

Flash Technology

- ◆ Protocol Analysis and Test Solution
- ◆ Agenda
 - About Flash Technology
 - Absolute Analysis Products
 - Key Features
 - Q & A



我们的产品和服务

- ◆ Green Hills. Keil and Tasking C/C++/MISRA C 编译器和集成开发环境
- ◆ 支持各种 CPU, DSP, FPGA 的 JTAG/Trace 仿真器 (ARM, PowerPC, Intel x86,68K,DSP 等等)
- ◆ 实时全仿真器 (Full ICE)
- ◆ 软件单元测试工具 (DO-178B 等)
- ◆ 边界扫描在线测试
- ◆ 在线编程器
- ◆ 协议分析和测试
- ◆ Fiber Channel
- ◆ Ethernet
- ◆ AFDX/ARINC664
- ◆ Serial Rapid IO
- ◆ Serial FPDP
- ◆ CPRI
- ◆ OBSAI
- ◆ FICON
- ◆ PCIe
- SATA
- SAS
- Infiniband
- ARINC629
- ARINC818
- MIL-STD-1760
- USB2.0 USB3.0
- I2C/SMBus
- CAN/Flexray



Absolute Analysis 用同一个硬件支持

不同功能

- ▶ 协议分析
- ▶ 数据包生成
- ▶ 协议编辑/加密
- ▶ 故障注入
- ▶ 衰减测试
- ▶ 性能统计
- ▶ 误码率测试
- ▶ 二次开发API

不同的协议

- ▶ Fibre Channel / FC-AV
- ▶ FC-AE-ASM
- ▶ FC-AE-1553
- ▶ Ethernet (*iSCSI, IPv6, FCoE*)
- ▶ Serial FPDP
- ▶ SATA /SAS
- ▶ AFDX/ARINC664
- ▶ ARINC818 / ARINC629
- ▶ MIL-STD-1760
- ▶ FICON
- ▶ CPRI/OBSAI
- ▶ PCI Express
- ▶ Serial Rapid IO
- ▶ InfiniBand
- ▶ Mixed Protocols

