Agilent 86130A BitAlyzer® Enhanced Error Analysis Options Product Overview





The Agilent 86130A BitAlyzer is a complete 3.6 Gb/s error performance analyzer. It has many features, including advanced error analysis, that will save you time. In addition to the suite of standard analysis features, described here are two additional analysis options that will give you greater insight.

Option 200 – Error Correction Coding Analysis

Using the precise bit error locations found by the 86130A BitAlyzer, map these onto a user defined block code error correction architecture such as Reed Solomon. Check the constraints imposed by the user defined correction and see which errors would have been corrected, and which would not. All of the other error analyses can then be used on the post-corrected data, enabling you to compare corrected and uncorrected performances. Play "what-if" games on your system without ever having to build hardware. Previous computer-based techniques for correction simulation have often assumed random noise models for error distribution. At last, you don't need to make guesses of how errors occur in your channel-measure them. If your channel suffers from pattern sensitivity, or power supply noise, then these are the error locations that are presented to the corrector design that you have chosen. Use this captured information to stress your designs for accurate predictions of their effectiveness in the real world.

The 86130A supports two dimensions of error correction and three dimensions of error interleaving before the correction is applied. It also supports erasure processing where inner code failures can be used to flag outer code erasure thereby doubling your burst correction ability. Statistics are also maintained during analysis to give an ongoing monitor of the corrector effectiveness.

ECC Performance Data	<u> </u>
Symbols in Group	36,108
Groups Processed	97,044
C1 Symbol Errors	37,082
C1 Blocks with Error	16,011
C1 Symbols Corrected	21,850
C1 Blocks Failed	2,107
C2 Symbol Errors	15,232
C2 Blocks with Error	14,941
C2 Symbols Corrected	15,232
C2 Blocks Failed	0
Erasures Used	0
Erasure Symbols Corrected	0
Uncorrectable Symbols	0

Monitor the performance of your emulated corrector with the built-in statistics.



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Option 100 – 2-Dimensional Error Mapping Analysis

Create an image on the display that represents the errors found on your data channel. Select a divider for the y-axis, such as a packet length or an amount of time. For some applications, this might have a physical interpretation such as the number of bits in a helical scan of a video cassette recording system. In such an example, you have a two dimensional mapping based on individual passes of the head across the tape in columns on the display, and all of the columns lined up next to each other representing the number of feet of tape.

In a similar way, examine long runs of error results, and quickly zero-in on areas that look interesting. Leaving a test to run overnight with a one second block size, for example, can be very revealing. With infinite panning and zooming, it is now possible to examine clusters of errors, and see structure such as bursts or other groupings.

A picture really is worth a thousand words–or more importantly, saved time.



See your errors in more revealing ways.

Additional Literature

86130A BitAlyzer color brochure (Agilent lit. #5968-8547E) 86130A BitAlyzer technical specifications (Agilent lit. #5968-8545E)

BitAlyzer is a registered trademark of SyntheSys Research, Inc.



www.agilent.com/comms/lightwave

You can also contact one of the following centers and ask for a test and measurement sales representative.

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Agilent Technologies Test and Measurement Call Center P.O. Box 4026 Englewood, CO 80155-4026 (tel) 1 800 452 4844

Canada:

Agilent Technologies Canada Inc. 5150 Spectrum Way Mississauga, Ontario L4W 5G1 (tel) 1 877 894 4414

Europe:

Agilent Technologies Test & Measurement European Marketing Organization P.O. Box 999 1180 AZ Amstelveen The Netherlands (tel) (31 20) 547 2000

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