

## DATA SHEET

### BENEFITS

- ▶ Maestro user-interface for configuration and management of Jammer functions
- ▶ Discover and utilize any Jammer on the network via Port Selection Dialog
- ▶ Supports FCoE error injection
- ▶ Modify bits, bytes and words or delete a frame
- ▶ Insert a complete frame or repeat the trigger frame
- ▶ Pass, overwrite or recalculate the CRC
- ▶ Pass, overwrite or recalculate the CRC for the embedded Fibre Channel frame in the FCoE frame
- ▶ Operate in any topology with any upper-level protocol
- ▶ Supports data rates of 1 and 10 Gigabit Ethernet
- ▶ Supports error injections in FCoE and FIP frames

Finisar's Xgig® Jammer was designed to ensure that Fibre Channel, SAS/ SATA and Gigabit Ethernet networks recover from all error conditions without data loss or corruption.

With Xgig Jammer, network managers can manipulate live traffic on a link or network to simulate errors in real time, and verify that the recovery process operates as expected via Xgig Analyzer cascaded with it. The Xgig Jammer normally acts as a digital pass-through device passing network traffic (see figure 1). However, when it encounters a user-defined event (trigger condition) within network traffic, it replaces the trigger contents with new information provided by the user.

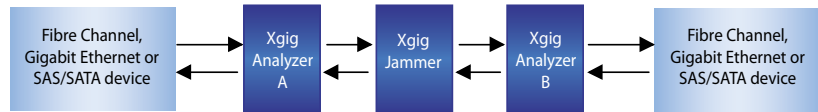


Figure 1

For example, a bit error can be generated in D\_ID of an FCIP frame if path B is armed by any frame and path A is triggered by the FCIP frame. (see figure 2).

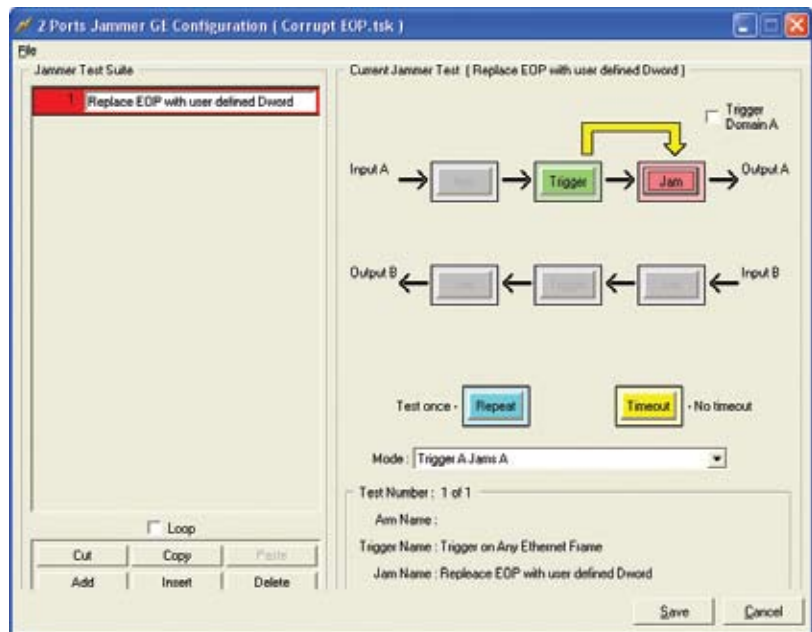


Figure 2

# Xgig® 10 GIGABIT ETHERNET/FCOE JAMMER

## JAMMING OPTIONS

Jamming events can be Ordered Sets, or frames. The following list details the events on which the Jammer can operate:

### Ordered Set and Primitive Modification

- ▶ Replace an Ordered Set and primitive with another Ordered Set and primitive, or corrupt it with errors

### Frame Modification

- ▶ Any word in a frame may be replaced by a user-defined value or changed randomly
- ▶ Frames may be truncated, or replaced with Idles or other Ordered Sets
- ▶ CRC checksum may be corrected, creating a valid frame or packet
- ▶ SOP, EOP, SOF, CRC, EOF and SFD and Ethernet carrier extend may be modified or replaced
- ▶ Insert one or multiple bit errors in the designated fields

### Frame Insertion

- ▶ Insert a pre-defined frame after the trigger frame
- ▶ Repeat the trigger frame

## TRIGGERING CONFIGURATION

Configuration of trigger conditions allows the following logic options:

- ▶ **ARM:** defines the frame or Ordered Set prior to the ones to be modified
- ▶ **TRIGGER:** defines the frame or Ordered Set to be modified
- ▶ **JAM:** defines modifications to be made to the Trigger target
- ▶ **ROLLBACK:** defines the time or word count parameter allowed to look for the Trigger after finding the Arm, before returning to look for the Arm again

## GENERAL FEATURES

- ▶ Execute multiple jam tests from a test stack
- ▶ Triggers shared with other Xgig devices (analyzer) in the same Xgig domain

## AUTOMATION TEST

For automated testing, Frunner allows users to control Xgig Jammer through scripts. Frunner supports any combination of customized triggers and controls, and can be called from C and Tcl environments. Contact sales for further information on FRrunner.

**Finisar®** 1389 Moffett Park Drive  
Sunnyvale, CA 94089  
Phone (US Toll Free): 888.746.6484  
Phone Intl: 408.400.1000  
Email: networktools-sales@finisar.com  
www.finisar.com

## USE WITH XGIG ANALYZER

The Xgig Jammer may be used in conjunction with one or more Xgig Analyzers to capture modified traffic and the system response to that traffic. The Jammer can trigger the Analyzer or the Analyzer can arm the Jammer.

## MAESTRO

The Jammer hardware is controlled by Finisar's Maestro software suite (see figure 3).

Maestro is the controller for Xgig generation products. Except for Fibre Channel Jammer, other functions supported by Maestro include a protocol-aware Fibre Channel and Gigabit Ethernet BERT (Bit Error Rate Test), SAS/SATA Jammer and SAS/SATA Generator (future product).

Maestro allows management of multi-tests in the same screen. The pre-defined jamming configurations listed in the configuration manager ① can be drag-n-drop directly to the device column ②. The configurable device column summarizes the detailed status information of each port. The bottom ports manager ③ is used to control multi-port tests together and lists the short version of port status.

Xgig Maestro operates under Windows 2000, Windows XP, Window Vista Business and Premium, and Windows Server 2003.

