NetBlazer version 2.2

Customer Presentation

Gary Macknofsky: Product Line Manager

July/2014

EXFO

Agenda

1. **Introduction**
2. New features in Release 2.2
3. EXFO TFv
4. Conclusion

FTB-1 PLATFORM

THE FIELD TECH'S CHOICE

FTB-1: Portability and Flexibility

ONBOARD UTILITIES


Bluetooth Data Mover


Update Manager


Wi-Fi Wizard


Internet Explorer


Remote control


EXFO Connect

ONBOARD TEST TOOLS


Expert IPTV

EXpert IP


EXpert VoIP


Wireshark


Net Stumbler


Jperf

UNMATCHED CONNECTIVITY

2x

NetBlazer

IT'S YOUR CHOICE

FTB-810

Dedicated
Transport Tester
DSn/PDH
ISDN PRI
OC 48/STM 16

FTB-810G

Dedicated
Transport Tester
DSn/PDH
ISDN PRI
OC 192/STM 64

FTB-870

Multiservice Tester
Sonet/SDH/OTN
10M to 10G
Fibre Channel:
1, 2, 4, 8, 10x
SyncE/1588
CPRI/OBSAI

FTB-880

Multiservice Tester
SONET/SDH/OTN
DSn/PDH/ISDN
10M to 10G
Fibre Channel:
1, 2, 4, 8, 10x
SyncE/1588
CPRI/OBSAI

FTB-860GL

10M to 10G
Loopback only

FTB-860

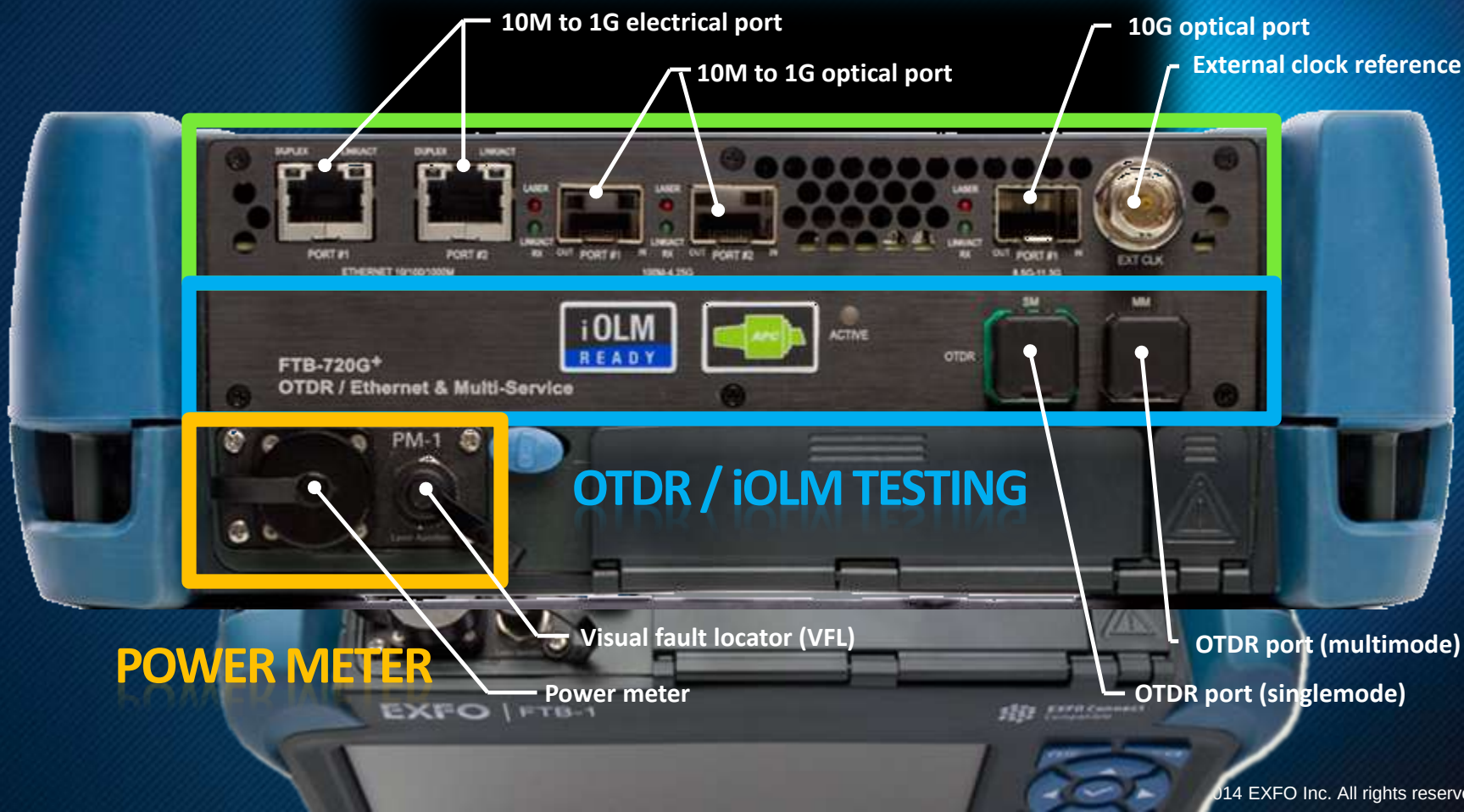
Multiservice Tester
Fibre Channel:
1, 2, 4x
SyncE/1588
CPRI/OBSAI

FTB-860G

10M to 10G
Fibre Channel:
1, 2, 4, 8, 10x
SyncE/1588
CPRI/OBSAI

One Solution – FTB-700G Series

COMBINING OPTICAL AND MULTISERVICE PROTOCOL TESTING



FTB-700G SERIES

WHY WAS THIS PRODUCT CREATED?

FIP-430B
Fiber Inspection Probe

ConnectorMax2

- Automated pass/fail connector analyzer
- One-touch results in <4 seconds
- Full reports
- Compatible with EXFO's FIP-400B inspection probe

iOLM intelligent Optical Link Mapper

- No training required: self-setting device
- No trace misinterpretation thanks to a clear schematic link view
- Link-Aware™ delivers simple, accurate fiber-optic link test results
- Prompt diagnosis for quick, accurate identification of network issues

EtherSAM

- SLA validation in a single test
- Simultaneous bidirectional testing
- Standards-based (ITU-T Y.1564)

EXFO Connect
Make your data mean business.

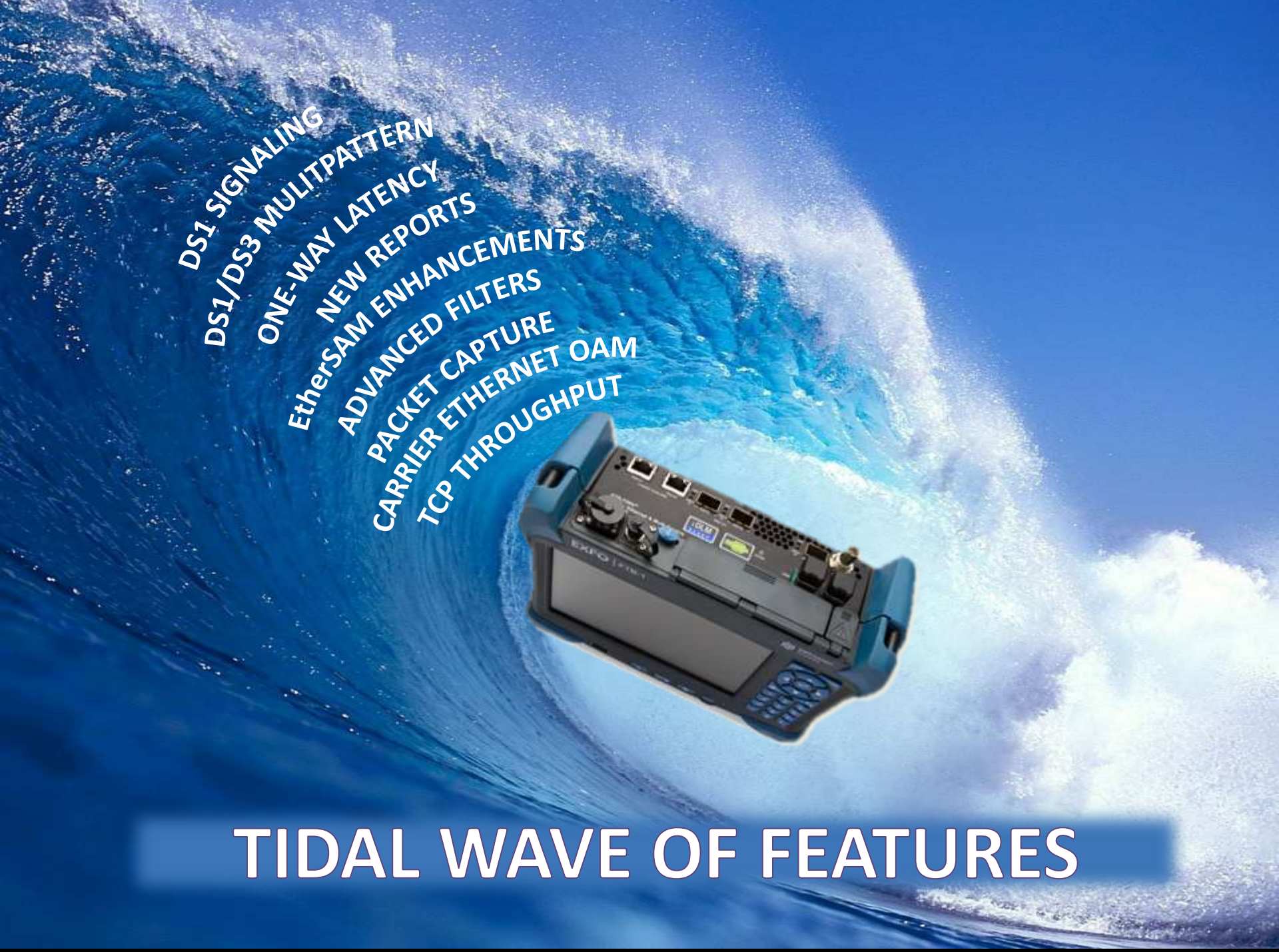
- Automation and business intelligence
- Cloud-based equipment and test data management

FTB Anywhere™
Floating Test Licenses

- BUDGET FLEXIBILITY
- Available anywhere, anytime and to anyone
- Eliminates the barrier to field-testing efficiency
- Feature-rich solution

Agenda

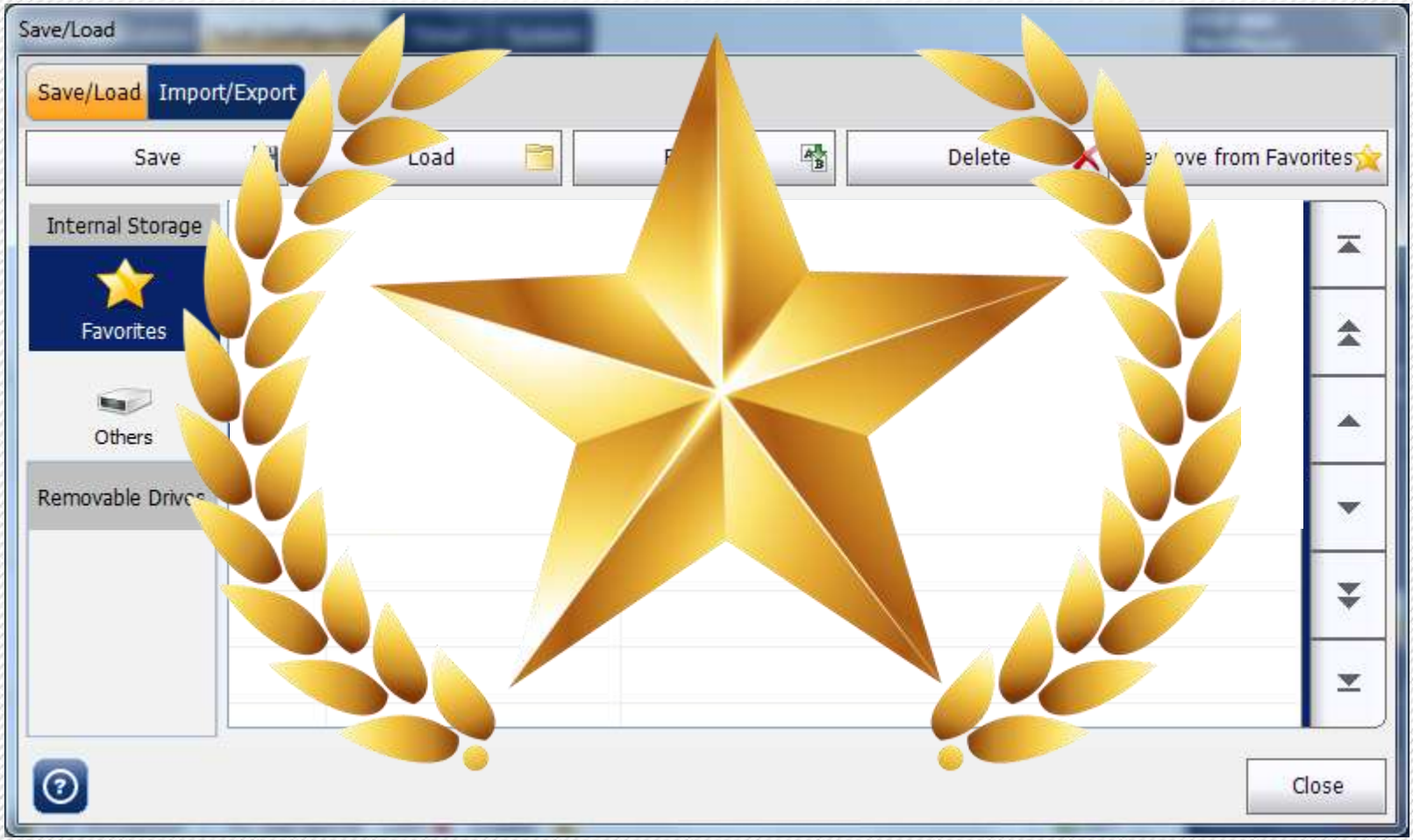
1. Introduction
2. **New features in Release 2.2**
3. EXFO TFv
4. Conclusion


