Introducing VERSIV
2013

What is VerSIV™?

– Versiv™ Cabling Certification Platform

The Versiv™ Cabling Certification Product Family

ProjX™ Management System

- Ease and efficiency of setting up and managing jobs

Taptive™

- Gesture-based User Interface for speed and simplicity

LinkWare™ Management Software

- Manage all results in one application

Modular Design

- TwistedPair
- Fiber Loss
- OTDR
- Wi-Fi & network analysis

BICSI®

BUSINESS CHALLENGES over time

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Bicsi®

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BICSI

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2004:
Decreasing cost:
Link test from 35 to 9 seconds

Bicsi®

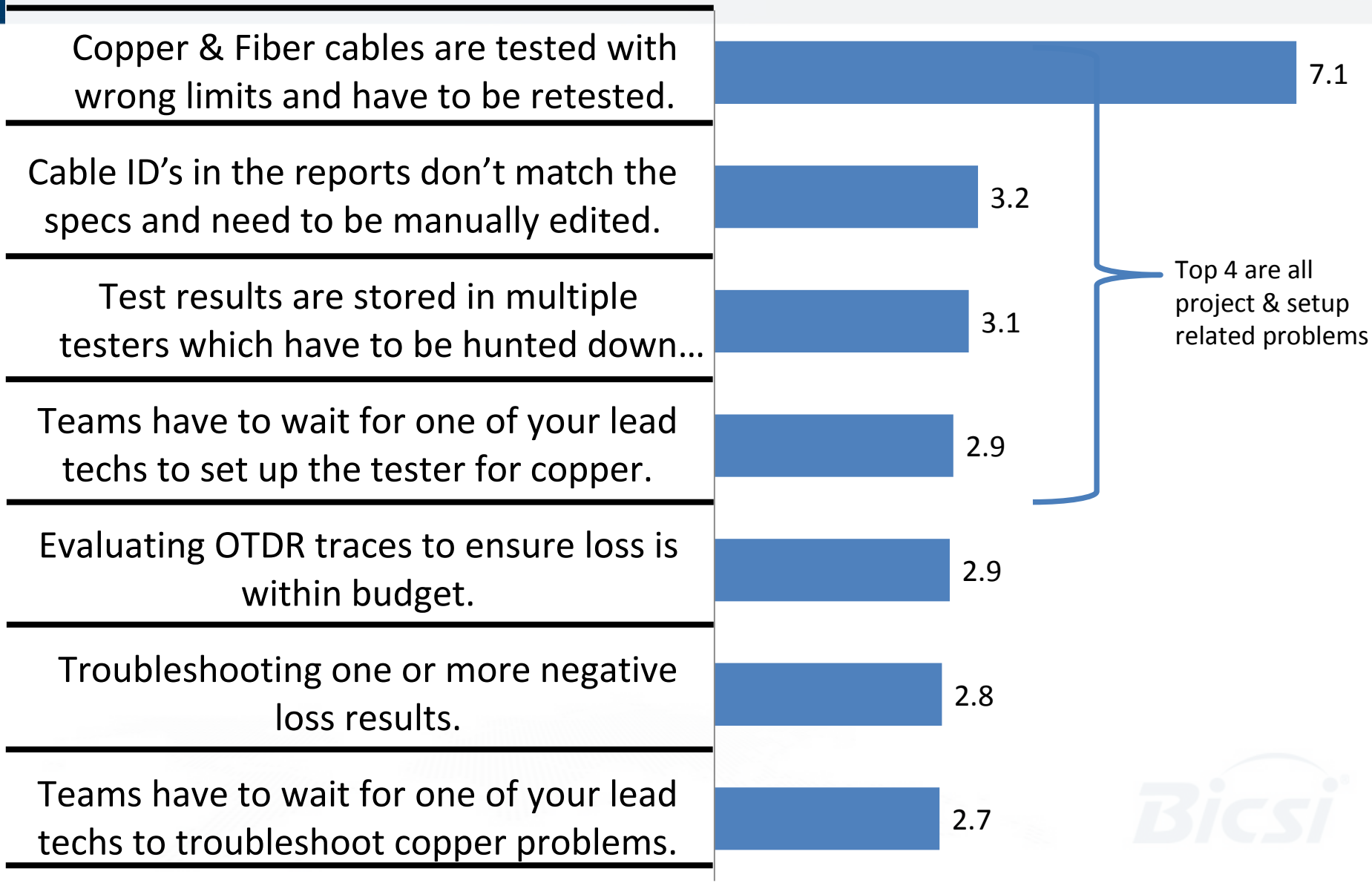
The Traditional focus

Test → Troubleshoot

- It's All About Time
- It was really "All About Copper"

We asked contractors about their business. What they told us revealed that there are massive inefficiencies in how they deploy and operate testers. The next generation of testers must do much more to resolve these issues than the DTX CableAnalyzer!

Problem Ranking (hrs per 1000 links)



What Does it add up to?

	Total Hours Spent	Total Links (Copper + Fiber)	Average time spent on issue per 1,000 link job (hrs)
US	22,471	495,043	45.4
Asia	18,179	294,945	61.4
Europe	4,432	167,725	26.4
Worldwide	**45,082**	**958,713**	**47.0**

Based on a Fluke Networks market research study.

Cost calculation

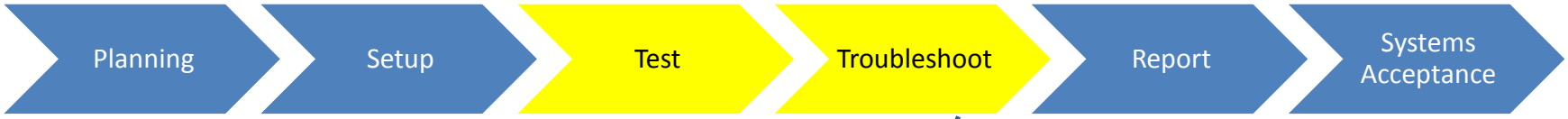
Average Number of Cables Tested Per Month (803 respondents)	**1,196**
Labor Hours Lost per 1,000 Cables	47.0
Average Labor Hours Lost per Month Per Contractor	56.2
Typical Contractor Labor Rate	$45/hr
Average Labor Costs Wasted per Month per Contractor	$2,529
Average Labor Costs Wasted Annually per Contractor	**$30,348**

A new Paradigm for Infrastructure certification

Multiple jobs, teams, testers, and requirements – a single error can erode your project's profitability

Waiting for the project manager or "expert" to set things up and deliver the tester is all too common.