不同速率

▶ 1Gbps



▶ 10Gbps

▶ 非标准速率

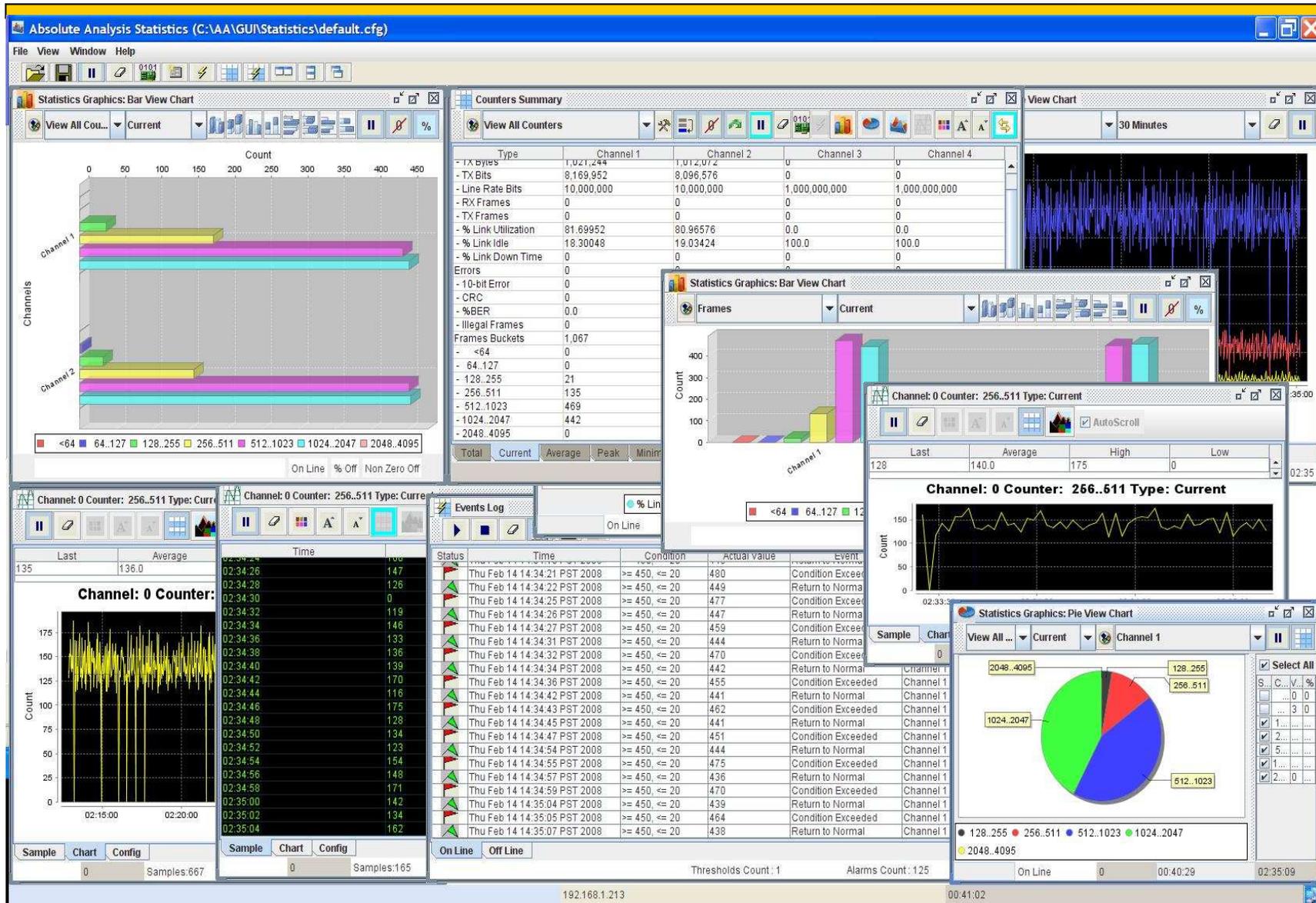


Flash Technology

全集成的软件平台



强大的分析和测试软件



多样化的主机平台



☞ 小型便携机

☞ 大型便携机

☞ 刀片

☞ 机架式

☞ 台式机

☞ 三屏便携式



Flash Technology

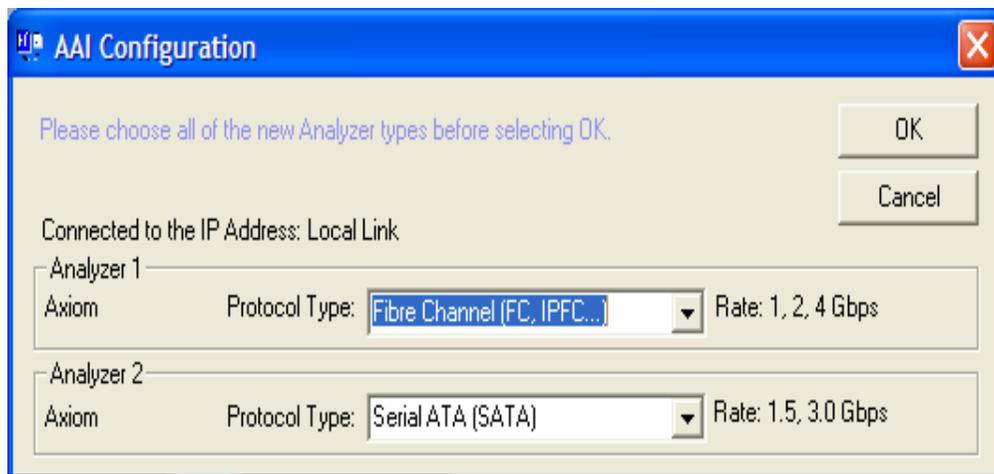
主机性能示例

- ◆ 6 PCI 插槽,扩展性好
- ◆ Intel 酷睿2至强CPU
- ◆ 主频2.33G, 四核
- ◆ 2GB DDR2内存
- ◆ 500G硬盘
- ◆ 硬盘可拆卸以便保护数据



四端口仿真测试板卡简介

- ◆ FPGA 可重配置以支持不同协议
- ◆ 每卡4GB Memory
- ◆ 支持硬件 Trigger In and Trigger Out
- ◆ 支持xGHz 以下所有的通信速率 (x=6 or 8 or 10)



