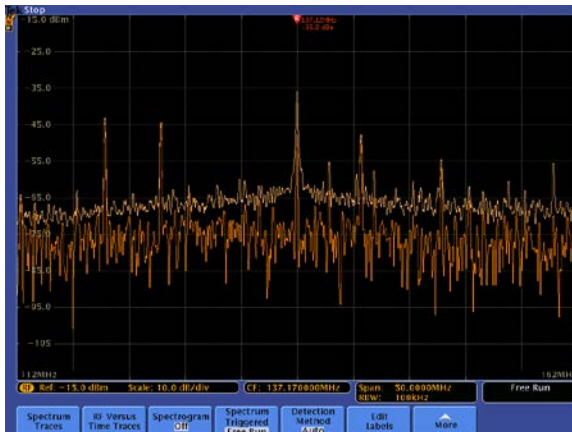


Troubleshooting EMI Problems

Your Challenges:

EMC testing is expensive. Multiple visits to a test house can add significant cost and delay to your project. You can not afford the tools and setup used at a test house.

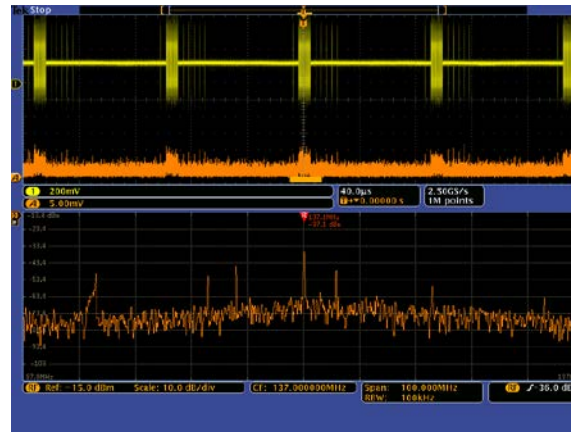
Precious time and opportunities can also be lost in hunting for the location and source of your EMI problems. A common practice is to use a near field probe and a spectrum analyzer to localize sources of emission identified in an EMI report. With a traditional spectrum analyzer your troubleshooting is now stalled and you are left looking for sources of EMI in your schematics.



Quickly see spectral emissions with the integrated spectrum analyzer in the MDO4000B Series.

Tektronix Advantage:

The MDO4000B provides features that enable you to quickly troubleshoot EMI problems. Many EMI problems come from events rooted in the time domain, such as clocks, power supplies, and serial data links. The MDO4000B combines a spectrum analyzer, oscilloscope, and logic channels into a single instrument that enables you to measure the relationship between time-domain events and spectral emissions.



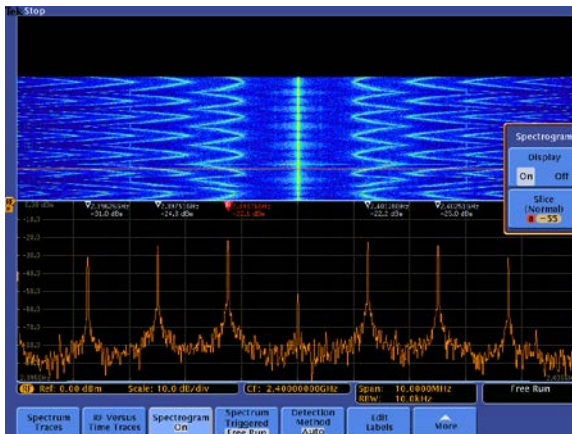
Trigger on known EMI suspects (such as power supplies, clocks, serial buses, etc.) to directly measure and correlate frequency and time domain events.

