Spirent **Paragon-400G**

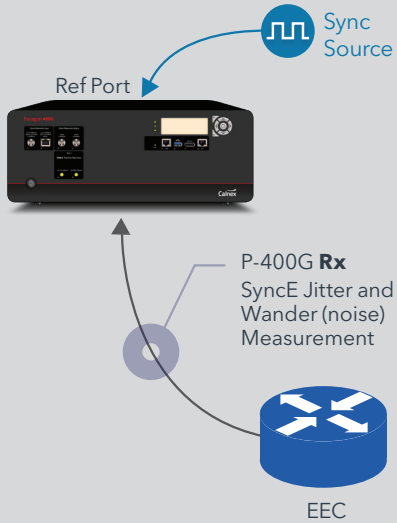
Prove Ethernet Sync at 400GbE

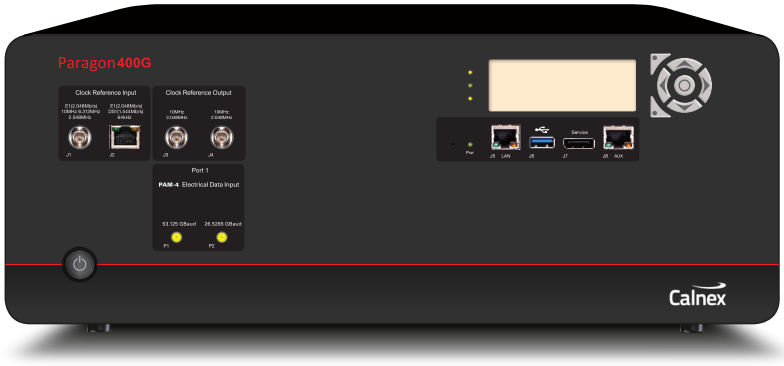
SyncE Performance Summary

- 53.125 and 26.5625 GBaud PAM-4 SyncE measurement
- Test 400GbE SyncE jitter generation performance to ITU-T G.8262
- Prove 400GbE Sync wander generation performance to ITU-T G.8262
- Evaluate MTIE/TDEV Pass/Fail results to ITU-T G.8262 masks

400G SyncE Applications: ITU-T G.8262 (Jitter and Wander)

The Paragon-400G supports 53.125 and 26.5625 GBaud PAM-4 SyncE testing to ITU-T G.8262 including Jitter generation and Wander (noise) generation.





Full testing of high speed interfaces is essential when qualifying an Ethernet switch or router. That's because higher interface rates inherently increase the design challenges of keeping jitter and wander noise to a minimum. Consequently, to ensure your 400GbE devices and systems deliver the high quality network services of the future, look no further than the Paragon-400G for verifying synchronization accuracy and guaranteeing standards compliance.

The new Paragon-400G solution precisely measures 25 GBaud and 50 Gbaud PAM-4 frequency synchronization at 400GbE in accordance with ITU-T G.8262 standards. And, in conjunction with the Calnex Analysis Tool (CAT), you'll get valuable insight of actual timing performance, whether you are developing, verifying and manufacturing 400GbE devices, or designing and deploying 400G networks and systems.

The Paragon-400G web-based user-interface offers simple port set up, while its built-in controller lets you operate the tester directly from a tablet.

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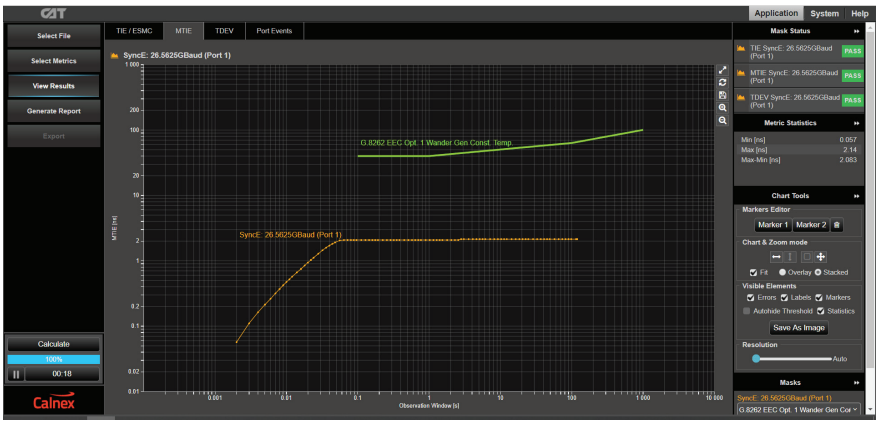

The Calnex Analysis Tool (CAT) provides powerful insight into network and device performance. All your measurement results are now in one place, and you can view multiple graphs simultaneously for easier correlation of your results. Plus, with enhanced graphics, it's easy to evaluate ITU-T metrics such as MTIE, TDEV, MAFE, MATIE against ITU-T masks.

Specifications	
SyncE	
Jitter/Wander Measurement	ITU-T G.8262 Jitter generation and Wander generation.
Wander Analysis	Built-in (CAT) software including industry standard ITU-T Pass/Fail Masks with clear Pass/Fail indication. ITU-T Masks: G.813, G.823, G.824, G.8261, G.8262, G.8263, G.8261.1, GR.1244. Clock Wander Measurements: TIE, MTIE, TDEV, clock MAFE, clock FFO.
SyncE Master	Accuracy traceable to Reference source (refer to Reference Clocks).
Measurement Accuracy	5 ns.
Product	
Interfaces	Electrical SMAs: 53.125 and 26.5625 Gbaud PAM-4 Electrical Inputs. 400GbE CR8 electrical input via QSFP-DD HCB compliant interface. 400GbE FR8/LR8 optical input (external wavelength selection). 400GbE FR4/LR4 optical input (external wavelength selection).
Signal Structure	Measures a single 26Gbaud lane from 400GbE, 200GbE, 100GbE, 50GbE PAM-4 signal. Measures a single 53Gbaud lane from 400GbE, 200GbE, 100GbE PAM-4 signal.
Ext. Reference Clock Input	Lock internal timing reference to external reference. Reference Lock soft LED indication. External reference inputs: Balanced RJ45: T1 BITS clock (1.544 Mb/s), E1 MTS (2.048 Mb/s).
Ext. Reference Clock Outputs	Unbalanced BNC: 2 x 10 MHz/2.048 MHz Reference Outputs.
Control	
PC/Mac or Tablet Control	Web-based GUI approach with built-in controller enables use of any PC or Android Tablet with any browser with screen resolution of 1024 x 768 pixels.
Interface	RJ 45 LAN connection to instrument.
TCP/IP Settings	TCP Port, IP Address and Gateway settable.
Remote Control	RESTful API for easy automation. Scripting via TCL, Perl and Python. Automatic Script Recorder for TCL, Perl and Python.

Contact Us

For more information, call your Spirent sales representative or visit us on the web at www.spirent.com/ContactSpirent.

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