- 协议可配置
- 功能可配置
- FPGA 重编程
- 即配即用

- Fibre Channel (FC, IPFC...)
- Fibre Channel (FC, IPFC...)
- Ethernet (IP/TCP, iSCSI...)
- Serial FPDP
- Serial ATA (SATA)
- Serial Attached SCSI (SAS)
- Bit Error Rate Test (BERT)
- Ethernet (10/100/1000 MBit)

Drag and Drop 多层 Trigger/Filter

The screenshot displays the AAI Control Window for Protocol Analyzer, titled "Network Connection: 192.168.1....". The interface includes a menu bar (File, Capture, View, Plugins, Help) and a toolbar with icons for Open, Save, Start, Stop/View, Abort, Statistics, Viewer, and Mapper. Below the toolbar, there are settings for Channel size (1024 MB), LoS Tolerance (High/Low), Buffer full behavior (Stop capture/Wrap buffer), and a Find item search box.

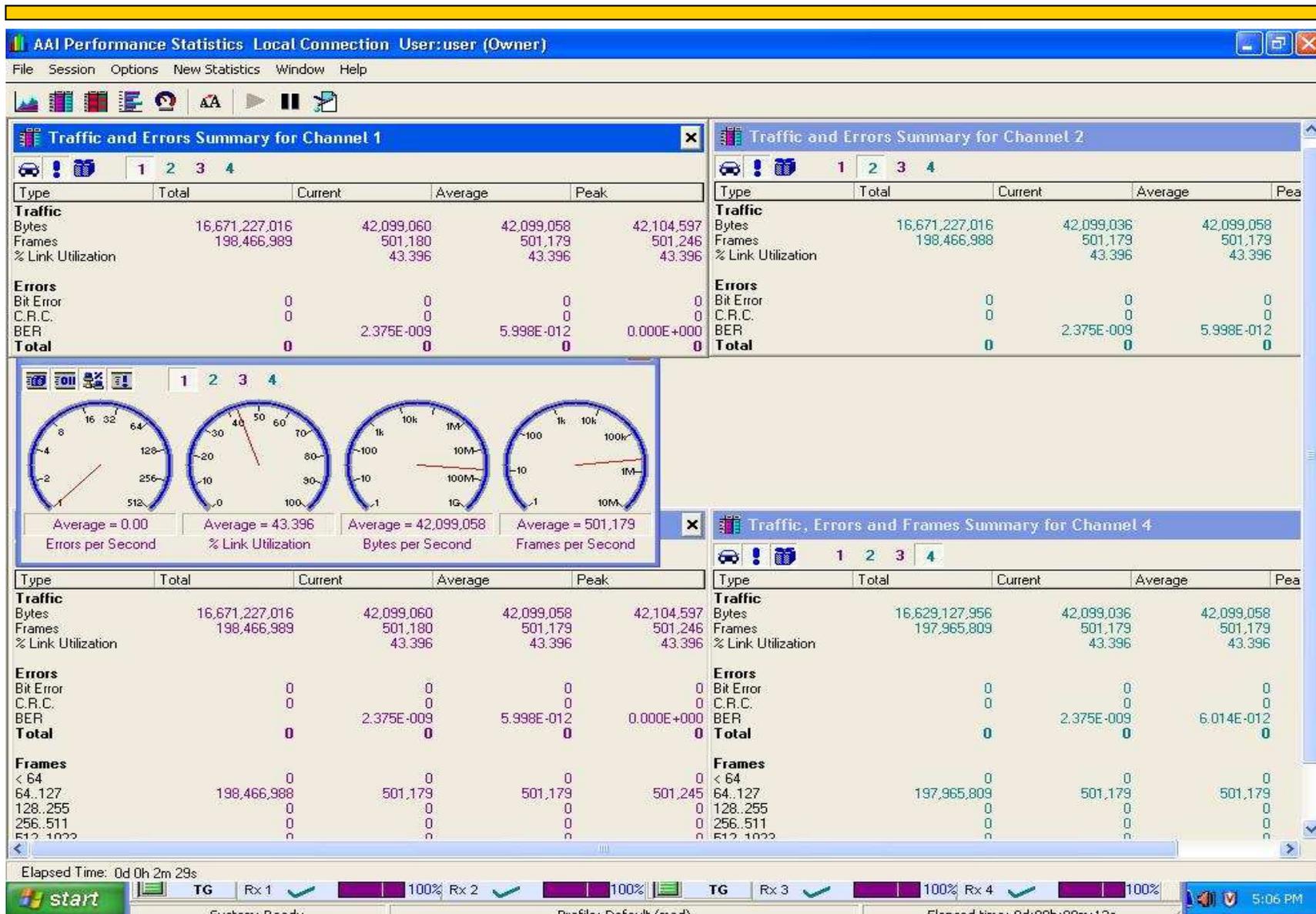
The main area is divided into "Triggers" and "Filters" tabs. The "Triggers" tab is active, showing a "Trigger list" with a flowchart of a multi-layer trigger configuration. The flowchart starts with "Start capture", followed by a sequence of layers: NOS, OLS, LR, LRR, and OR Group 1. The "OR Group 1" layer is expanded to show two conditions: "Any EOF" and "CRC error", connected by an "or" operator. The flowchart ends with "Stop and view". A "20 ms" delay is indicated between the OR Group 1 and the final "Any EOF" layer. A red box highlights the "Start capture" layer, and a red arrow points from it to the "OR Group 1" layer, illustrating the drag-and-drop action.