DS1 SIGNALING
DS1/DS3 MULITPATTERN
ONE-WAY LATENCY
NEW REPORTS
EtherSAM ENHANCEMENTS
ADVANCED FILTERS
PACKET CAPTURE
CARRIER ETHERNET OAM
TCP THROUGHPUT
TIDAL WAVE OF FEATURES

Various FREE Upgrades

Other Enhancements

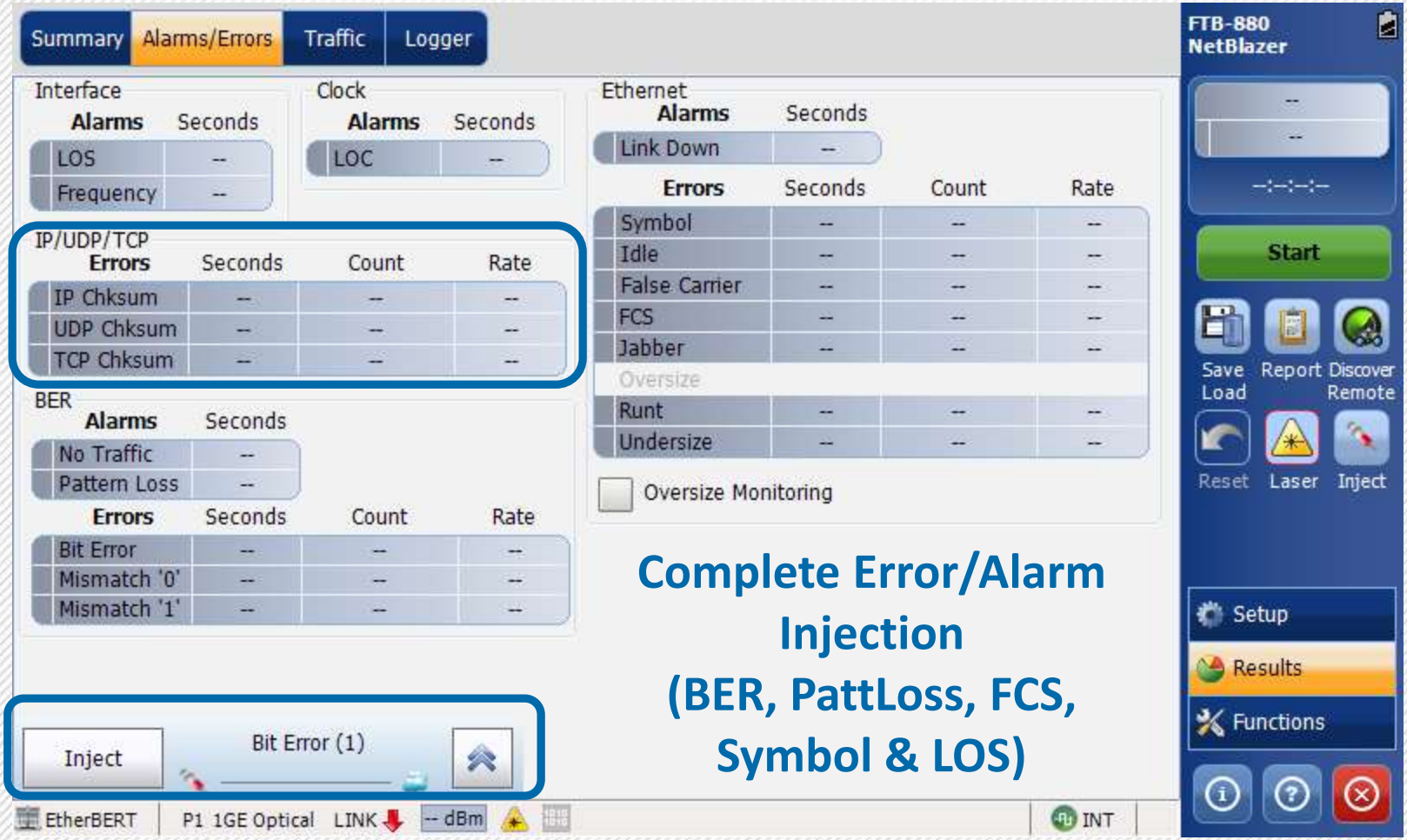
Favorites



Other Enhancements

More Ethernet Statistics

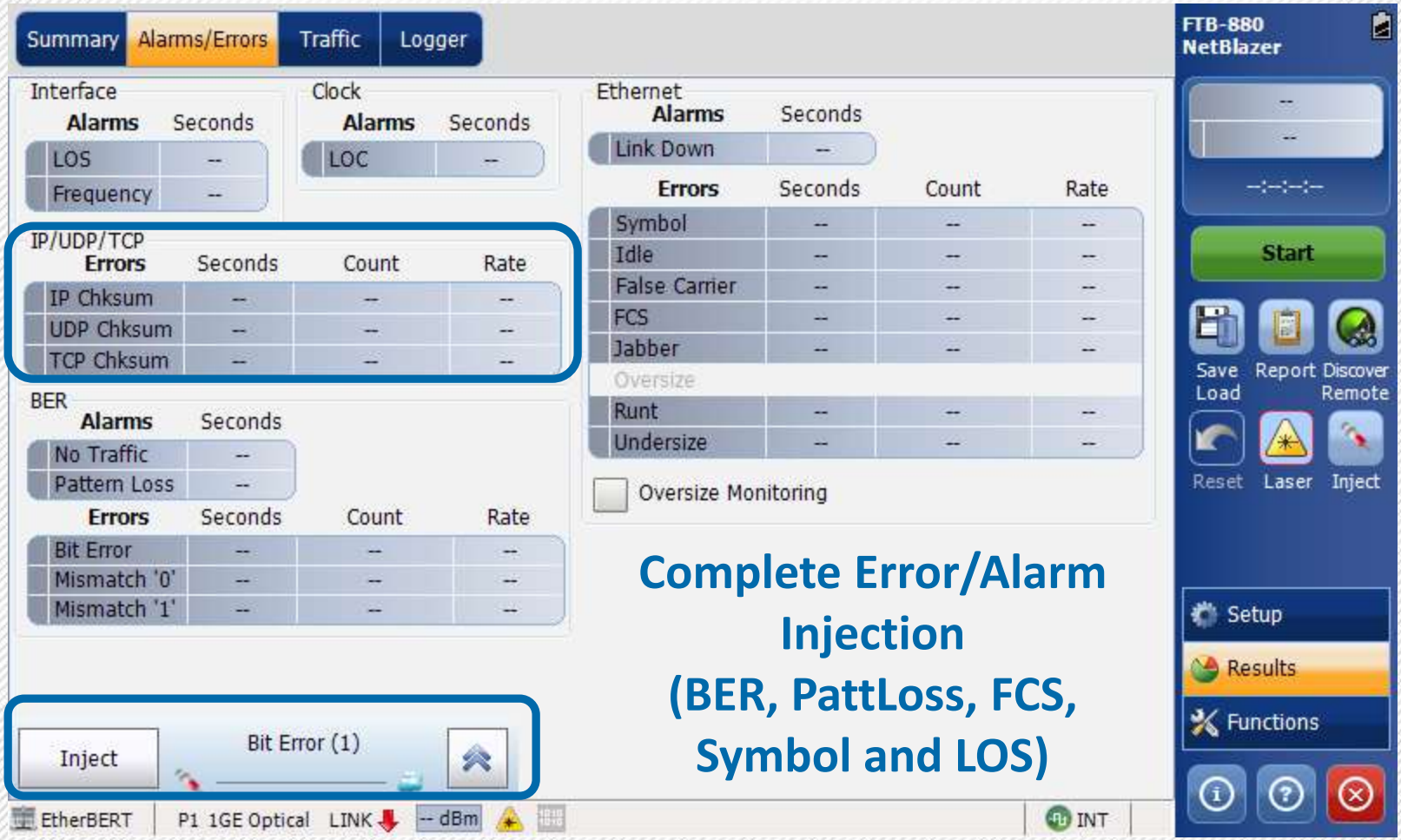
In load 2.0



Complete Error/Alarm Injection (BER, PattLoss, FCS, Symbol & LOS)

Other Enhancements

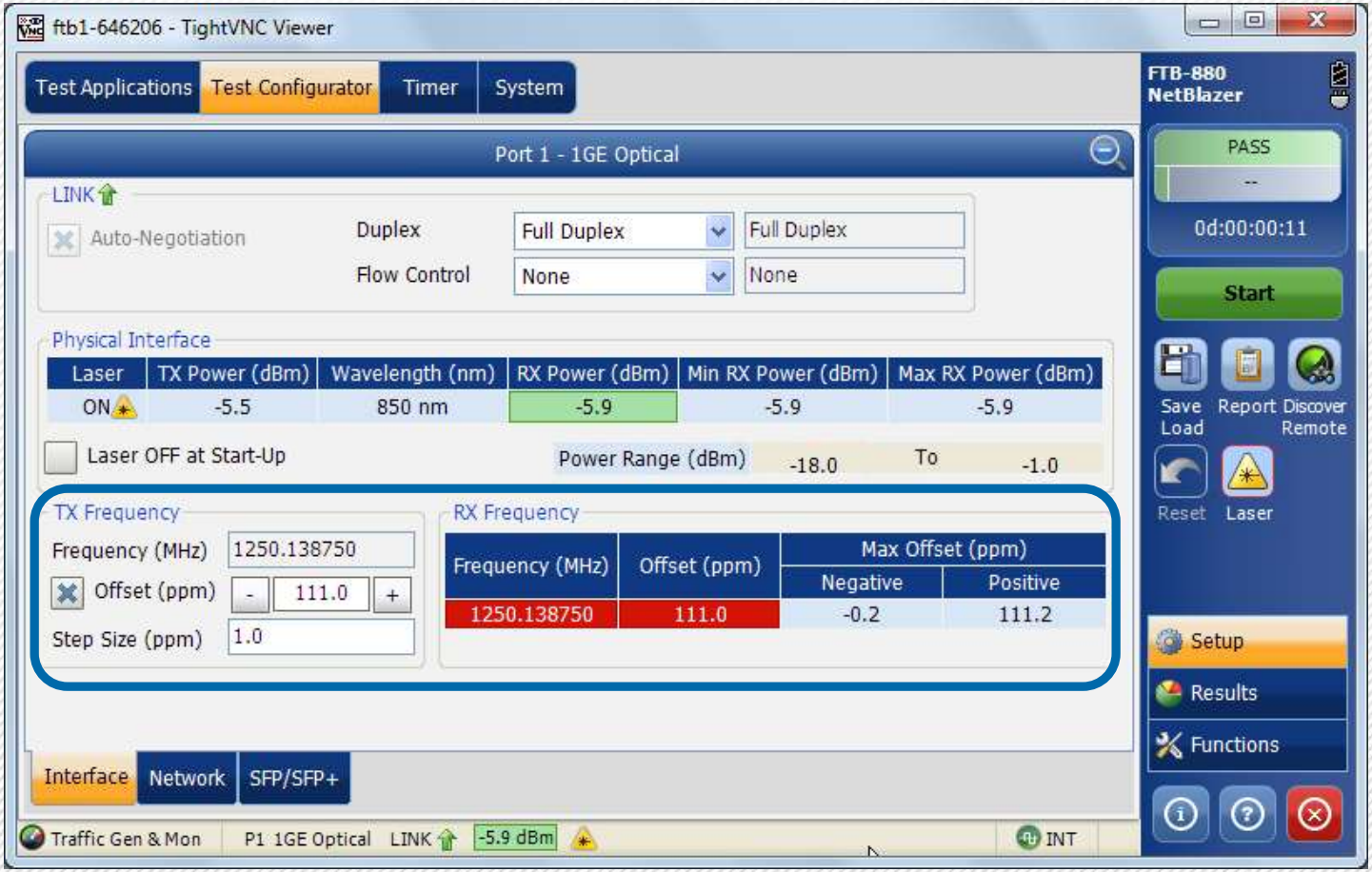
More Ethernet Statistics



Complete Error/Alarm Injection (BER, PattLoss, FCS, Symbol and LOS)

Frequency Offset

Ability to modify the frequency offset up to +/- 120 ppm



Report Generation

Test Reports

The Past Does Not Equal the Future!