Testing can always be faster: now it is

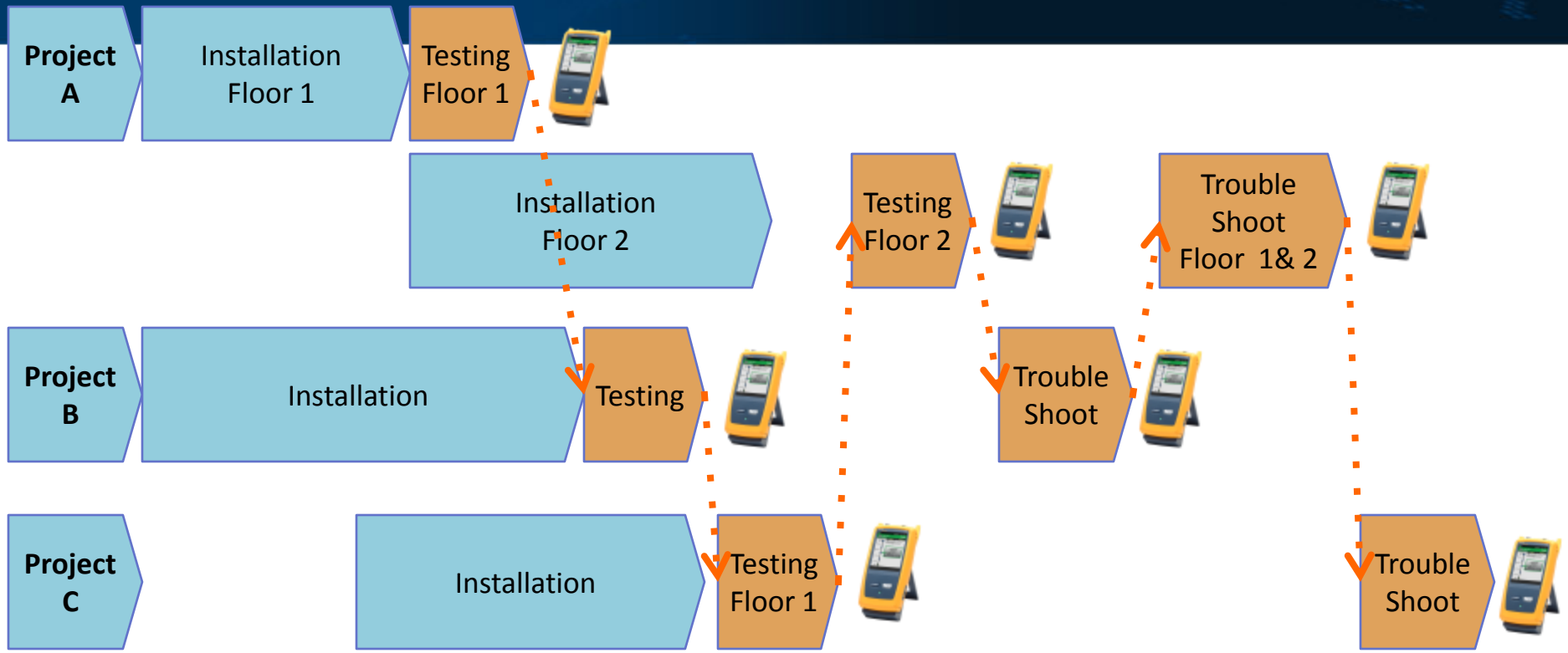


Multiple skill levels of technicians means that projects are delayed while troubleshooting.

Working in an environment with multiple testers, standards, and test regimes makes generating reports time consuming ,delaying system acceptance.

Customers struggle to understand multiple complex reports which delays systems acceptance.

Versiv was designed to work differently than legacy testers



Roaming testers: contractors manage multiple projects, testers and tasks
Concurrent testing: contractors need to simultaneously perform fiber & copper testing and troubleshooting with multiple testers on multiple jobs
Project Configuration: contractors need to be able to eliminate wasted time and avoid costly errors due to redundant and time consuming loading of configurations, test limits and cable identifiers

The world is much more complex!

Today's Project Managers deal with:

- **Multiple** cabling infrastructures:
  - Copper: Twisted pair (shielded/unshielded), Coax, Industrial Ethernet
  - Fiber: Multimode, Singlemode
  - Wireless: Coverage
- **Multiple** industry standards:
  - TIA, ISO, etc.
- **Multiple** tools and instruments for reporting
- **Many** complex measurements, pass/fail situations and differen parameters:
  - Copper: Near End and Far End Crosstalk (NEXT; FEXT), Return Loss, Insertion Loss, Alien Crosstalk, Power Sum NEXT (PSNEXT), and more
  - Fiber: Loss (dB's), calculation of loss budgets, length, light launch conditions, and more
- **Multiple** projects being handled simultaneously
- Technicians with **Multiple** skill levels

Increasing complexity leads to more mistakes!

BICSI

Technology & Standards Landscape

- Level V Accuracy
  - IEC61935-1: accuracy requirements to 1 GHz
- Encircled Flux Compliant
  - ISO/IEC14763-3: required test conditions
  - IEC61280-1-4: required test conditions
- Resistance Unbalance
  - IEC61935-1: accuracy specification
  - IEC11801:2002: balance requirements
  - IEEE 802.3af - ANSI/TIA/EIA-568: balance requirements
- Alien Cross-Talk On-board: Distance to open shield
  - ISO/IEC61935-1&14763-2: cabling system performance
  - ISO 11801: cabling system performance
- Balance (TCL, TCTL, ELTCL)
  - IEEE 802.3 Next Gen BASE-T Study Group
  - TIA TR42.7 Next Gen Cabling Study Group
- Differential Mode (RL, NEXT, IL, FEXT, et.al)
- Mode Conversion

Versiv Platform

Fiber Certification
Certifiber Pro

Copper Certification
DSX-5000

OTDR Certification
OptiFiber Pro

Wired + Wi-Fi Troubleshooting
OneTouch AT

Future?