On the right side, the "Select item" pane shows a tree view of the protocol stack, including User, Fibre Channel, Address, FC, FC-4, FC_VI, FC-AE, FCIP, FCP_SCSI, FC-SB-2, LLC, TFTP, Ordered sets, and Delimiter ordered sets. The "Select action" pane below it lists actions such as Start capture, Pause capture, Stop and view, Run for, Sync out low, and Sync out high.

At the bottom, the status bar shows four channels (TG #1, TG #2, TG #3, TG #4) all set to 1 Gbps and FC. The system status is "Ready", the profile is "Default (mod)", and the elapsed time is "0d:00h:00m:16s".

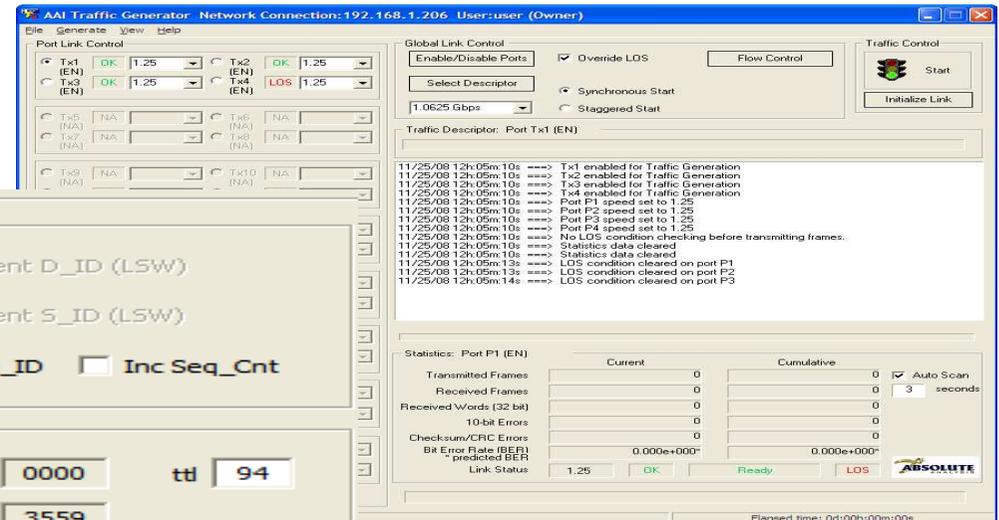
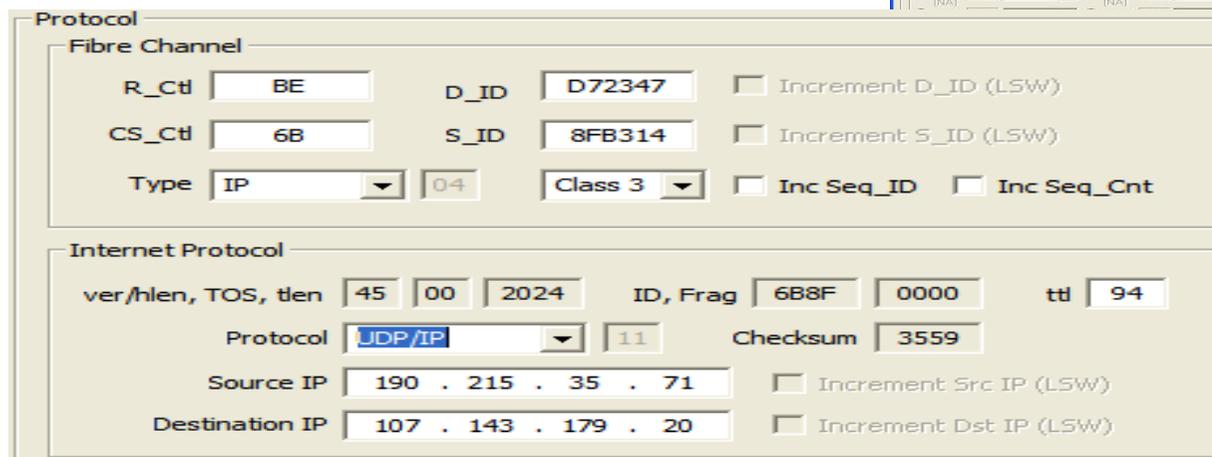
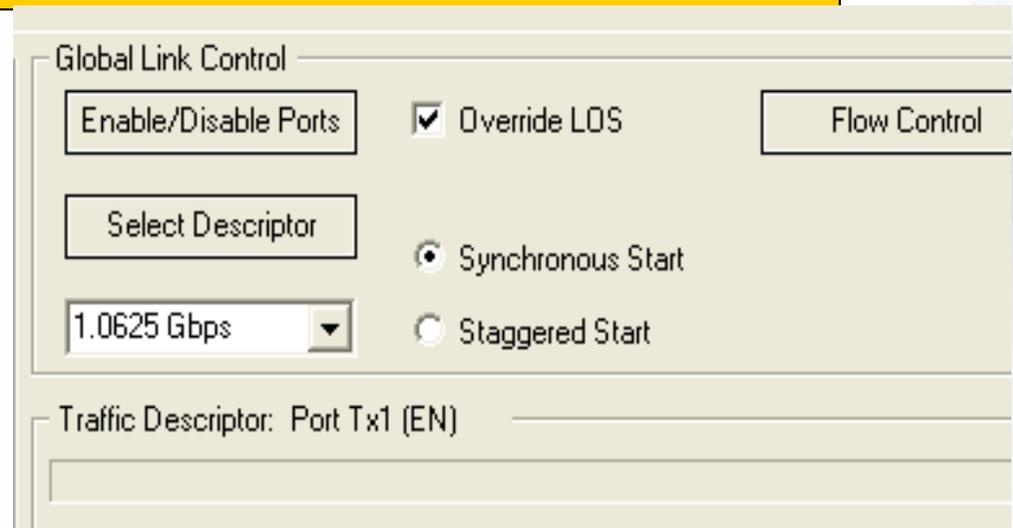


