

Agilent PN 8590-10

Obtaining Analog Spectrum Analyzer Characteristics with a Digital Display

Product Note

Using the Analog+ display function in Agilent Technologies 8590 C/E-series spectrum analyzers with Option 101 or 301

The Analog+ display is a firmware enhancement that expands the features of the Agilent 8590 C/E-series spectrum analyzers. All 8590 C/E-series analyzers ordered with Option 101, fast time-domain sweeps, include this digital implementation of an analog display.

Analog+ gives the analyzer the look and feel of older analog displays, such as the Agilent 8558B, but with added power from modern digital techniques. Also included with Option 101

is a negative-peak detector, useful for video modulator balance adjustments and intermodulation distortion measurements.

Only with analog

Certain signal information, such as low-level interference, cannot be seen easily with a digital display (Fig. 1). This information is clearly visible on traditional analog displays. With the Analog+ displays, low-level interfering signals can be seen just as clearly (Fig. 2), but with the digital convenience of printer output and markers.

How does it work?

The Analog+ display samples the video signal at a high rate and displays multiple analog-to-digital (ADC) data values, or dots, in each vertical display slot. The resulting display has the look and feel of older analog displays, yet includes the added benefits of digital displays such as markers and an electronic graticule. Display density is variable from 1 to 40 dots per vertical slot, instead of the one ADC value per slot of the normal digital display.

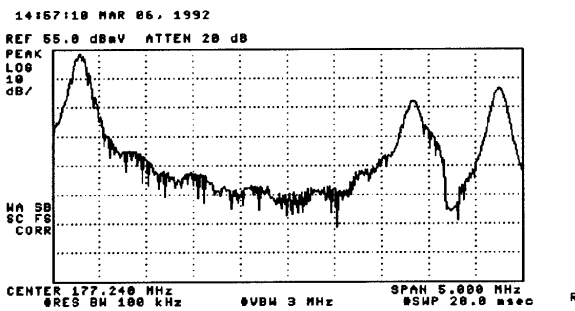


Figure 1. Digital display of television channel suspected of having intermodulation interference. The digital display and peak envelope detector mask the low-level interference signals.

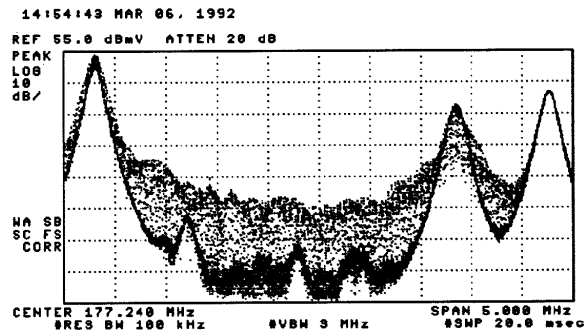


Figure 2. The same television signal with Analog+, showing a clear representation of interfering intermodulation products not visible in the digital mode.



Agilent Technologies

Innovating the HP Way

FCC multiburst

You can make a quick check of system frequency response with Analog+. Use the marker and delta-marker functions to check the six discrete frequency packets for frequency and amplitude.

Digital features with Analog+

- Hard-copy directly from a printer
- Negative-peak detector for video modulator adjustments and intermodulation distortion measurements
- Complete marker functions including peak search and noise readout
- Screen annotation functions such as title, linear and log scales, and graticule

Ordering Information:

Compatible spectrum analyzers

- 8591C
- 8591E
- 8593E
- 8594E
- 8595E
- 8596E

Required configuration

The Analog+ display mode is available on the 8590 C/E-series analyzers with Option 101, (Fast Time-domain Sweeps) or Option 301, (a combination of Options 101 and 102, AM/FM Demodulator).

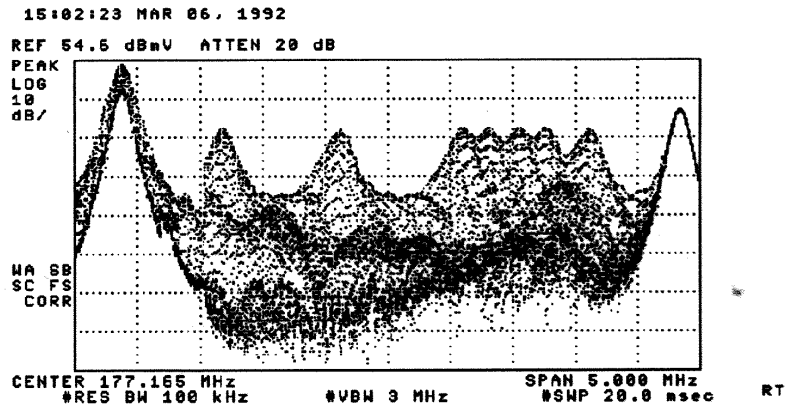


Figure 3. FCC multiburst display with Analog+ clearly shows the generated tones. For the first time in spectrum analysis, markers can be used on an analog-like display.

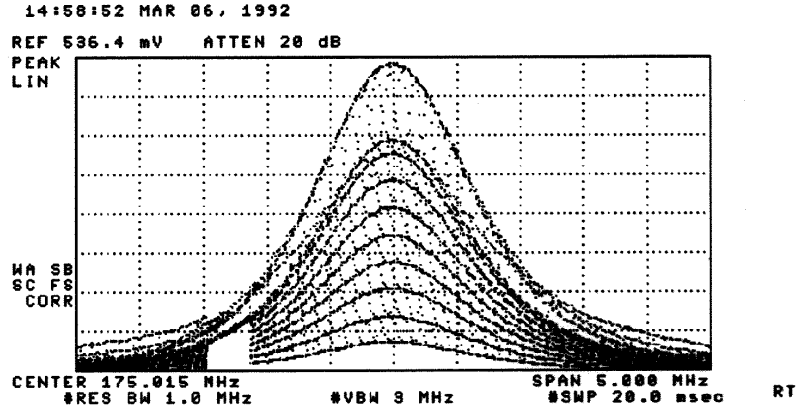


Figure 4. Television gray scale levels, the 10 IRE Linearity Step, are presented just as on an 8558B with an analog display, showing each linear step over the full screen from black to white.

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