BICSI®

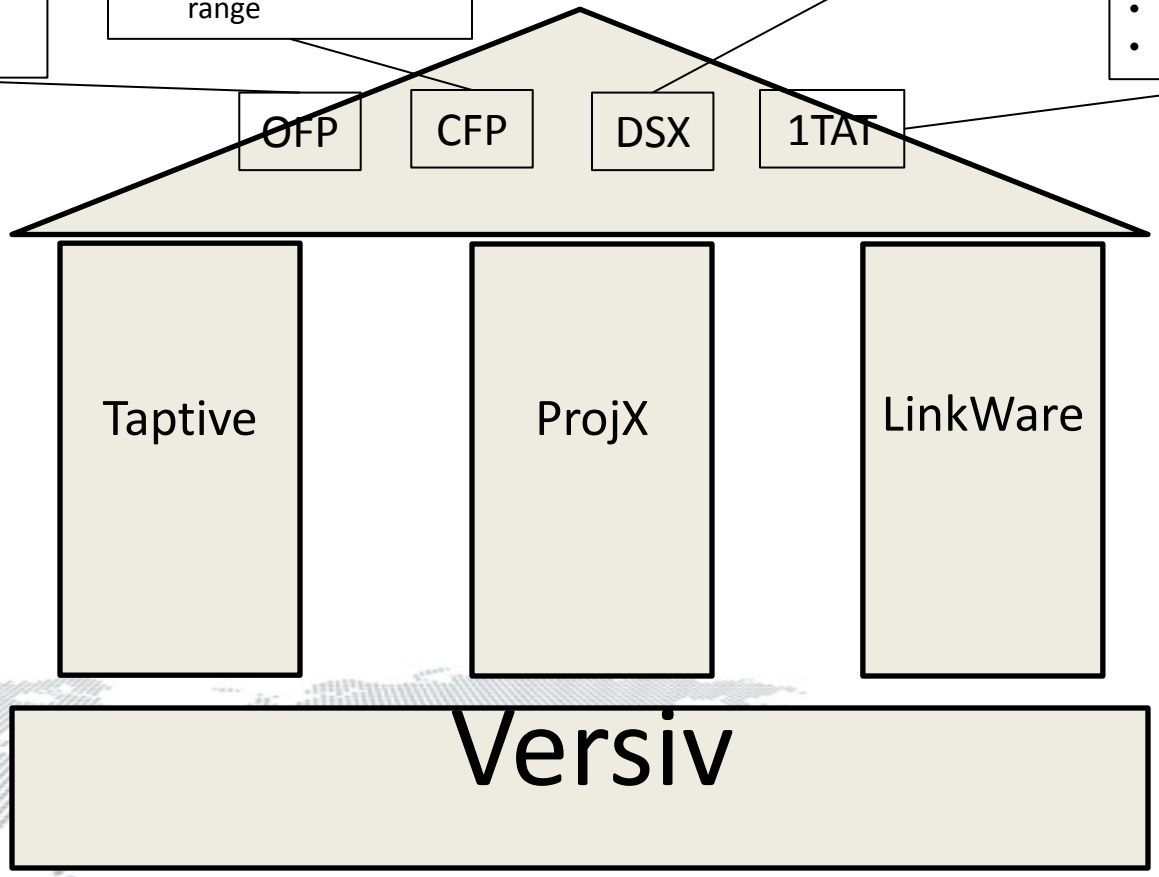
Versiv platform

- Shortest event and attnuation dead zones
- Fast test time
- Fiber end-face inspection on board
- EventMap
- DataCenter Mode

- 3 Second Autotest
- Encircled Flux compliant
- Fiber end-face inspection on board
- Extended distance range

- Troubleshoot
- Fast
- Tough
- Level V
- AxTalk

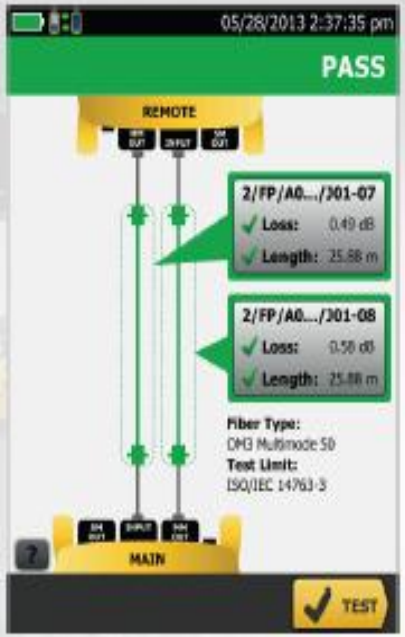
- Wired performance testing
- Wi-Fi performance testing
- Path analysis
- Multiport statistics
- VoIP analysis



BICSI

Taptive Interface

Powerful and intuitive interface - drill down into the details with a touch.



Complete data is displayed with a test result. The dotted line shows what's included in the measurement. Detail windows show the results for each fiber tested.

Detail shows margin and allowable limits for the fiber at two wavelengths.

BICSI

Taptive interface

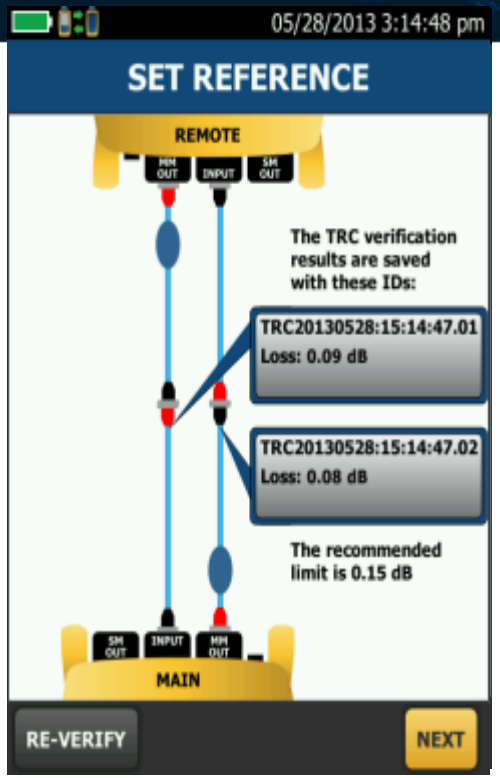
Set Fiber Reference Wizard:

– You have the option of running the wizard.

– Shows you how to set a fiber reference.

– Verifies the test reference cords.

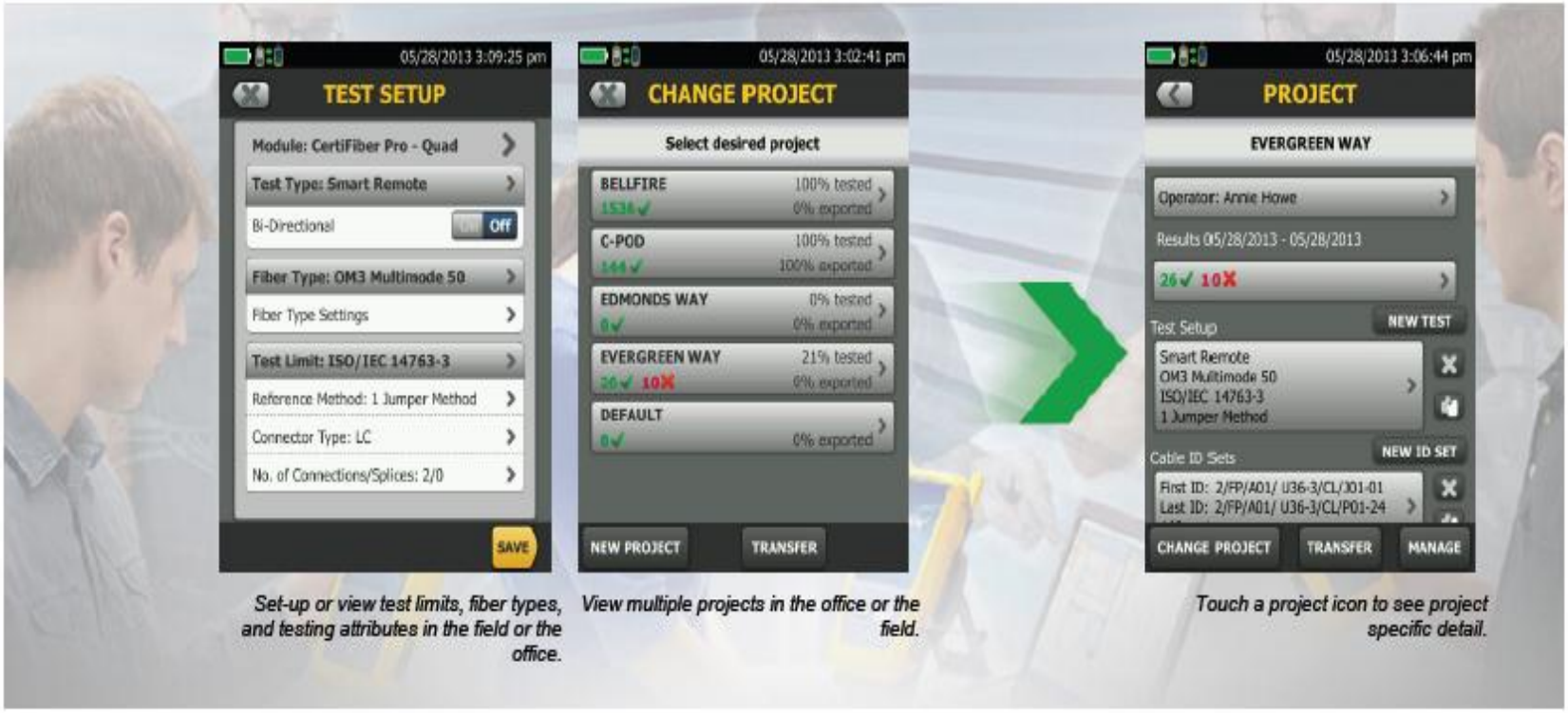
– Saves the test reference cords verification.