Test Results

Start Time	11:26	
Duration	0d 00:00:34	
Test Status	Completed	
Pass/Fail Verdict	Fail	
RX Rate(Mbit/s)	100.000	
BER		
BER Pass/Fail Verdict	Fail	
Bit Error	Count	Rate
Total	1	6.5E-09
Mismatch'0'	1	6.5E-09
Mismatch'1'	0	0.0E00
Service Disruption		
SDT Pass/Fail Verdict	Pass	

EtherBERT_2014_01_17_11_27_30.pdf

Bert Test 100Mbps

Longest SDT (ms)	0
Shortest SDT (ms)	0
Last SDT (ms)	0
Average SDT (ms)	0
Total SDT (s)	0
Service Disruption Count	0
IP Address:	10.10.10.2
UDP Port:	7
Destination:	
MAC Address	00:03:01:FD:A4:F4
IP Address	10.10.10.2
UDP Port:	49184
Remote ID	Disabled

Results Summary

Test Status	
Test Status	Completed
Pass/Fail Verdict	FAI
Start Time	1/17/2014 11:25:19 AM
Duration	00d:00:00:20
Power Recovery	

Can you quickly find the error?

BER Pass/Fail Verdict

Alarms/Errors

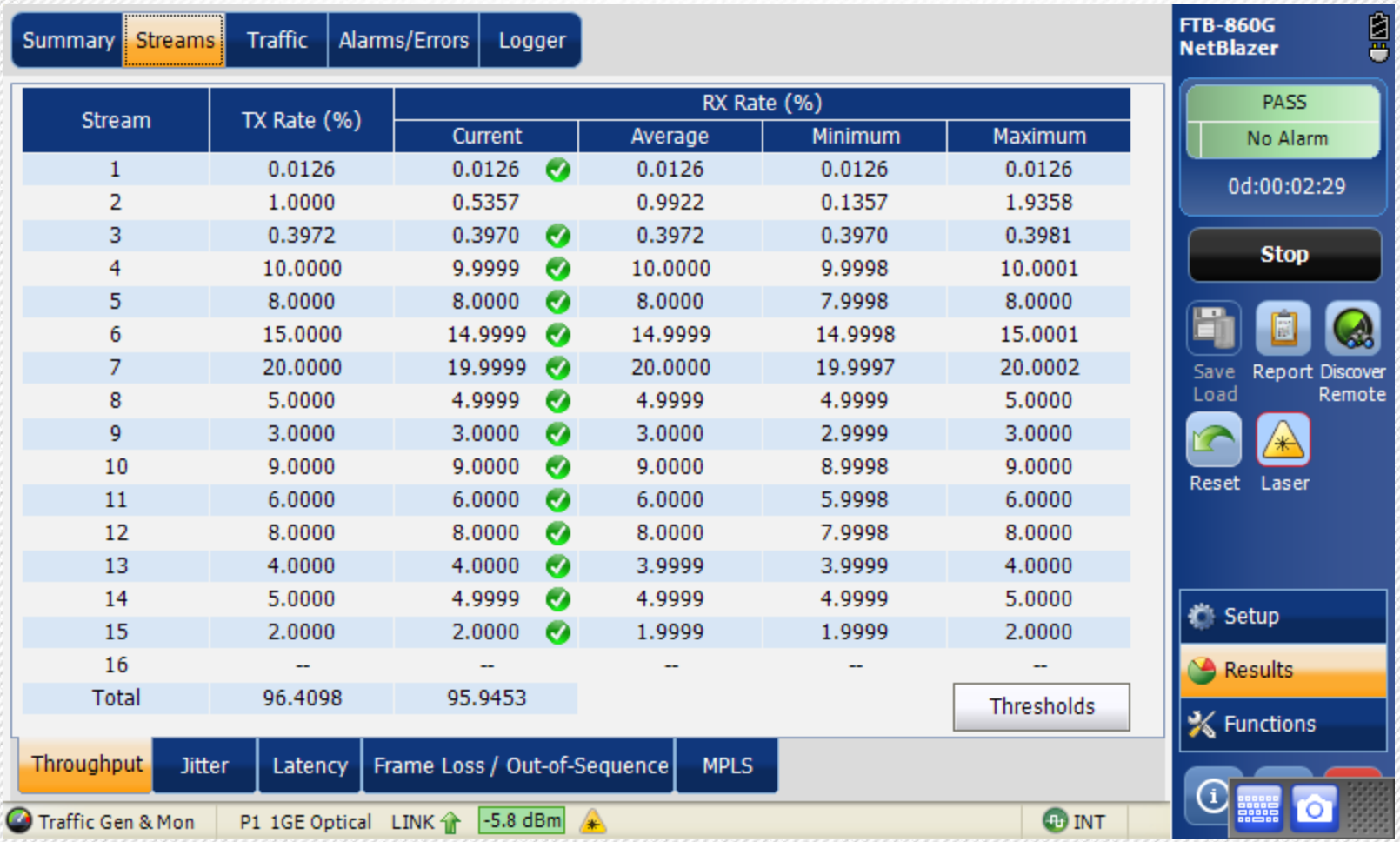
Alarms/Errors List	
Active/Historical Alarms/Errors	Bit Error, Mismatch '1'

Before

After

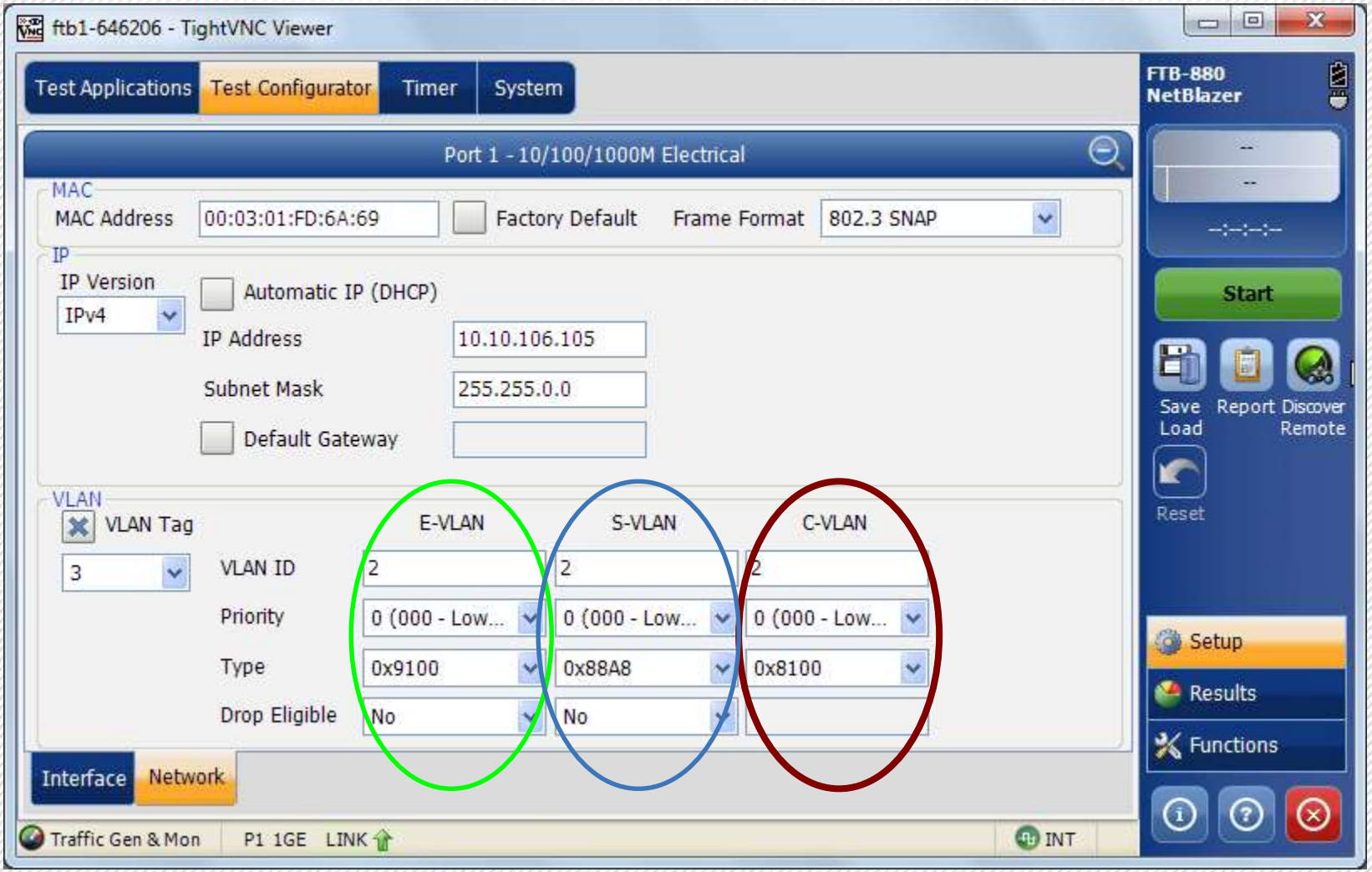
New Traffic Generation

Now with 16 Streams and Per-Stream Statistics!

