



## 860 DSPi Upstream Linear Distortion

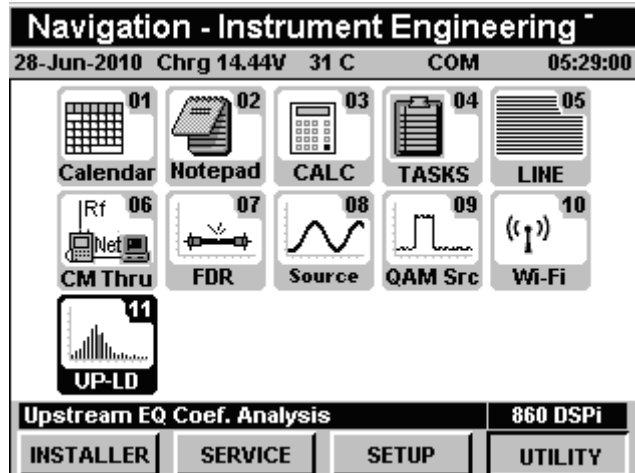
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### Upstream Linear Distortion

Upstream Linear Distortion analysis takes the EQ taps from the cable modem and displays their values. It also calculates and displays a response and delay graph. This mode works on a DOCSIS 2.0 or a DOCSIS 3.0 (8x4) modem. The Upstream Linear Distortion option is now available, option P/N 0930081017. 860 DSPi owners with the latest firmware update (version 11.1.1.1 or higher) may activate the option in the field by purchasing a key code.

### How do I use this new Mode

First you have to purchase and activate the option, then rebuild your icons. The new menu is called UP-LD and is located in the UTILITY section of the Navigation Menu.

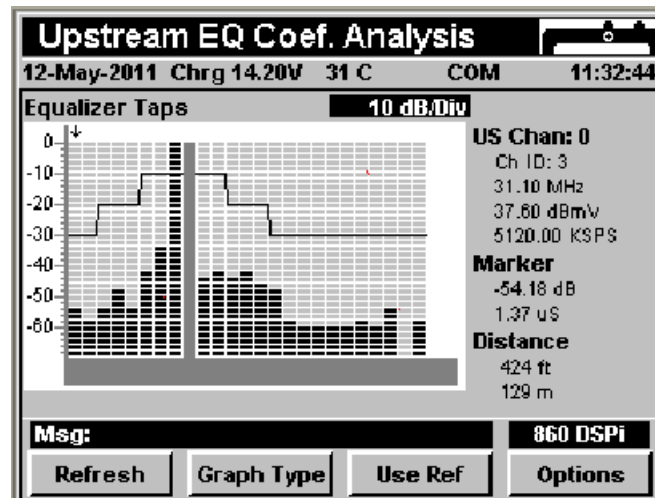


**Upstream EQ from the Navigation Menu**

For Additional Help Contact  
Trilithic Applications Engineering  
1-800-344-2412 or 317-895-3600  
[support@trilithic.com](mailto:support@trilithic.com) or  
[www.trilithic.com](http://www.trilithic.com)

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When the UP-LD mode is selected, the built in DOCSIS 2.0 or DOCSIS 3.0 (8x4) cable modem will be used to connect. Then, the UP-LD mode will display the current equalizer taps. This line follows the DOCSIS Specification for Upstream EQ taps.



### Upstream Equalizer Taps Graph

The line is drawn to the specification to allow the technician to quickly see any deviations for the spec.

The UP-LD mode you should notice the following controls:

- **Marker:** This moves the marker to the different taps and updates the marker data.
- **Refresh:** This button is used to fetch new data, the UP-LD menu is static and does not automatically fetch new data.
- **Graph Type:** This allows you to switch between the three Graphs provided in the UP-LD menu as follows:
  - a. Upstream Equalizer Taps
  - b. Upstream In-Channel Response
  - c. Upstream Group Delay

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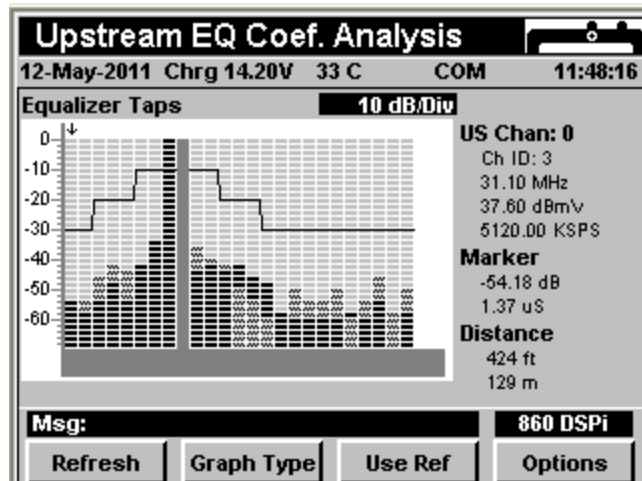
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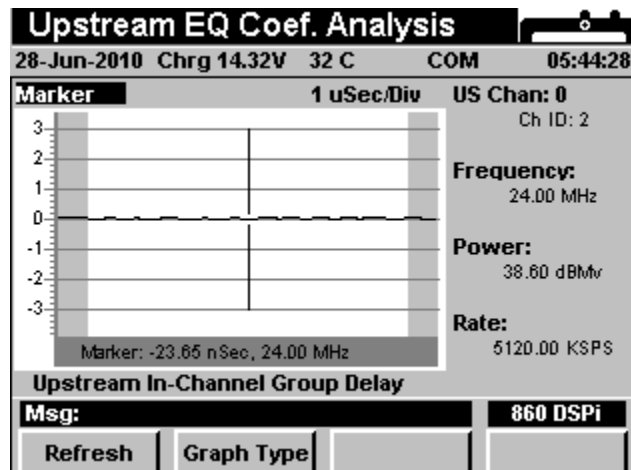
## Using a Reference