实时统计与分析



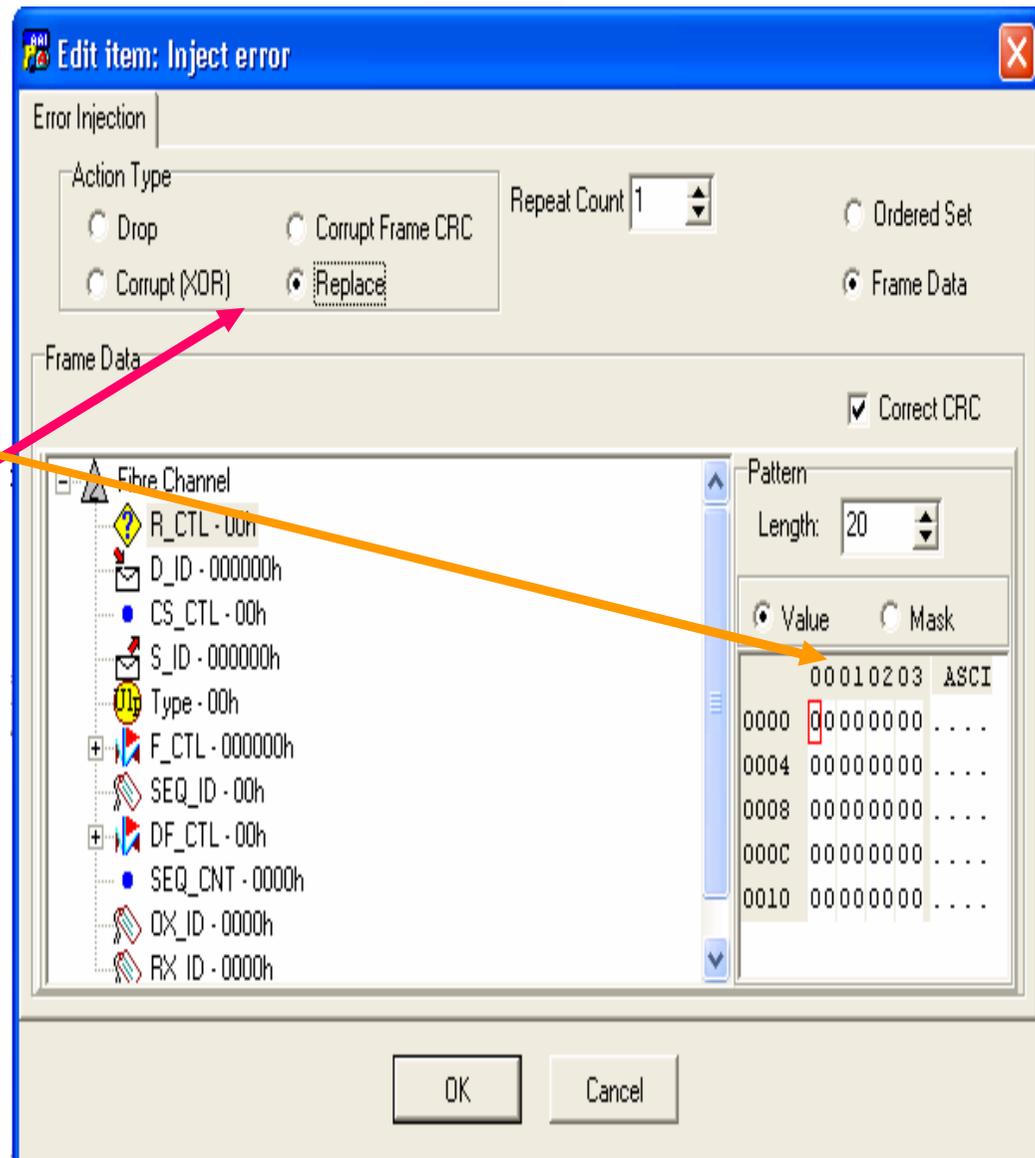
AAI Traffic Generator数据包发生器

- ◆ 支持FC/AFDX/Ethernet等
- ◆ 自定义数据帧
- ◆ 提供 Frame Builder
- ◆ 可生成合法或者非法数据帧
- ◆ 自定义帧数量或连续模式发送
- ◆ 100%线速工作，最高xG
- ◆ 通信速率可调
- ◆ 多端口同时发送



AAI Error Injector故障注入

- ◆ 支持FC/AFDX/ETH
- ◆ 100%线速监控通信
- ◆ 自定义注入开始条件
- ◆ 自定义注入故障类型
- ◆ 注入故障数目自定义
- ◆ 每一个Bit 都可以被替换
- ◆ 自动重算CRC
- ◆ 注入方式包括
 - 空闲帧
 - 异或破坏
 - 破坏校验和
 - 替换



AAI 误码率测试 B.E.R.T

- ◆ 支持FC/AFDX/ETH
- ◆ 100% 线速测试
- ◆ 速率可设置
- ◆ 多端口同时测试

Statistics: Port Tx3

	Current	Cumulative	
Transmitted Words (32 bit)	43,425,360	44,358,864	<input checked="" type="checkbox"/> Auto Scan
Error Bursts	57,503	59,271	3 (s)
Received Words (32 bit)	43,425,360	44,358,864	
10-bit Errors	172,509	177,813	
Bit Error Rate (BER) * = Predicted BER	2.784e-009*	2.128e-005	
Link Status	1.0625 Gbps	LOS	Transmitting
		LOS	

System: Transmitting Start time: 11/25/08 14h:41m:07s Elapsed time: 0d:00h:00m:03s