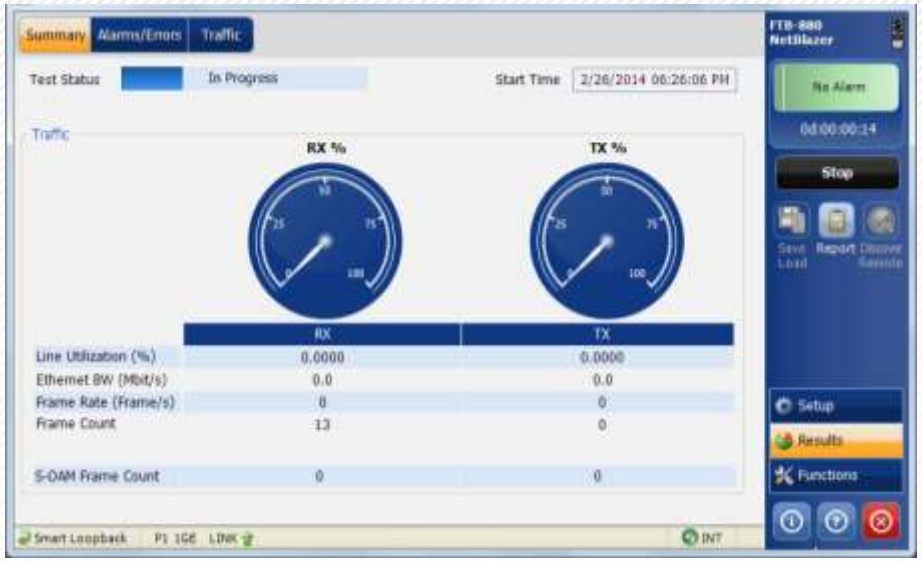


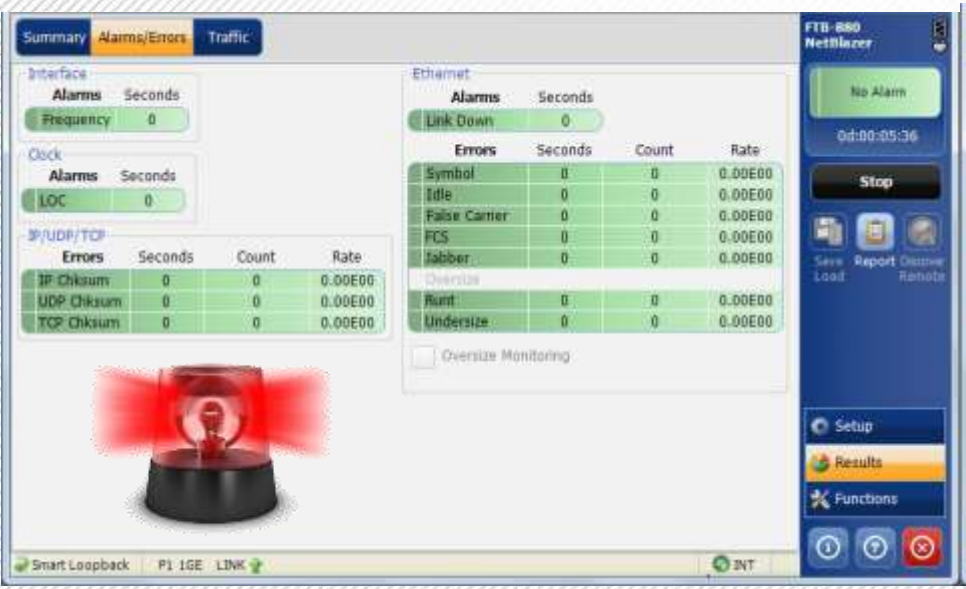
VLANs

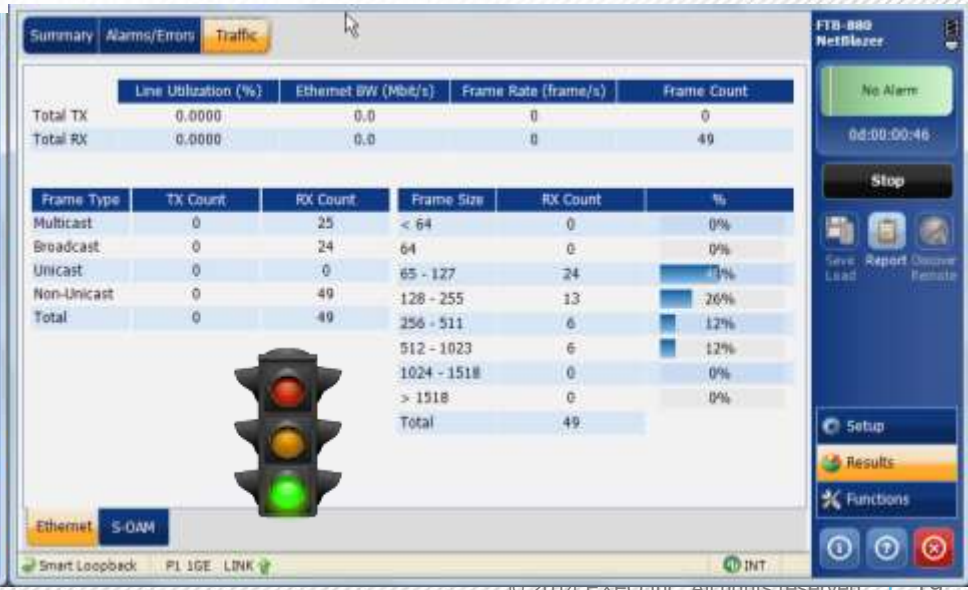
NOT 1, NOT 2 but NOW 3 VLANs



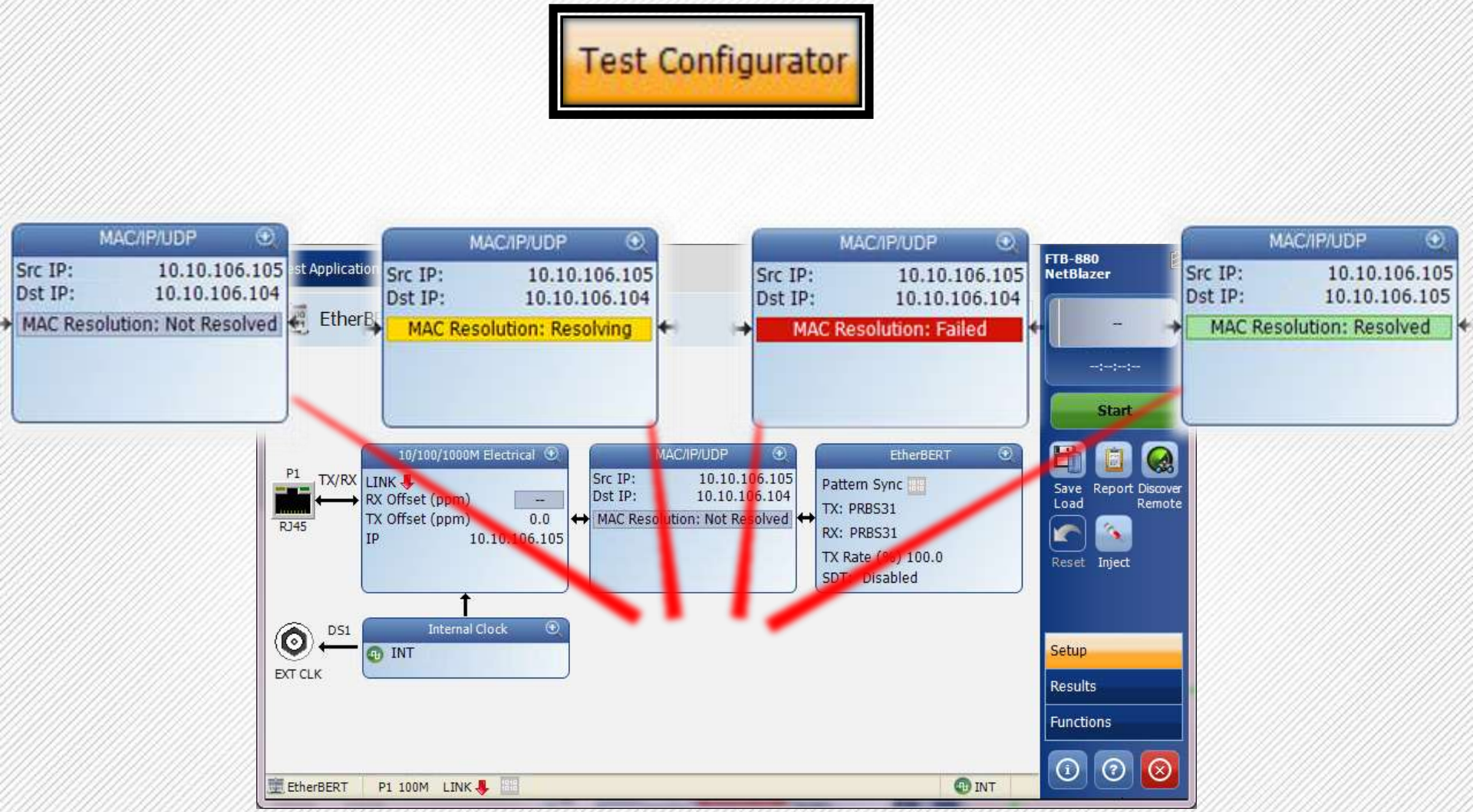
SMART LOOPBACK TWEAKS





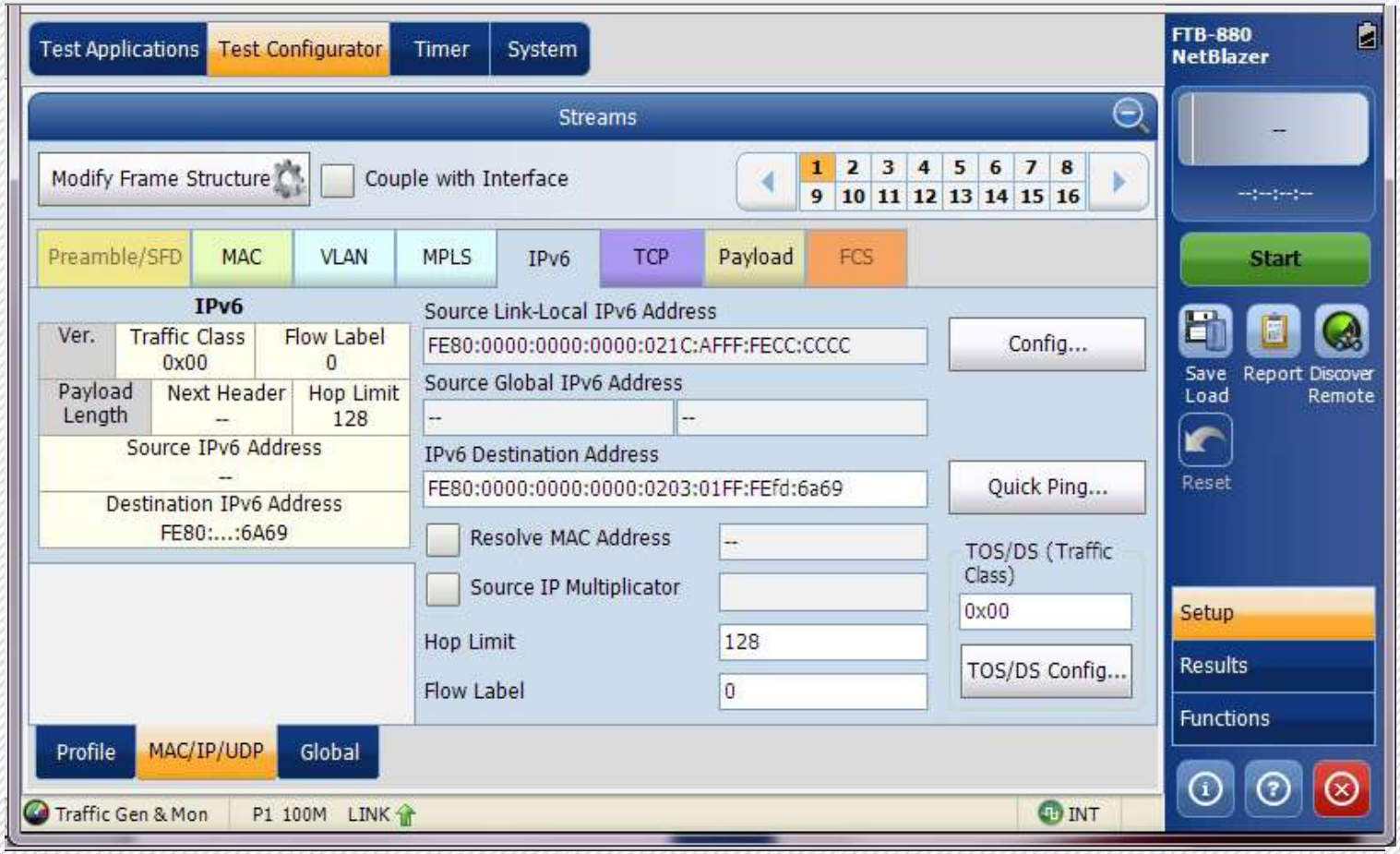


Test Configurator

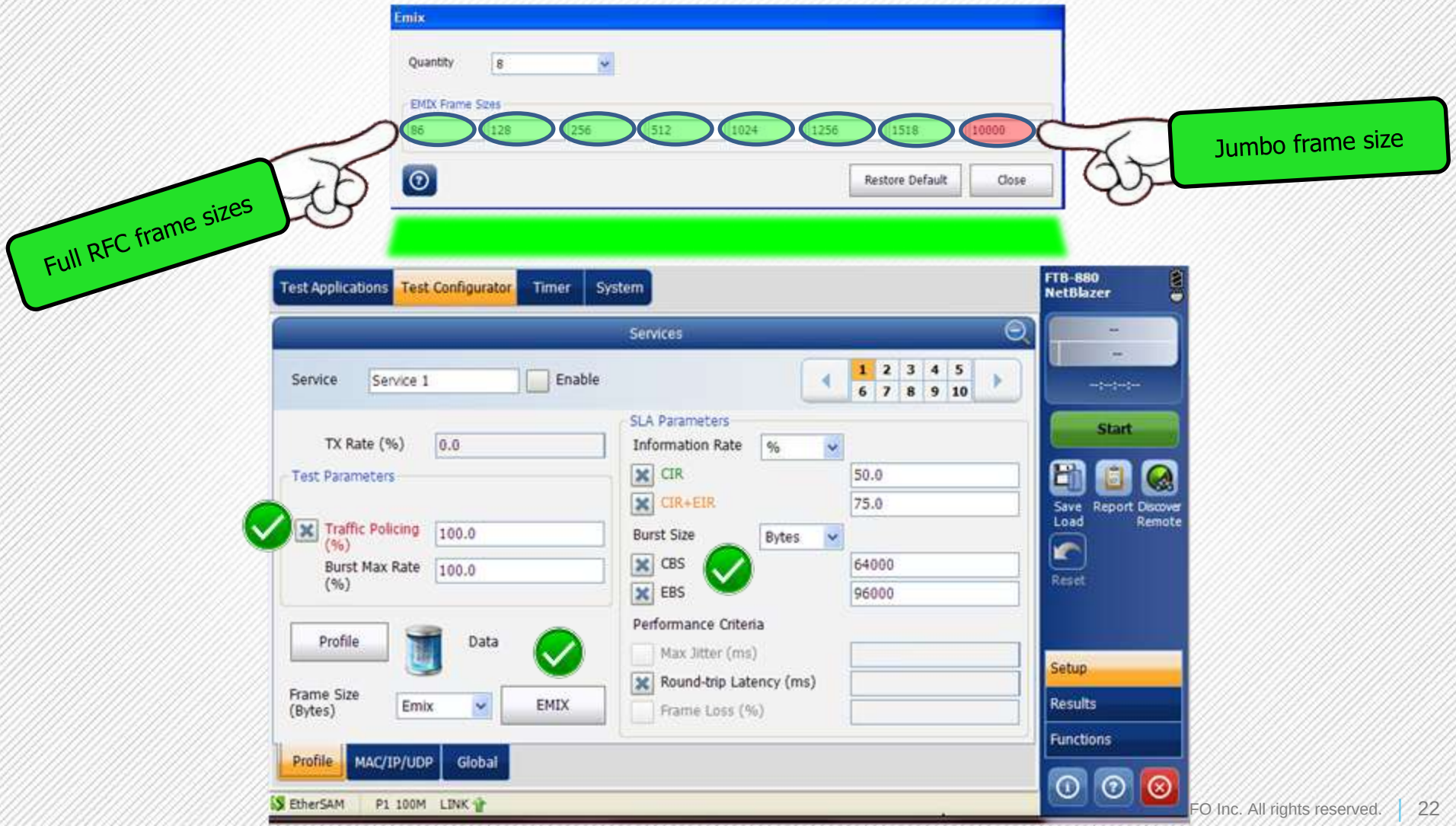


Visual Frame Display

Choose your protocol, from basic to advanced

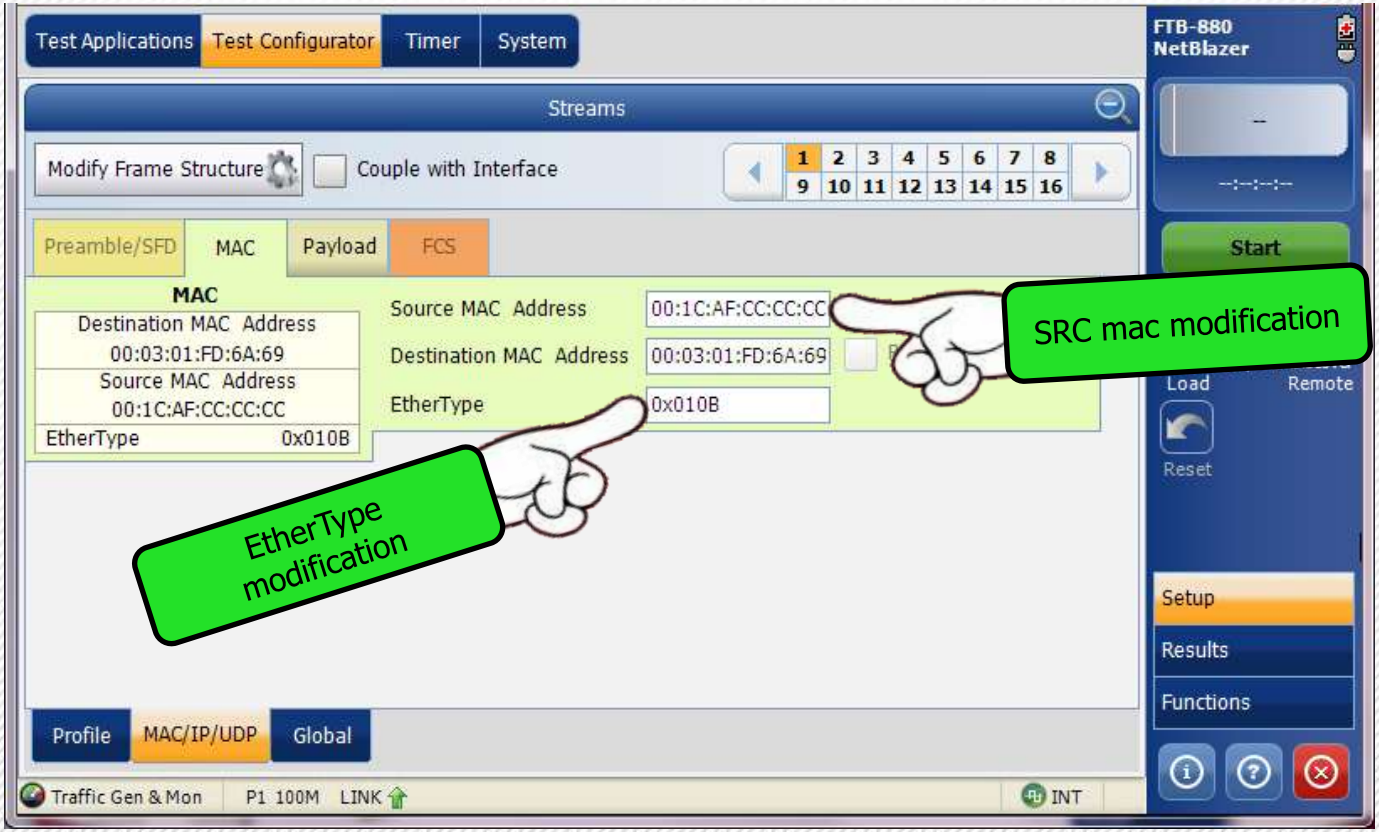