- You may use a reference when in this mode, you must first save a data log (this will be your initial reference)
- Press the "FN" key, and select "Save Data Log". Once this is saved you can press the "Use Ref" soft key and bring up the saved reference to display against the current live trace.

Note - The current measurement is in black while the reference is displayed in a pattern (See picture below for reference)



## In-Channel Response



## Upstream In-Channel Group Delay

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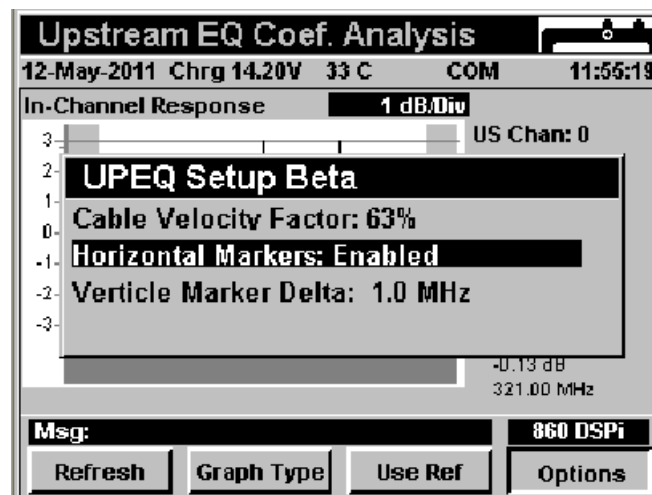
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- The ability to adjust the cable velocity factor can now be set inside the "Options" soft key. (See picture below)
- The ability to enable or disable the "Horizontal Markers" can be set by pressing the "Options" soft key. (See picture below)
- The ability to change the "Vertical Marker Delta" is also accessed by pressing the "Options" soft key. You can change this in to 0.1 MHz, 0.5 MHz, 1.0 MHz, 1.5 MHz, 2.0 MHz, 3.0 MHz, respectively

### Using a Reference

- You may use a reference when in this mode, you must first save a data log (this will be your initial reference)
- Press the "FN" key, and select "Save Data Log". Once this is saved you can press the "Use Ref" soft key and bring up the saved reference to display against the current live trace.
- Note - The current measurement is in black while the reference is displayed in a grey pattern. (See picture above)

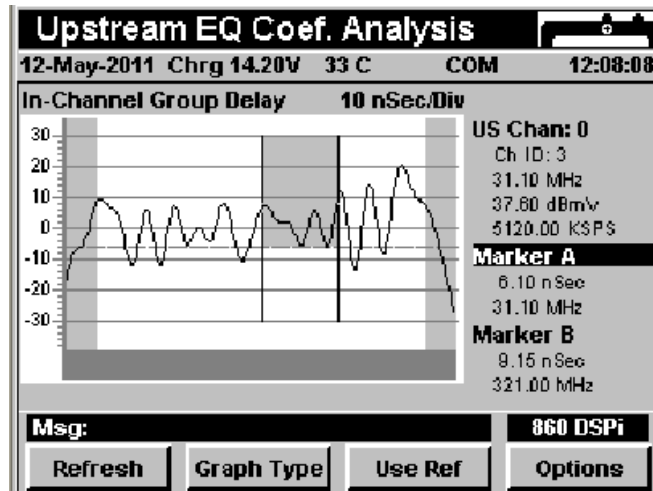


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### Group Delay



### Upstream In-Channel Response

- The ability to adjust the cable velocity factor can now be set inside the "Options" soft key. (See picture below)
- The ability to enable or disable the "Horizontal Markers" can be set by pressing the "Options" soft key. (See picture below)
- The ability to change the "Vertical Marker Delta" is set at a fixed width of 200 nSec per 1 MHz, which is stated by the DOCSIS specification.
- You may also change your nSec per division. The following nSec/Div can be set: 1 uSec, 10 uSec, 20 uSec, 50 uSec, 100 uSec, 1 nSec, 10 nSec, 20 nSec, 50 nSec, 100 nSec, Respectively.

#### Using a Reference

- You may use a reference when in this mode, you must first save a data log (this will be your initial reference)
- Press the "FN" key, and select "Save Data Log". Once this is saved you can press the "Use Ref" soft key and bring up the saved reference to display against the current live trace.
- Note - The current measurement is in black while the reference is displayed in a grey pattern. (See picture above)

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