No more mistakes when setting a reference

ProjX Management System

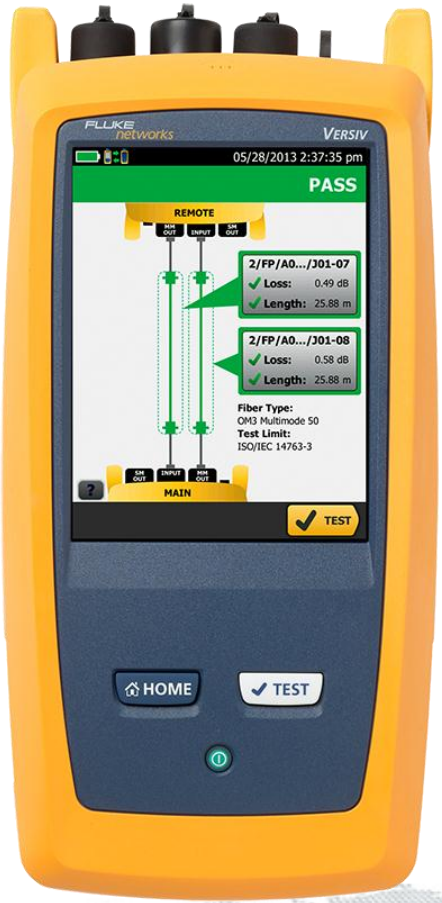
- Easy to set up, minimize test limit errors/better manage multiple projects.
- Create new project for different jobs, locations or customers.
- Easily define project requirements ahead of time.
- Store jobs in LinkWare for each transfer to other Versiv testers.



