



Description

Algo-Logic Systems, a leading FPGA ultra-low-latency trading solutions provider, and Rival Systems, an award winning provider of trading and risk management software, have teamed up to develop an integrated offering using Algo-Logic's FPGA hardware and Rival's trading and algorithmic strategy development software.

The complete CME (CBOT, COMEX, NYMEX) Group tick-to-trade "out-of-the-box" solution for futures and options enables traders and firms of all sizes to capture the sub-microsecond latency and deterministic performance.

CME MDP3.0 tick data is directly consumed in FPGA while also being processed by Rival software. Sub-microsecond latencies are achieved by detecting trigger conditions and in turn sending FIX Quote Cancel messages to CME all in the FPGA. This allows traders to confidently quote options during fast moving markets by eliminating the risk of trading at adverse price levels.

A Graphical User Interface (GUI) and RESTful APIs are provided for control and monitoring of the accelerator. Rival has fully integrated with the Algo-Logic APIs to allow users to easily control the FPGA trigger conditions from the Rival software.

In addition to Algo-Logic Systems' ultra-low latency FPGA based order injection system, subscribed traders will also have full access to Rival Systems' Electronic Eye, Auto-Quoter, and Rival API. From options market makers to futures traders, all subscribers will benefit from this high performance integrated trading platform.

Instant Market Reaction

Mass Quote Cancellation:

- Allows all 3 CME levels of Quote cancellation
 - Cancel all Quotes across all Products
 - Cancel Quotes by Instrument Group
 - Cancel Quotes per each Instrument
- Easy to integrate API for:
 - Quote Cancel pre-loading
 - Quote Cancel trigger configuration

Control Software includes:

- Device parameter configuration (i.e., IP and MAC addresses), status monitoring
- Logging and event notifications reporting

Sub-microsecond Latency

Algo-Logic augments the Rival trading system with FPGA modules that enable sub-microsecond trading.

ULL 10GE PHY+MAC:

- Lowest round trip latency of 89.6ns
- Cut through packet processing

CME Feed Handler:

- MDP3.0 messaging processing and parsing
- Filtering on subscribed multicast channels

CME Futures & Options Order Book:

- Book building for instruments that have real and implied orders
- Reporting L2 snapshots with best bid offer (BBO) information

10G TCP Endpoint:

- Lowest packet processing latency of 76.8ns
- 100% FPGA accelerated full TCP termination

Algo-Logic and Rival Systems Integrated CME Tick-To-Trade Platform Specifications

Latency	Sub-microsecond latency for FPGA accelerated trades
Accelerated Multicast Channels	Up to 16
Accelerated Order Book Configuration	20 security IDs with L2 snapshots containing BBO
Accelerated FIX Sessions	32
Accelerated FIX Order Queues	64
Network Interface Speed	10 Gbps Ethernet
Algo-Logic's Pre-Built IP Cores	ULL 10GE PHY+MAC, CME Futures & Options Order Book, CME Feed Handler, 10G TCP Endpoint
Rival Software Trading Modules	Electronic Eye, Auto-Quoter, and Rival API
Application Programming Interface (API)	RESTful, low latency messaging protocol
Available Markets	CME (CBOT, COMEX, NYMEX) Group
FPGA Platform	Terasic DE5-Net FPGA card pre-integrated into server

Algo-Logic and Rival Systems Integrated CME Tick-To-Trade Platform Diagram

