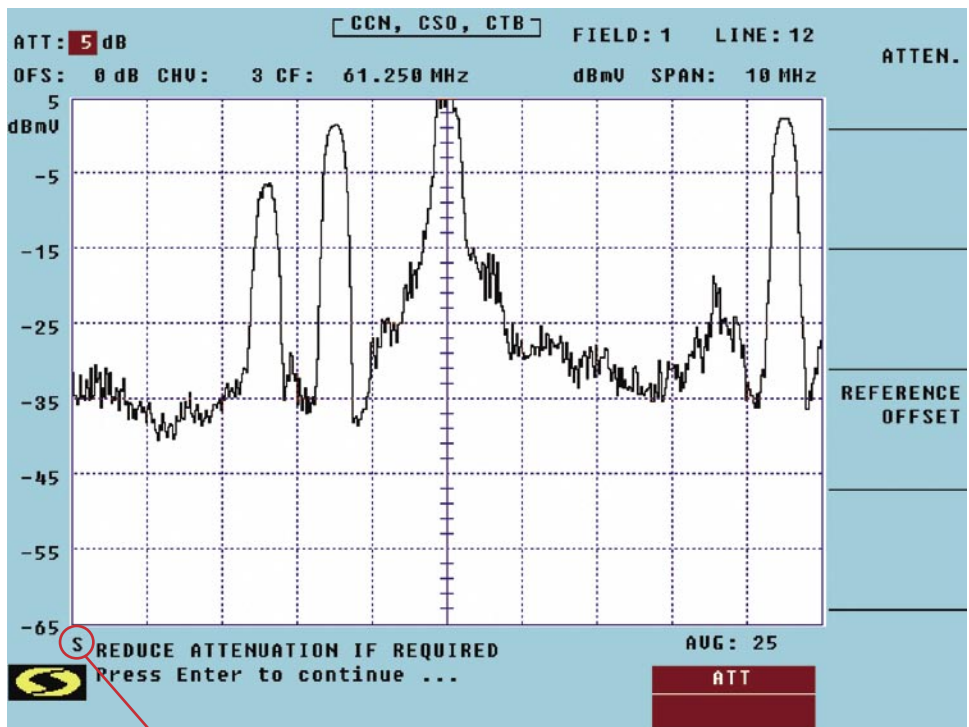


Figure 3

7. Press the Measure soft key and you will get an indication to set the attenuator even though it has auto-ranged to make the carrier level measurement. Set the attenuator using the arrow keys so that the video carrier is near the top graticule or slightly beyond but not high enough to cause an S to appear above the Sunrise Telecom logo indicating that the analyzer input is saturated (see Figure 4).



Saturation Indicator

Figure 4

8. Press enter and the measurement will continue. The results are displayed on the bottom of the screen as shown in Figure 5. The analyzer measures the 3 CSO beats and displays the worst case CSO beat. Notice also the noise correction factor. The lower this number, the better the accuracy of the measurement. A correction factor of 7 dB or more indicates inaccuracy. To reduce the correction factor set the video carrier higher in step 7.

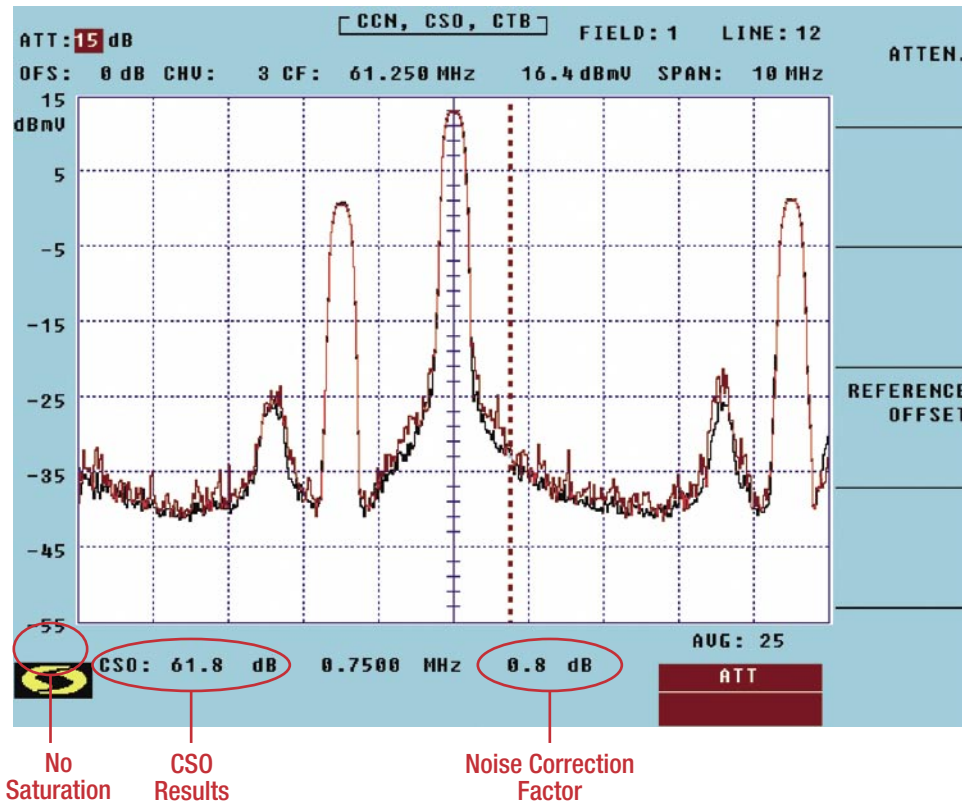


Figure 5

9. To repeat the measurement press ESC and repeat step 7.
10. To save the measurement press the STORE key and then the STORE RECORD softkey. Enter a file name, ID Code (optional) and comments (optional).

Note: If these measurements are to be used to create an FCC proof of performance report using WinCom II, you must enter the correct ID Code (HEAD for headend or TP01, TP02...for field test points) to identify the location of the measurement.