linkware

Bicsi®

DSX-5000 CableAnalyzer
Twisted Pair Certification
& Troubleshooting



Certifiber Pro OLTS
Fiber Loss
Certification

OptiFiber Pro OTDR
Troubleshooting &
Certification

OneTouch AT

Bicsi

ProjX

Projx management system

- Project Manager Sets Up Details for Job

Job Name

Tests Passed / Failed

Allowed Tests

Cable IDs

Projx management system

- Mistake-Proof

Only Allowed Cable Types are Shown

Projx management system

- Instant Status of All Jobs

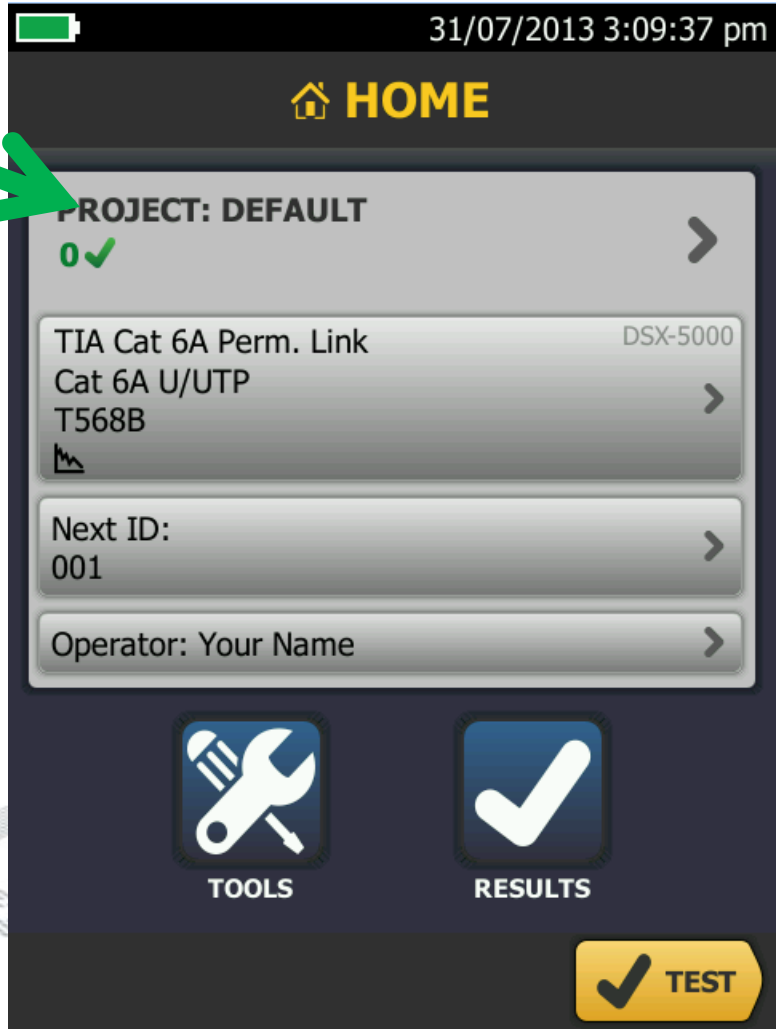
Job Name

Tests Completed / Exported

Tests Passed / Failed

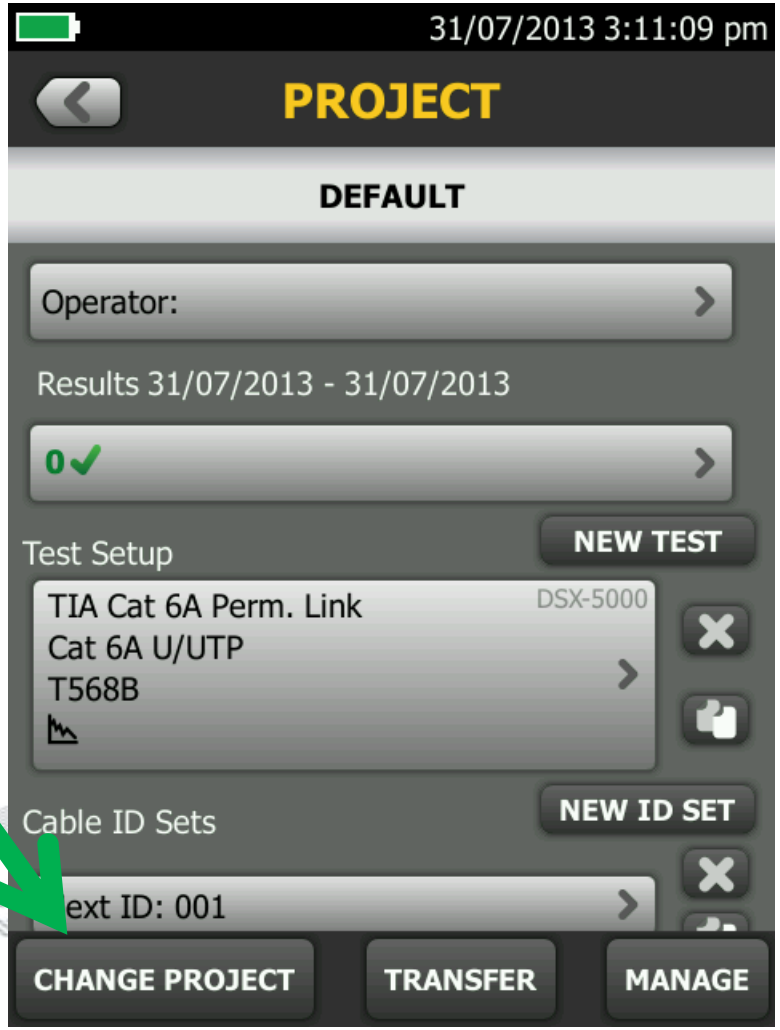
Create new project

- Tap the project panel



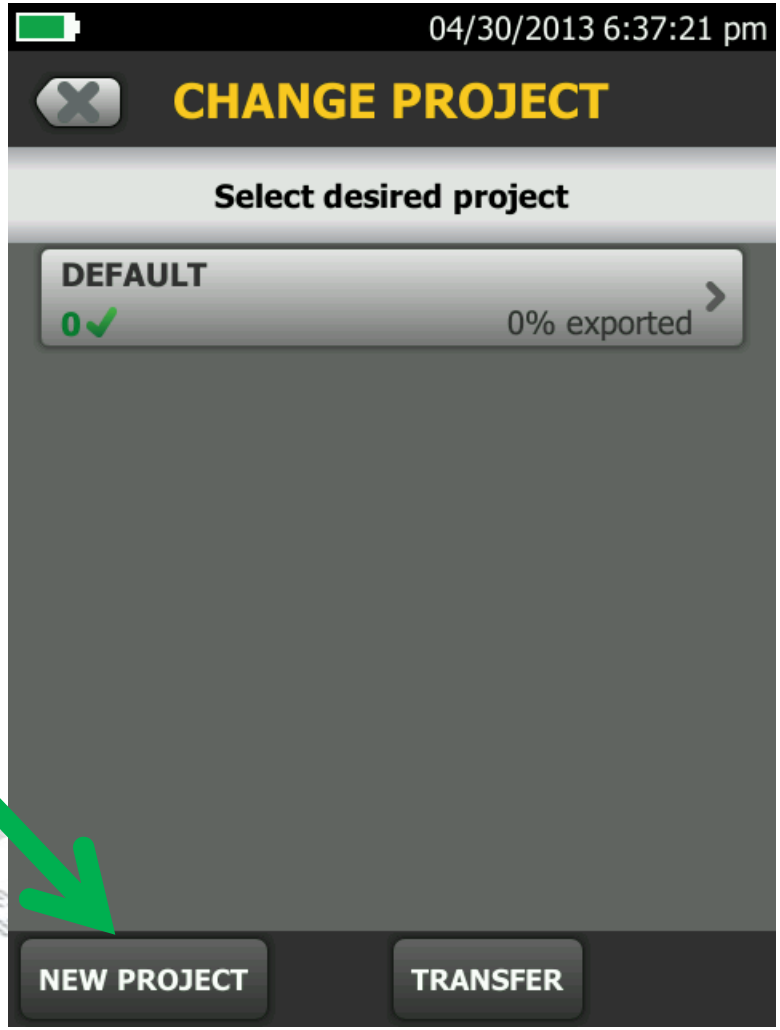