EtherSAM Enhancments



Visual Frame Display (VFD)

The VFD enables us to go deeper into the framing and to adjust to our heart's content

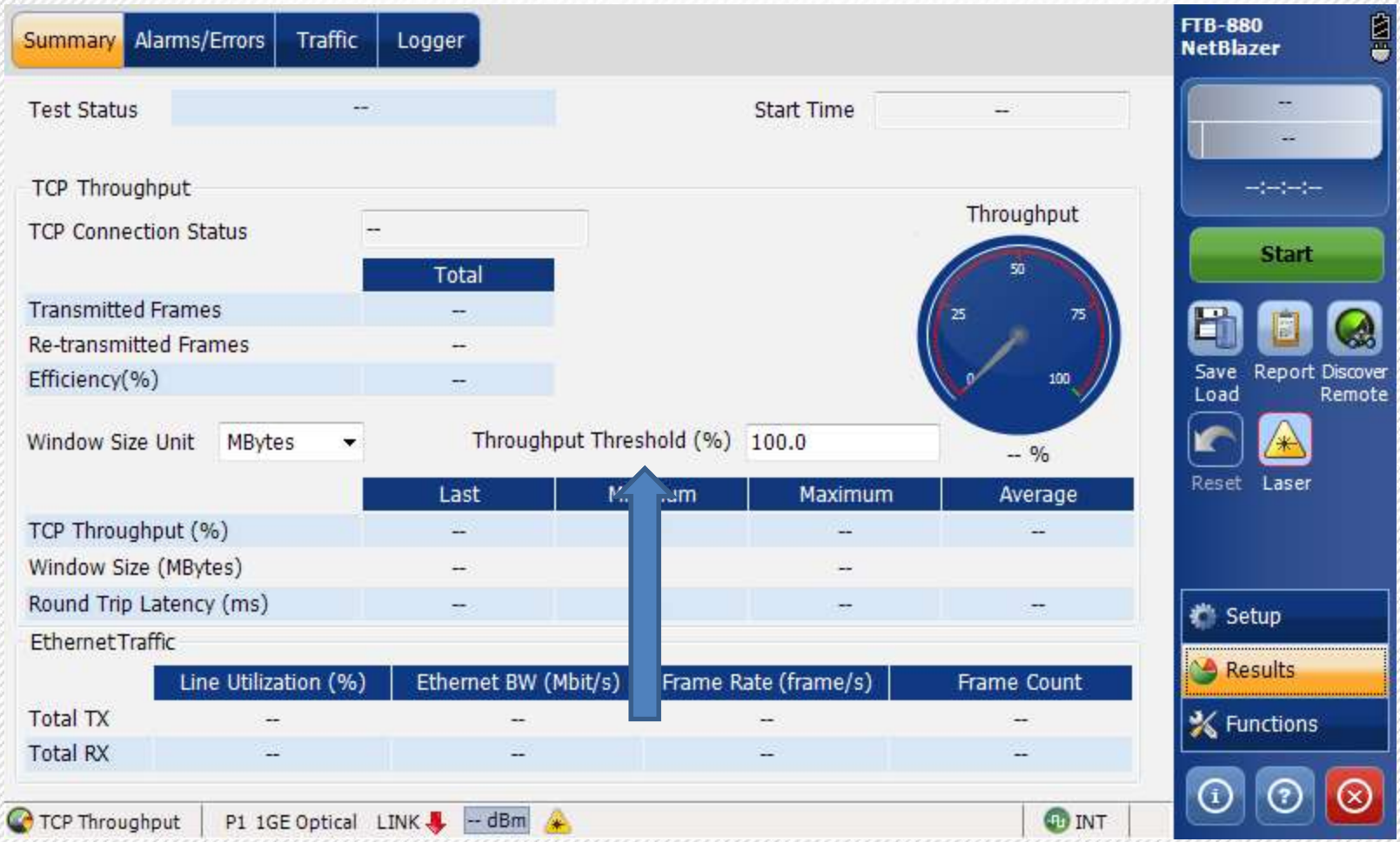


TCP Throughput

ExacTCP

NetBlazer Series Now Equipped with TCP Throughput Test App Application!

Simple. One-Page Test Setup. Results!

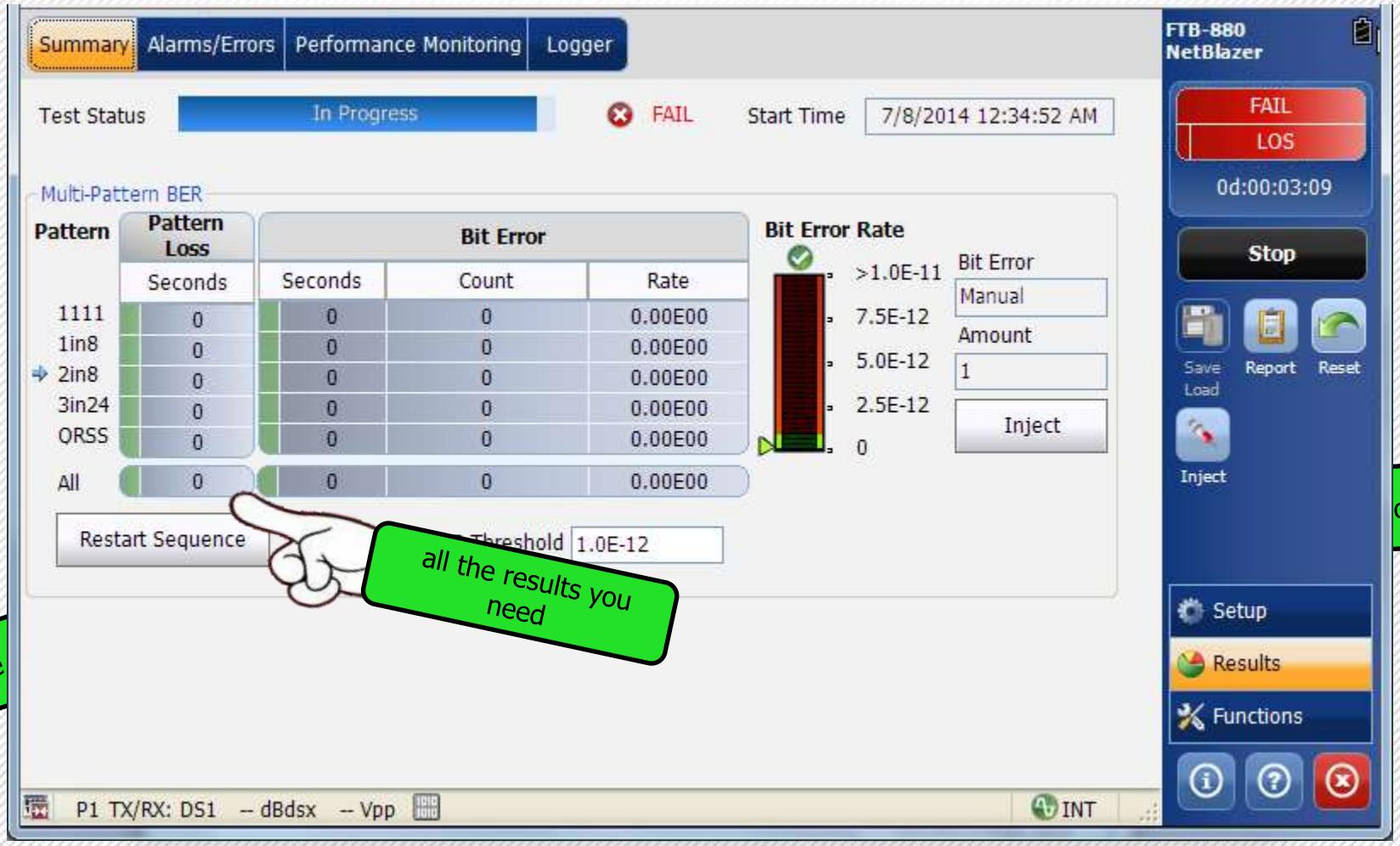


The NetBlazer Series Now Supports TCP Throughput Testing

Automated BERT

DS1 Feature

Legacy Anyone?