Unique Benefits of Tektronix Solutions:

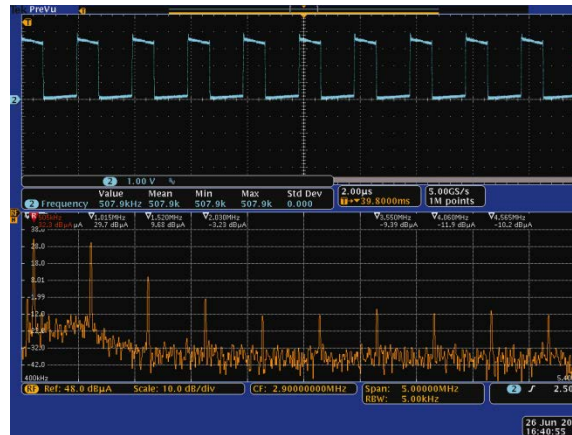
- The MDO4000B is the only instrument that incorporates a spectrum analyzer, oscilloscope, and logic analyzer in a single compact package.
- The MDO4000B is the only instrument capable of providing time correlated views of analog (power supplies), digital (serial buses) and RF (EMI) signals in a single instrument.
- This mixed-domain correlation means that the MDO4000B can assist in pinpointing the root cause of an EMI failure.
- The MDO4000B is a cost effective solution to validate design performance so that only one trip to an EMI test house is needed.
- The entry-level MDO4000B provides more measurement capability at a lower price than a stand-alone spectrum analyzer with comparable performance.
- Tektronix offers a wide variety of probes to address voltage and current measurements for the analog and spectrum analyzer inputs of the MDO4000B.

Troubleshooting EMI Problems

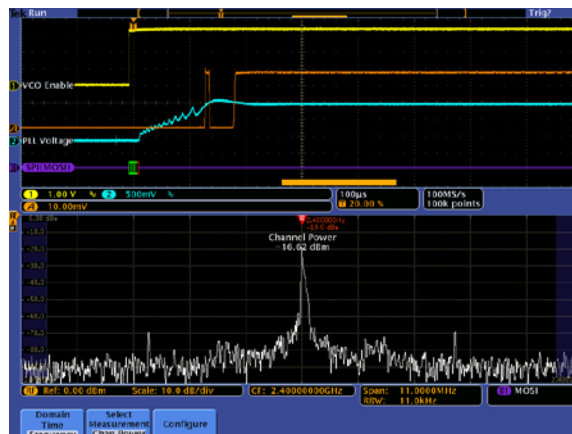
For the first time ever, you can capture time-correlated analog, digital, and RF signals for a complete system view of your device. See both the time and frequency domains in a single glance. View the RF spectrum at any point in time to see how it changes over time or with device state. Solve the most complicated design issues, quickly and efficiently, with an instrument as integrated as your design.



A spectrogram is a view of relative amplitudes in a spectrum as seen over time. The spectrogram display provides an intuitive color map showing how your signal varies over time. You can even go back and compare previously acquired data.



Simultaneously view the control voltage of the switching transistor while measuring the EMI.



Monitor system level interaction between analog, digital and RF events. Quickly locate potential sources of EMI.

More Information:

Datasheet:

- MDO4000B Series

Videos:

- MDO4000B Series Virtual Tour
- Advanced RF and Cross Domain Triggering
- Complete Analysis of Wide Bandwidth Systems
- MDO4000B Spectrum Analyzer vs. Scope FFT
- Hunting Noise Sources in Wireless Embedded Designs
- Debug of a WLAN Power Amplifier
- www.youtube.com/user/w2aew
- and more at www.tek.com/mdo4000b

Literature:

- Fundamentals of the MDO4000B Series (application note)
- Secrets Behind MDO4000B Spectrum Analyzer Dynamic Range (application note)
- Troubleshooting EMI problems: To Peak or NOT to Peak (white paper)
- Troubleshooting common EMI problems (white paper)
- Probing Consideration for Low Voltage Measurement such as Ripple (application note)
- MDO4000B Series vs. Traditional Scope FFT (fact sheet)
- Hunting Noise Sources in Wireless Embedded Systems (application note)
- and more at www.tek.com/mdo4000b

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