Create new project

- Tap the project panel
- Tap CHANGE PROJECT



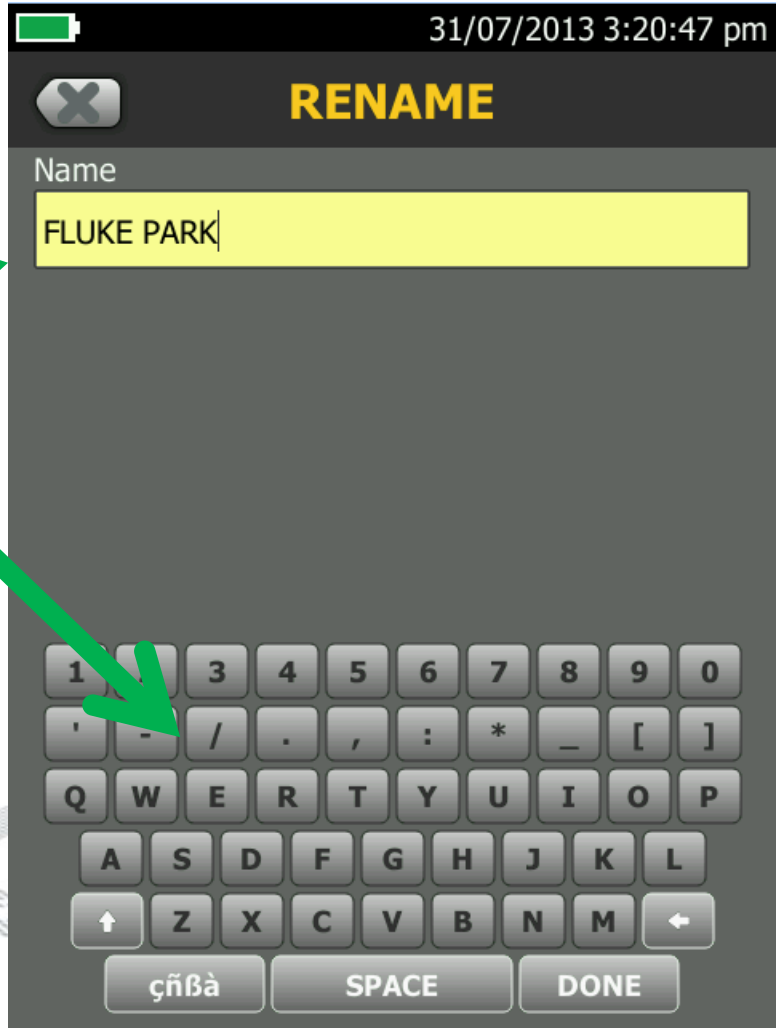
Create new project

- Tap the project panel
- Tap CHANGE PROJECT
- Tap NEW PROJECT



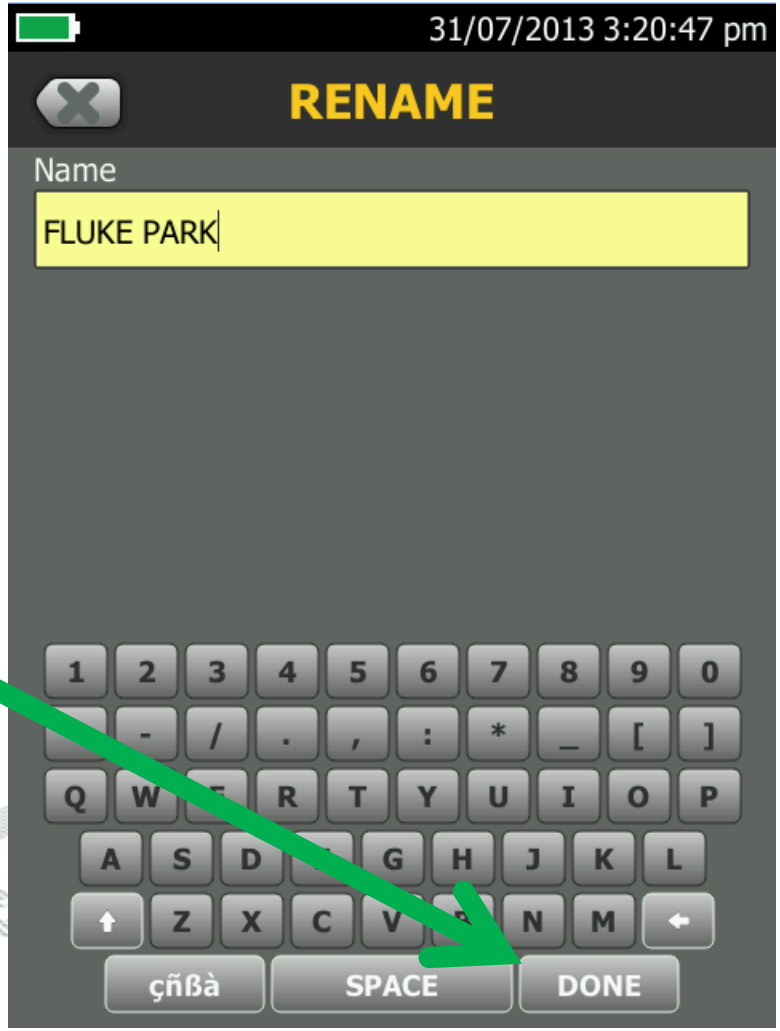
Create new project

- Tap the project panel
- Tap CHANGE PROJECT
- Tap NEW PROJECT
- Type FLUKE PARK



Create new project

- Tap the project panel
- Tap CHANGE PROJECT
- Tap NEW PROJECT
- Type FLUKE PARK
- Tap DONE



Create new project

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- Tap CHANGE PROJECT
- Tap NEW PROJECT
- Type FLUKE PARK
- Tap DONE
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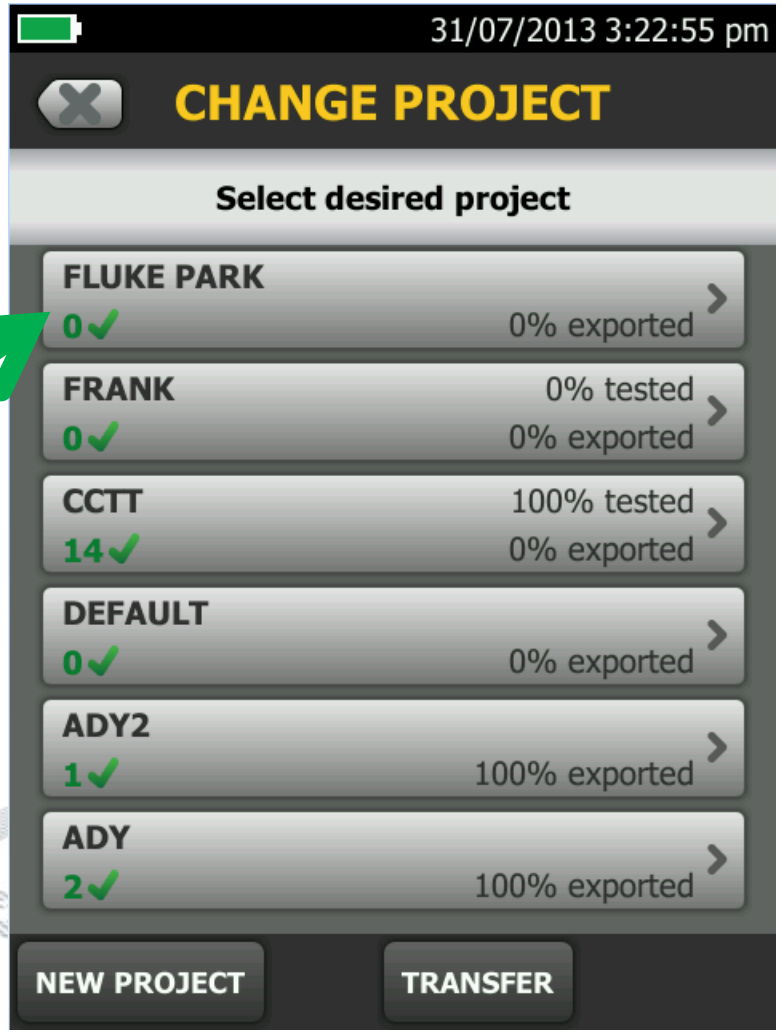