L2 Transparency Testing

What Is a Layer-2 Transparency Test?

- Simulates the processing of layer-2 control protocol (L2CP) frames through a network
- **Control frames** interact with network devices while **data frames** pass through a network without interacting with the devices that comprise the network
- Example of control protocols: spanning tree (STP, RSTP, MSTP), link aggregation (LACP), Cisco's proprietary protocols (CDP, VTP, PagP, etc.)
- Verifies transparent forwarding of L2CP frames through switched and/or routed networks

L2CP Frames

- Parameters used to generate L2CP frames:
  - **Destination MAC address**: Always set to a multicast value. This value depends on L2CP and how it is used.
  - **Protocol identifier**: Depending on the protocol, it is typically a combination of the following: frame format, EtherType or LLC (depending on format) and subtype.
  - In certain cases: **frame size** and **frame rates**.

Destination MAC Address	Frame Format	EtherType or LLC	Subtype

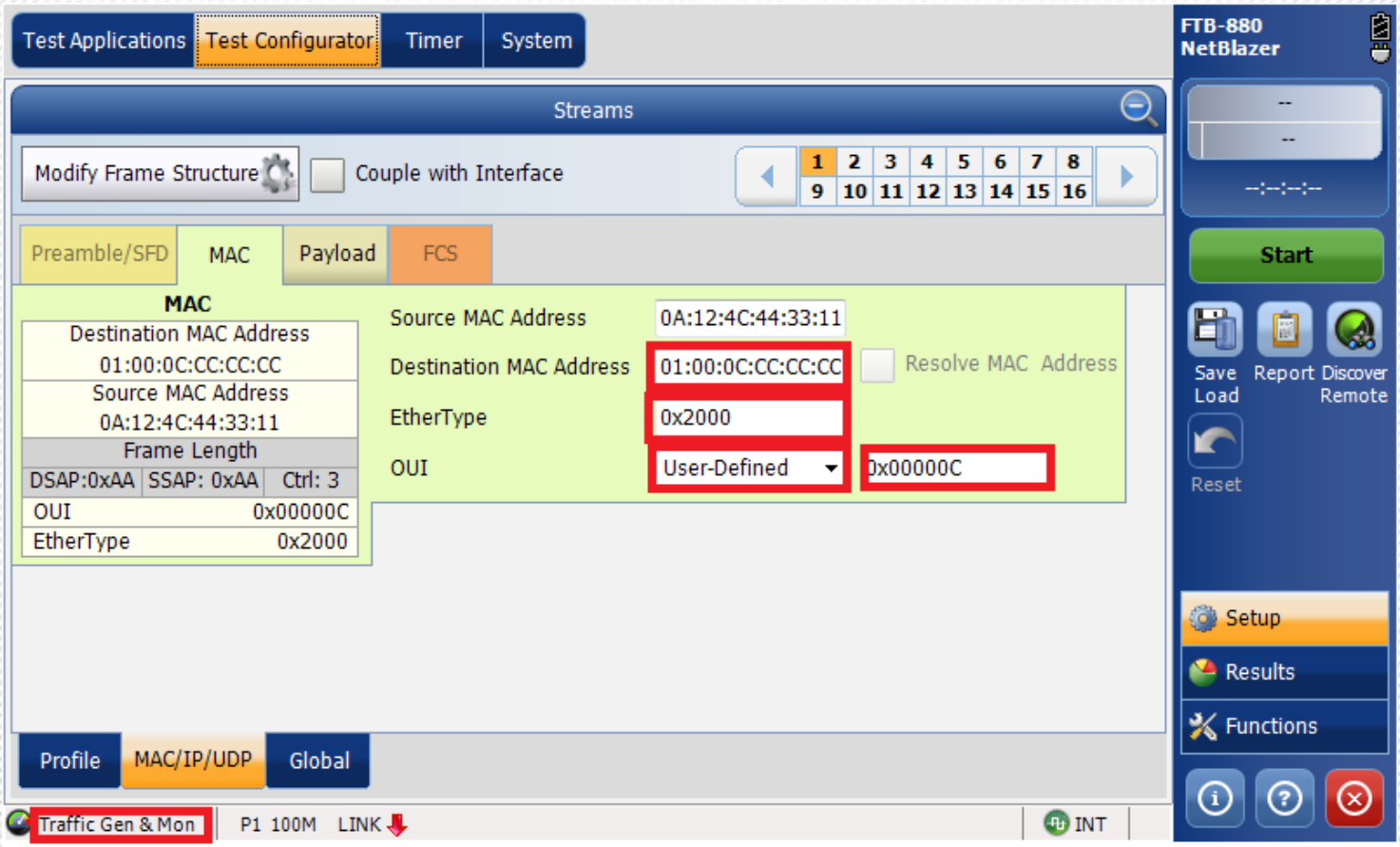
Example:

Protocols	Protocol Identifier	Destination MAC Address
CDP	Frame format: 802.3 SNAP Ethertype = 0x2000; OUI=0x00000C	01-00-0C-CC-CC-CC

L2 Transparency on the NetBlazer

Example

Protocols	Protocol Identifier	Destination MAC Address
CDP	Frame format: 802.3 SNAP Ethertype = 0x2000; OUI=0x00000C	01-00-0C-CC-CC-CC



Layer-2 Transparency

CDP

PVST+

RDP

5 FRAMES SENT

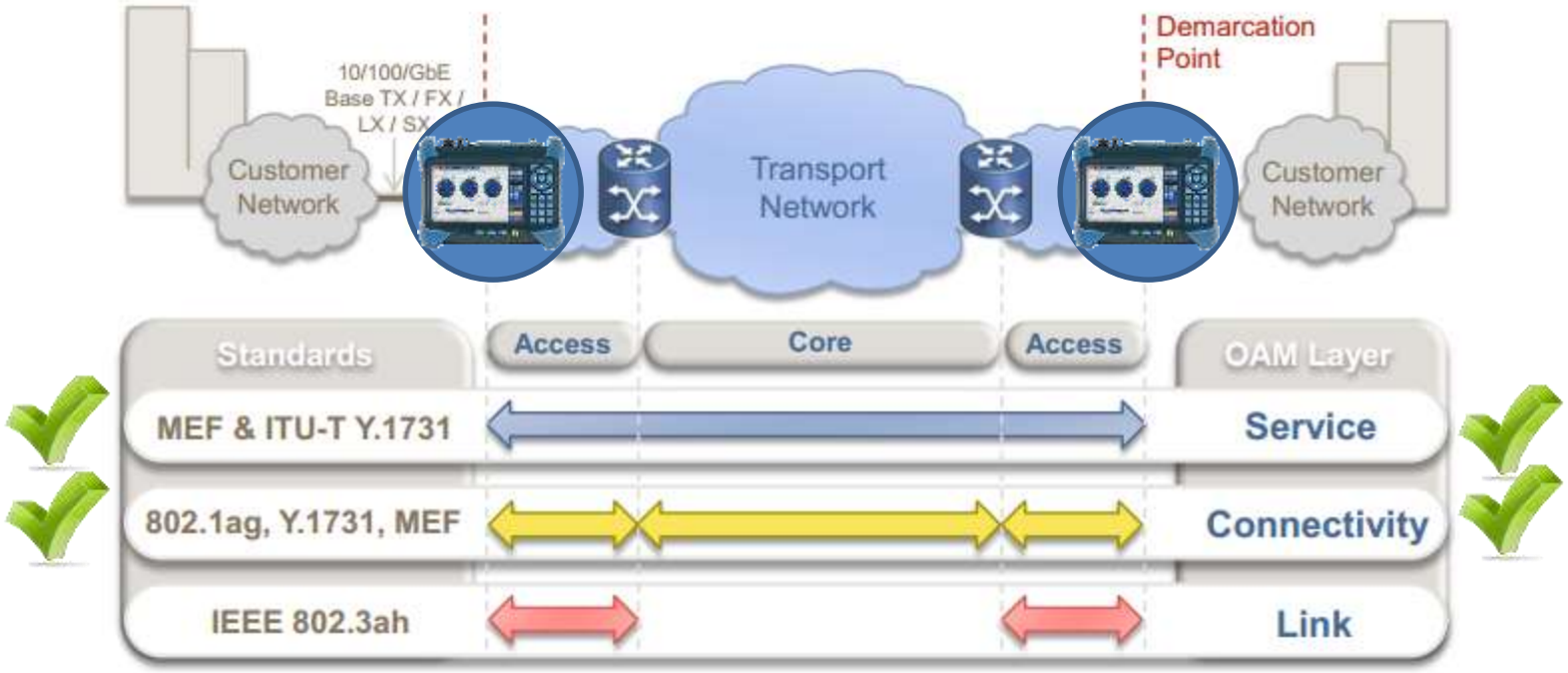
5 FRAMES RCVD

The NetBlazer Series Now Supports Layer-2 Transparency Tests

Carrier Ethernet OAM

Why S-OAM?

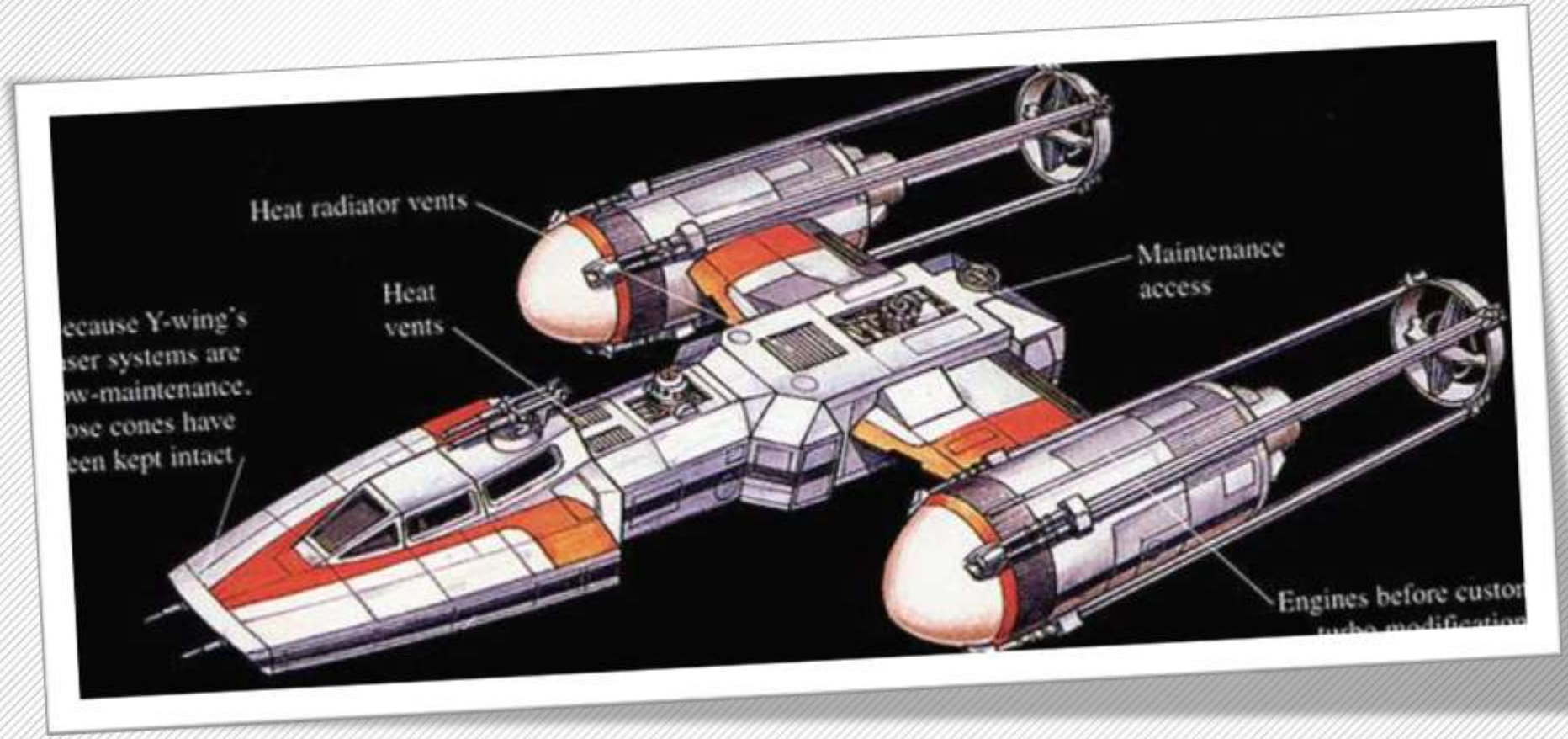
Service Operations and Maintenance



OAM Layer	Function/Focus
Service	End-to-end service (customer) view, reflected in SLAs
Connectivity	Network and service connectivity and performance monitoring, topology-aware, multidomain
Link	Focused on single-hop links, 1st mile transport