AAI Impairment Tester 衰减延迟测试

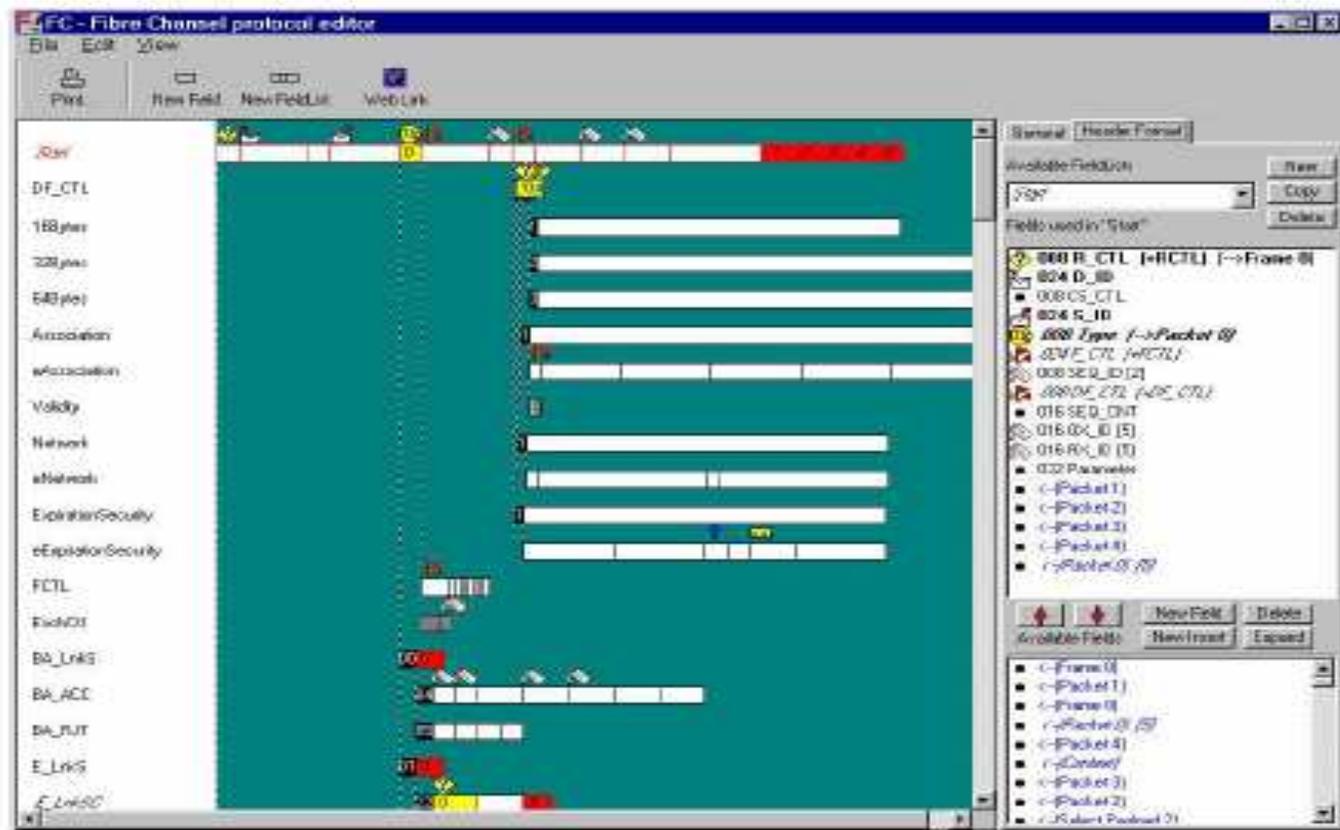
- ◆ 支持FC/AFDX /ETH
- ◆ 模拟超长的电缆和信号延迟对信号的影响
 - 自定义双向延迟 验证最适当的线缆长度
- ◆ 发现信号丢失的原因, 比如
 - 错误的数据包 线路的破坏或抖动
 - 转发器的缺陷 线缆的缺陷
- ◆ 测试错误修复能力
 - 降低速度, 在延迟的状态下检查
 - 同时识别多种错误 对错误全方位的解释
- ◆ 报告时延或
 - 时延的总数 时延的距离 信号时间