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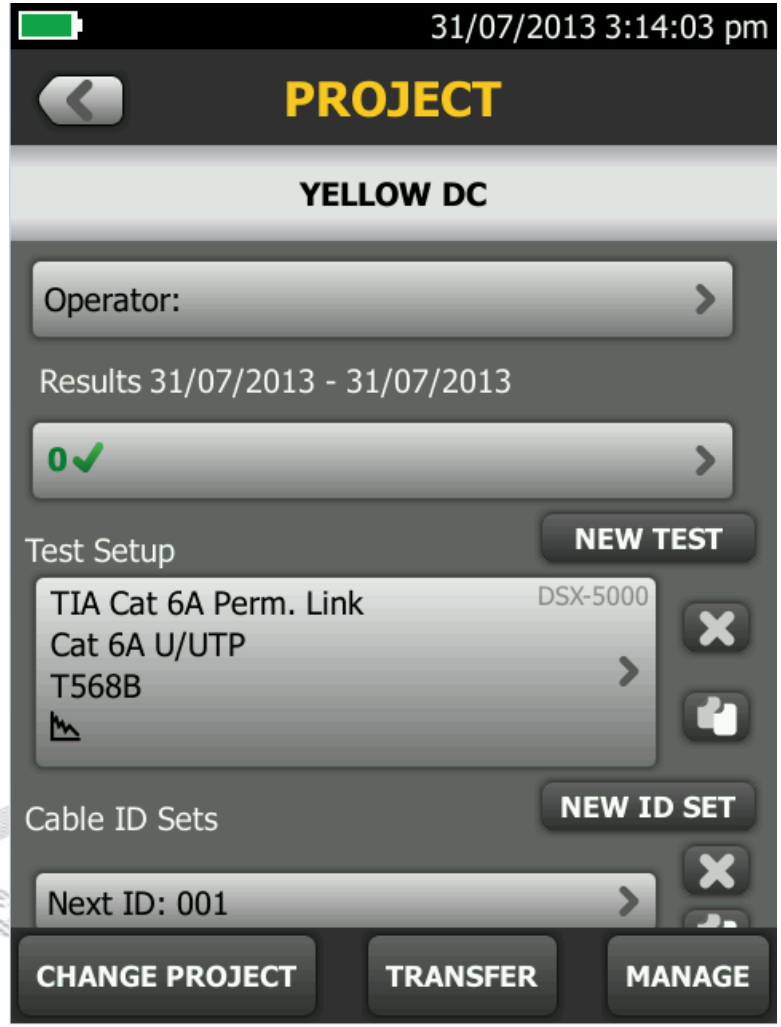
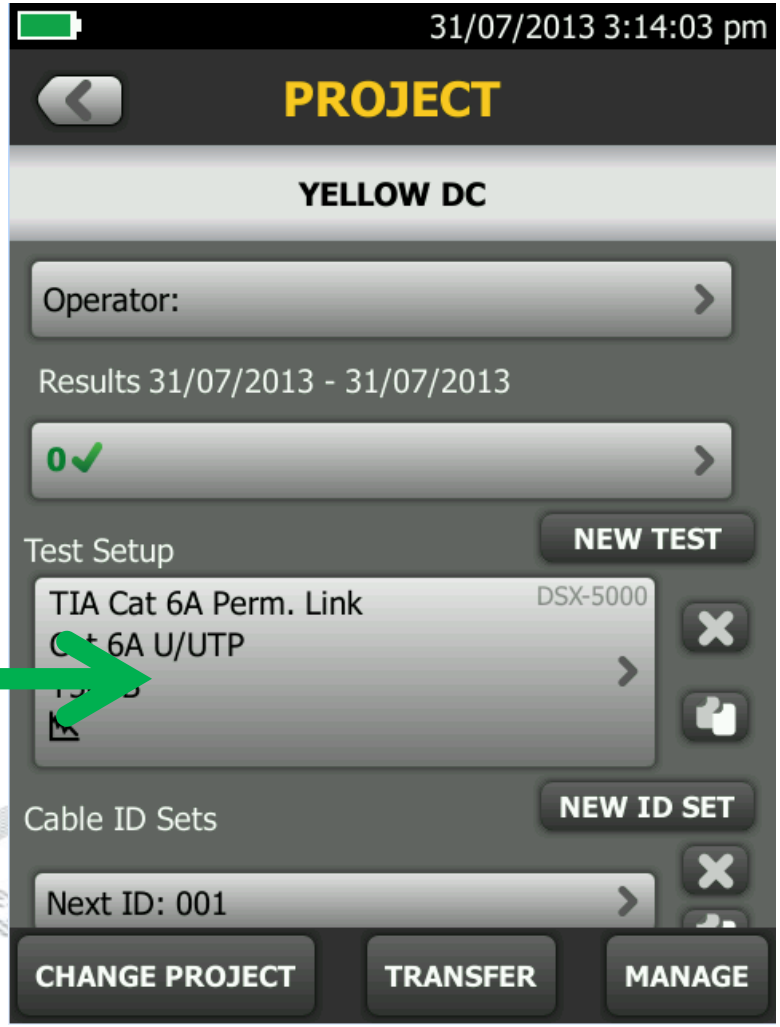
- Tap FLUKE PARK



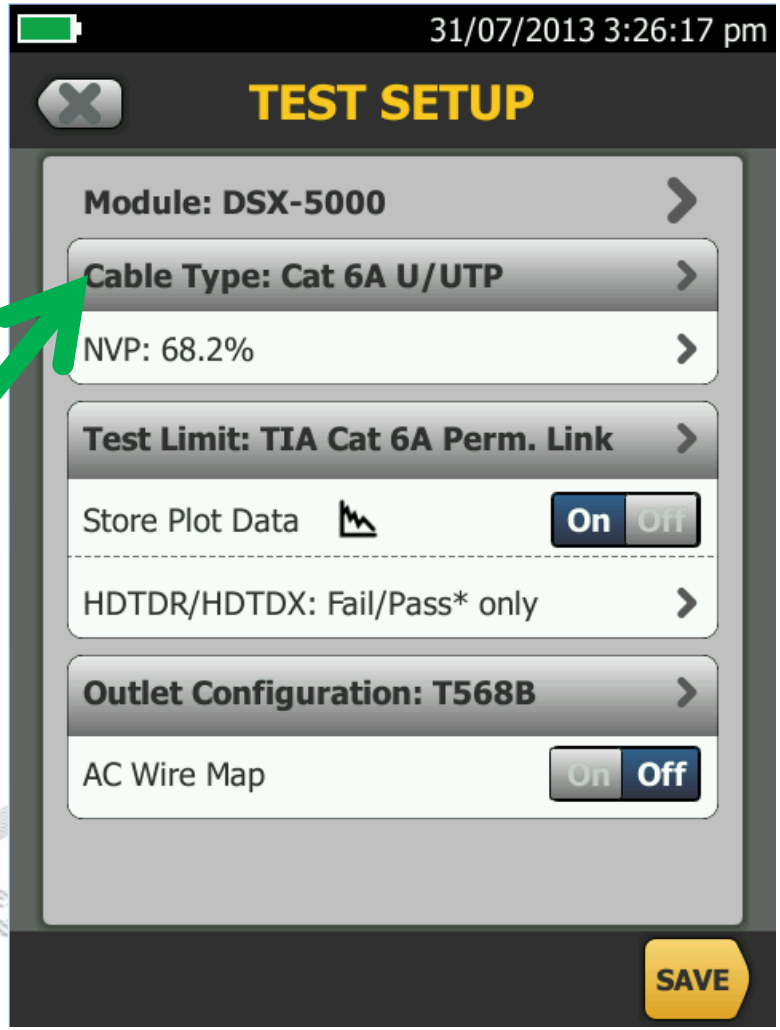
Create Test Setup

- Tap the project panel
- Tap CHANGE PROJECT
- Tap NEW PROJECT
- Type FLUKE PARK
- Tap DONE
- Tap FLUKE PARK
- Tap TEST SETUP