Y.1731

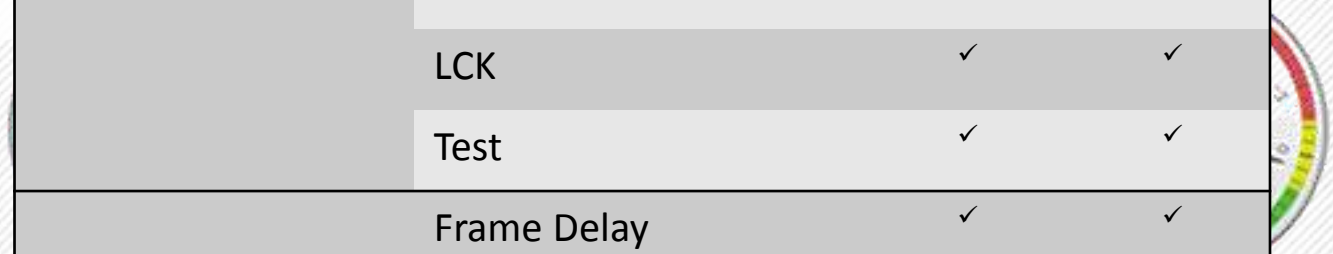
It’s NOT the new Y wing!



ITU-T Y.1731 & MEF

Y.1731 whi
unparallele
service-l
measure S
standard fo

		Y.1731	MEF
Fault Management	Continuity Check	✓	✓
	Loopback	✓	✓
	Link Trace	✓	✓
	RDI	✓	✓
	AIS	✓	✓
	CSF	✓	✓
	LCK	✓	✓
	Test	✓	✓
Performance Management	Frame Delay	✓	✓
	Frame Delay Variation	✓	✓
	Frame Loss	✓	✓
	Synthetic Loss	✓	✓



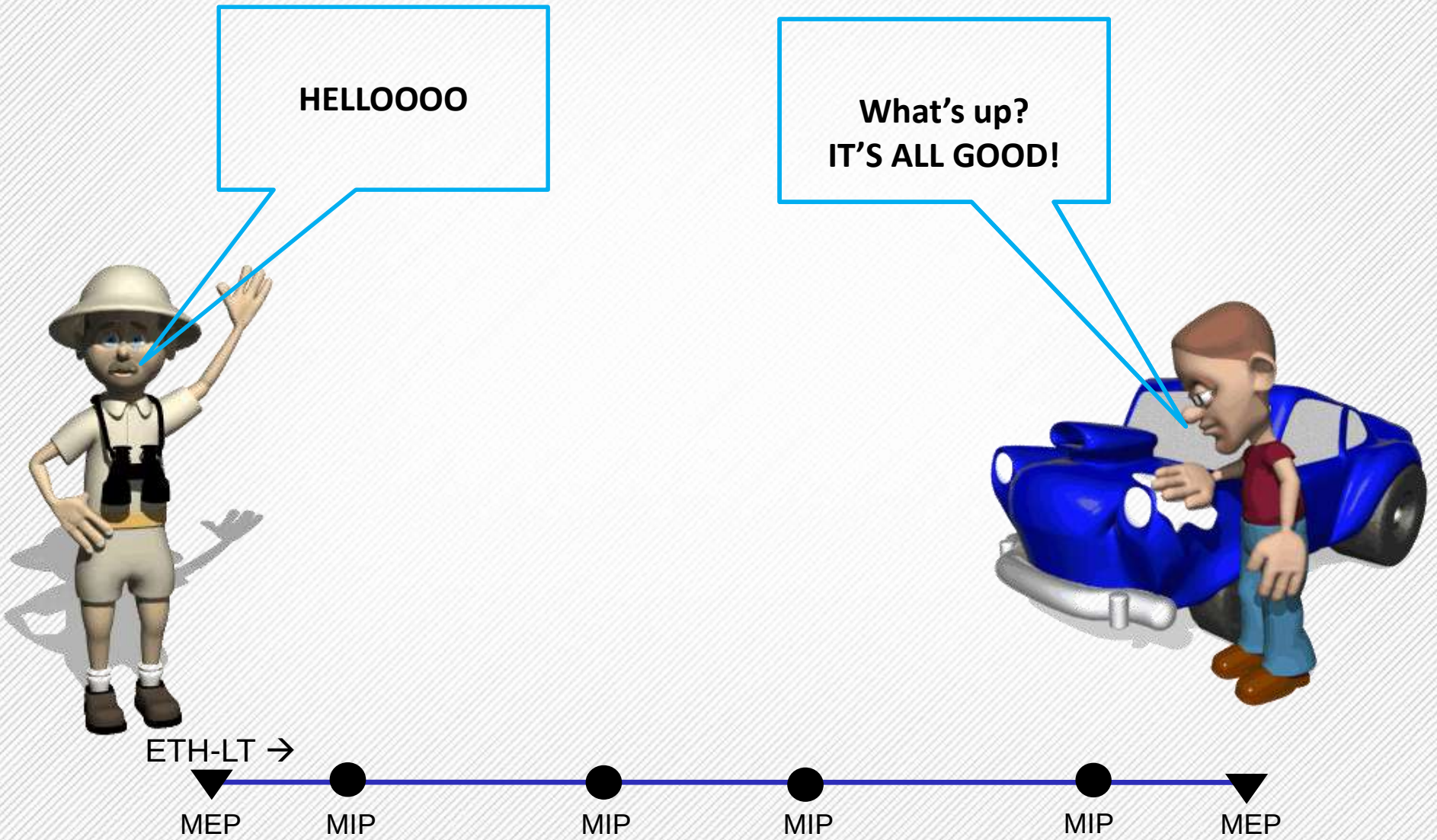
TH Y

802.1ag

		Y.1731	MEF	802.1ag
Fault Management	Continuity Check	✓	✓	✓
	Loopback	✓	✓	✓
	Link Trace	✓	✓	✓
	RDI	✓	✓	✓
	AIS	✓	✓	
	CSF	✓	✓	
	LCK	✓	✓	
	Test	✓	✓	
Performance Management	Frame Delay	✓	✓	
	Frame Delay Variation	✓	✓	
	Frame Loss	✓	✓	
	Synthetic Loss	✓	✓	

Whats a CCM

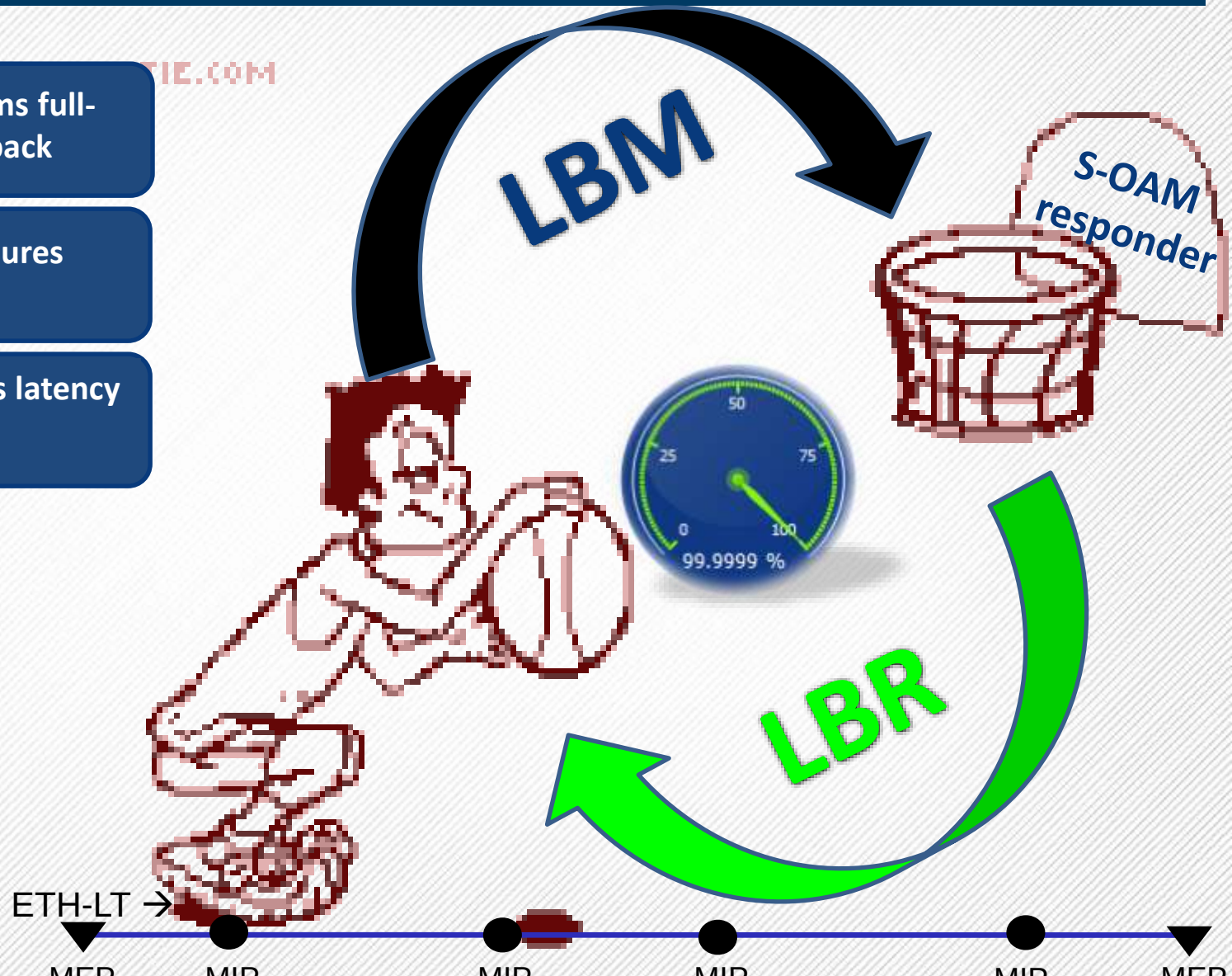
Continuity Check Message



What Is an LBM?

Loopback Message

- NetBlazer performs full-line-rate loopback
- NetBlazer measures frame loss
- NetBlazer measures latency



S-OAM Link Trace

Trace Route Anyone?

Similar to Trace Route

But, we now find the MEP/MIP and its MAC address, as well as the terminating MEP.