Port Control			Port Status	Delay Control
	Delay Value:	Delay Unit:	Actual Delay:	
<input checked="" type="radio"/> Rx1->Tx2	750.016	ms	750.016	Update
<input type="radio"/> Rx2->Tx1	13.216	us	13.216	
				Protocol: EN
				Speed: 1.25
				OK
				OK
				Apply Delay



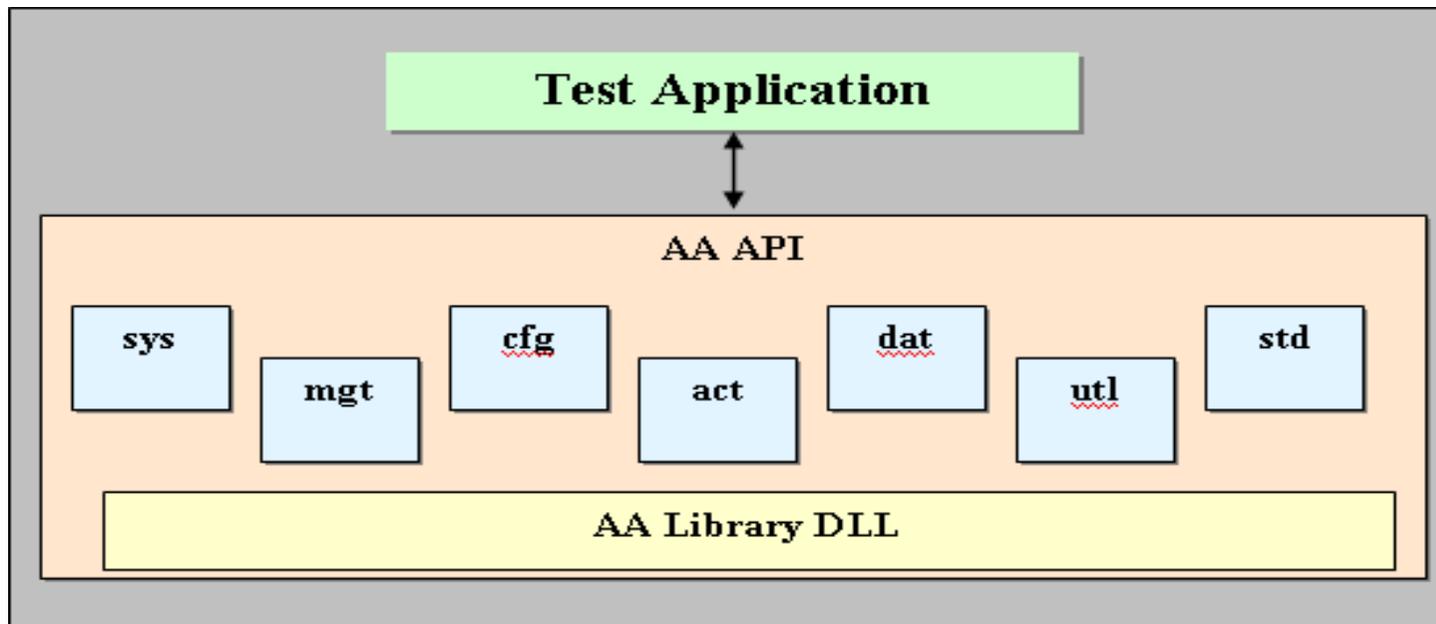
AAI Protocol Editor协议编辑器

- ◆ 允许用户自己定义协议
- ◆ 或者在现有协议上作修改或加密
- ◆ 或者自定义数据区每字段的含义
 - 风速
 - 大气压力
 - 高度
 - 距离等



AAI 二次开发API

- ◆ 通过API可完全访问系统资源
- ◆ 通过API可完全控制整个系统
- ◆ 通过API可调用每个功能模块
- ◆ 适用于 Borland 或者微软开发环境
- ◆ 并提供示例程序



和我们联系

- ◆ Flash Technology Trading (Shanghai) Limited
上海市长宁区天山路600弄1号同达创业大厦405
Tel: 8621-61457130 Fax: 8621-61457131
Email : sales@flashtech.com.cn (sales)
 support@flashtech.com.cn (support)
- ◆ Flash Technology (HK) Limited
香港九龙长沙湾长沙湾道928-930时代中心13楼02室
Tel : 852-23109662 Fax: 852-28157209
Email: sales@flashtech.com.cn (sales)
 support@flashtech.com.cn (support)