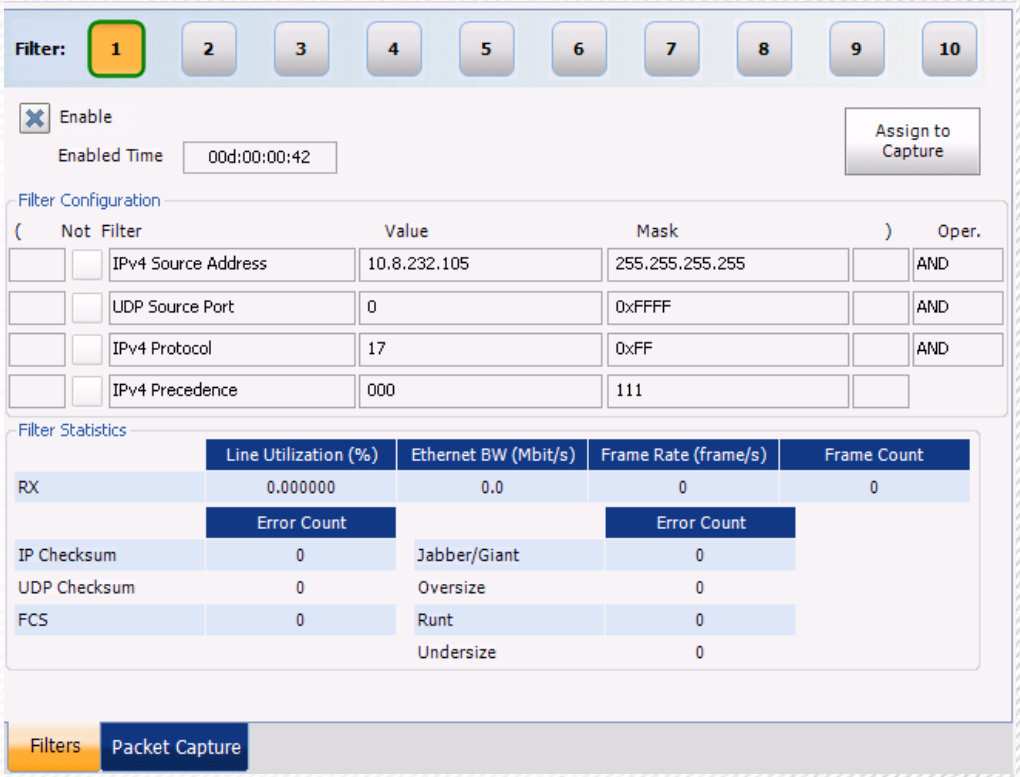
The NetBlazer Series Now Supports Carrier Ethernet OAM

Packet Capture

Advanced Filters and Packet Capture

- Looking to capture data from electrical or optical ports? With NetBlazer, it is now possible.
- 10 Base-T to 10 GigE
- BERT
- TGEN
- Through mode (one direction at a time)
- SyncE
- 1588 PTP
- OAM

- Advanced filtering
- Four filters
- Each filter has four choices with operands
- Perfect for pinpointing issues or seeing distinct traffic
- Supports up to 16 distinct choices and values



Latest NetBlazer Pricing

= $1995.00

= $995.00

Packet Capture

= $1495.00

= $795.00

Advanced filters

Agenda

1 Introduction
2 Release 2.2 new features
3 EXFO TFV
4 Conclusion

EXFO TFv

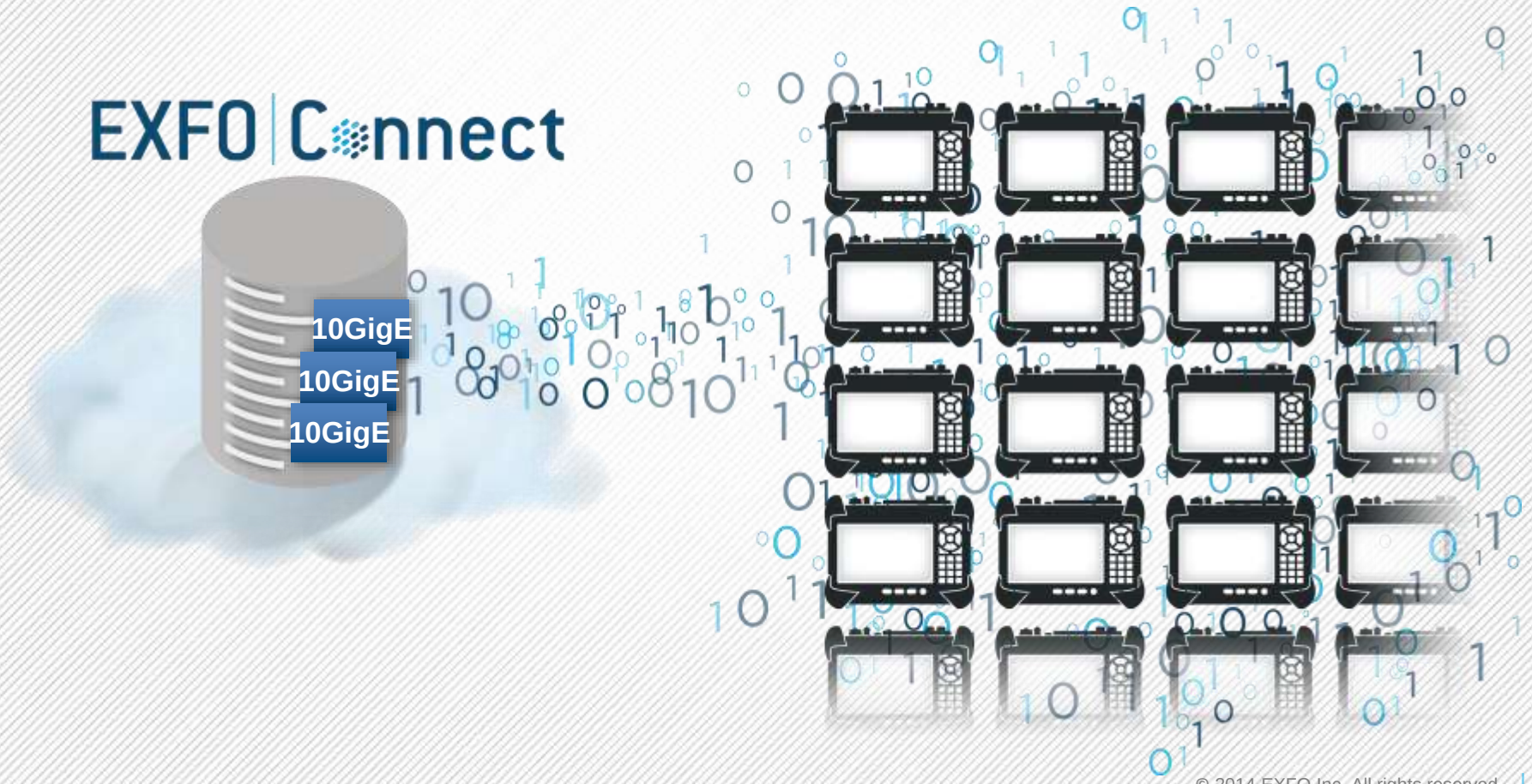
Test Function Virtualization

FTB Anywhere FTB OnDemand

- **EXFO TFv is a cloud-based suite of applications focused on virtualized test functions**
- **Currently, FTB Anywhere and FTB OnDemand are included under this umbrella.**

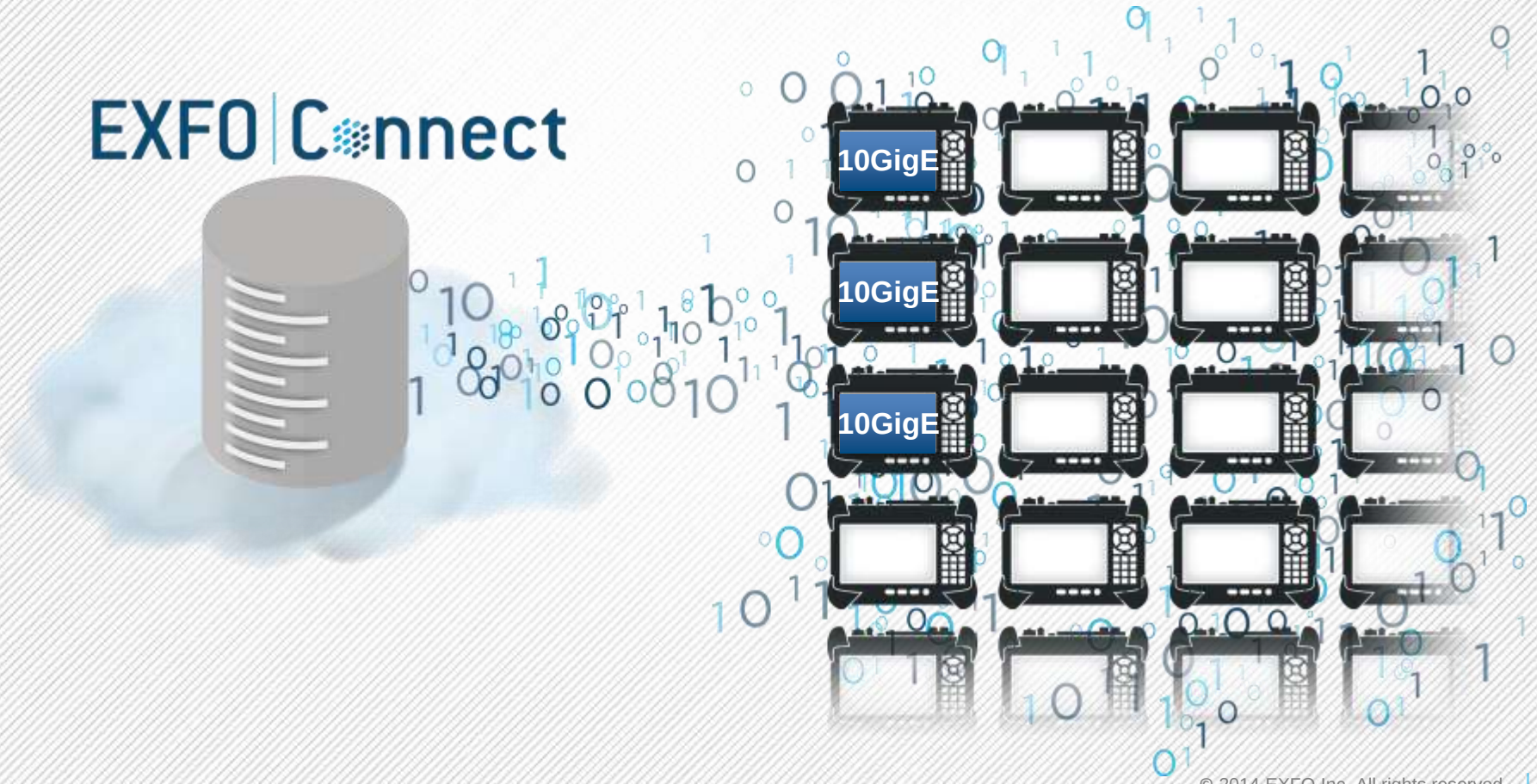
Saving More through Shared Software Options

FTB Anywhere



Saving More through Shared Software Options

FTB Anywhere



FTB OnDemand

Overview

FTB OnDemand

WHAT?	Time-based SW licenses (i.e., SW options that expire on a set date)
WHY?	Offers more flexibility in terms of managing SW options and their costs
WHERE?	Available for some (not all) SW options on the NetBlazer and Power Blazer Series of products
HOW?	The offering is activated through a special EC server owned and managed by EXFO (no EXFO Connect subscription required)

Whatever Your Choice Is…

FTB Anywhere

FTB OnDemand




- You can say **NO** to techs not having the right tool for the job
- You can say **NO** to filling out shipping waybills
- You can say **NO** to packing up test tools for shipment across country
- You can say **NO** to units damaged during shipping
- You can say **NO** to having to ship equipment across the country using FedEx, UPS and DHL
- Finally, you can say **NO** to having no other option but to go with the static-restrictive non-floating options offered by the competition

Agenda

1. Introduction
2. Release 2.2 new features
3. EXFO TFV
4. **Conclusion**

You have what you need!

- User-friendly and consistent GUIs across the following modules:
  - 860/860G/870 /880 & 700G
  - 85100G/88100NG or 88100NGE
- Now identical feature set for modules 10G and below; providing greater flexibility and a seamless transition from the following 1G to 100G products :
  - 860/860G/870 /880 & 700G
  - 88100NG or 88100NGE
- Completely revamped and fortified FTB-860/860G/870/880 modules making it easier for field technicians to carry out their daily test operations efficiently

The NetBlazer Portfolio

The Field Techs “ALL-in-ONE”

FTB-700G+
Ethernet ✚ Optical

FTB-880

FTB-870

FTB-860G

DSn/PDH/ISDN

✚

Sonet/SDH/OTN

✚

10 to 10 GigE
F.C.1,2,4,8,10x
SyncE/1588
CPRI/OBSAI

EXFO Connect

- Automation and business intelligence
- Cloud-based equipment and test data management

FTB Anywhere™
Floating Test Licenses

- Budget flexibility
- Available anywhere, anytime and to anyone
- Eliminating barrier to field-testing efficiency
- Feature-rich solution

Thank You