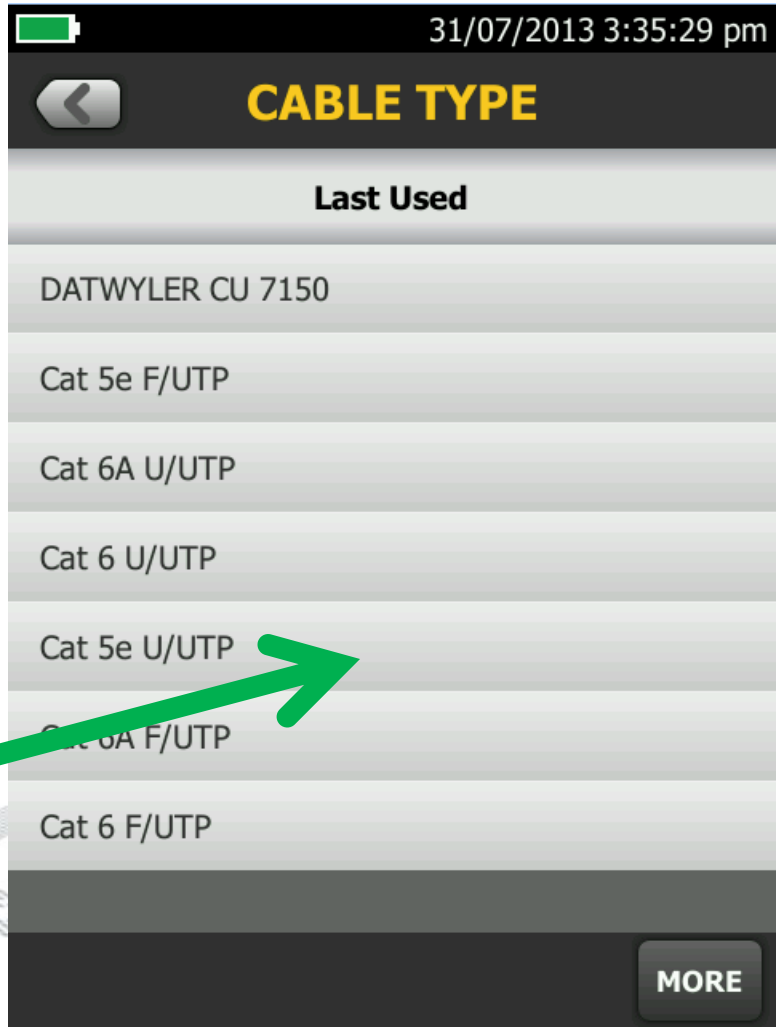
Create Test Setup

- Tap the project panel
- Tap CHANGE PROJECT
- Tap NEW PROJECT
- Type FLUKE PARK
- Tap DONE
- Tap FLUKE PARK
- Tap TEST SETUP
- Tap CABLE TYPE



Create Test Setup

- Tap CHANGE PROJECT
- Tap NEW PROJECT
- Type FLUKE PARK
- Tap DONE
- Tap FLUKE PARK
- Tap TEST SETUP
- Tap CABLE TYPE
- Select Cat 5e U/UTP

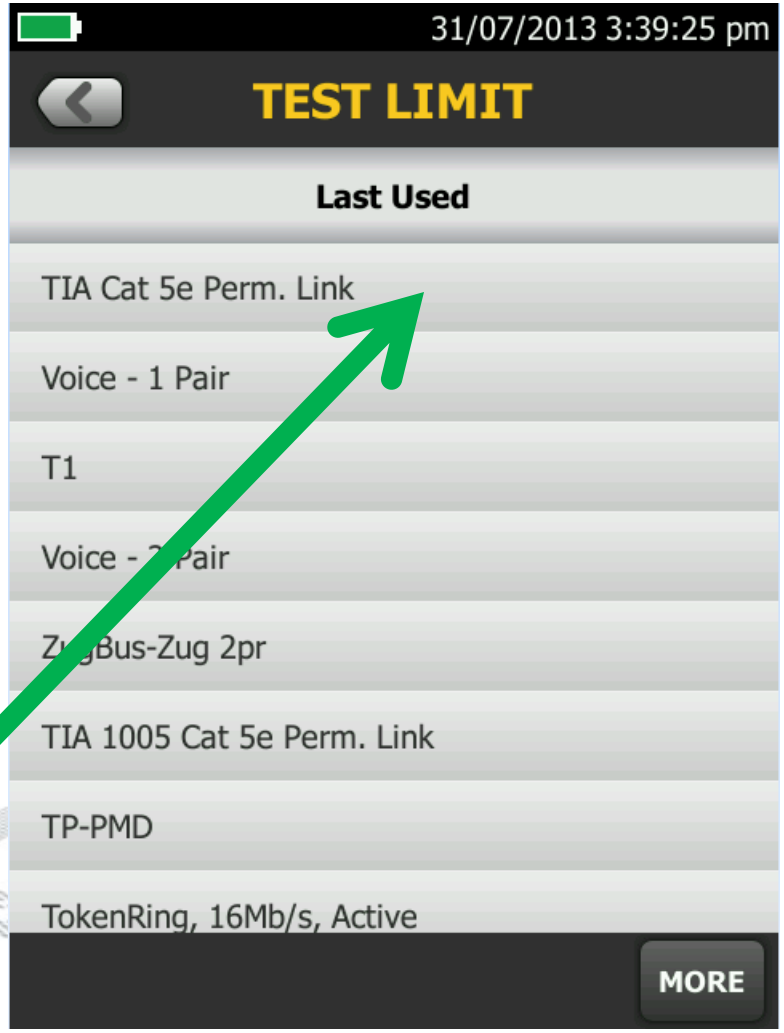


Create Test Setup

- Tap NEW PROJECT
- Type FLUKE PARK
- Tap DONE
- Tap FLUKE PARK
- Tap TEST SETUP
- Tap CABLE TYPE
- Select Cat 5e U/UTP
- Tap TEST LIMIT

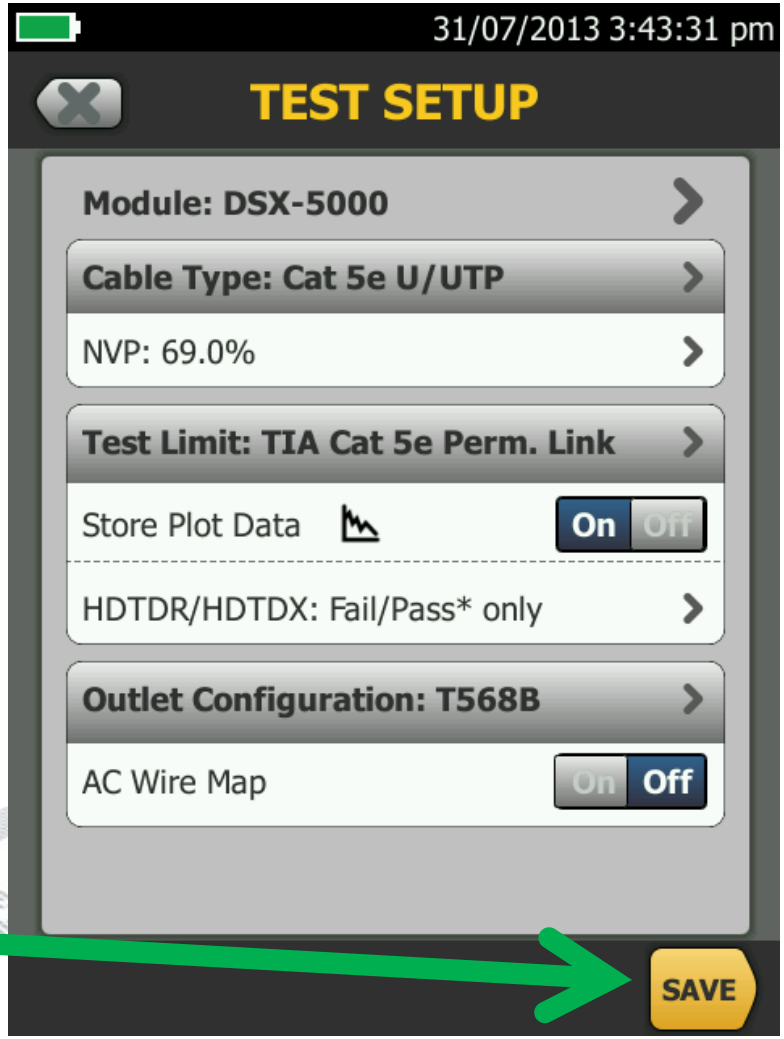
Create Test Setup

- Type FLUKE PARK
- Tap DONE
- Tap FLUKE PARK
- Tap TEST SETUP
- Tap CABLE TYPE
- Select Cat 5e U/UTP
- Tap TEST LIMIT
- Select TIA Cat 5e Perm. Link



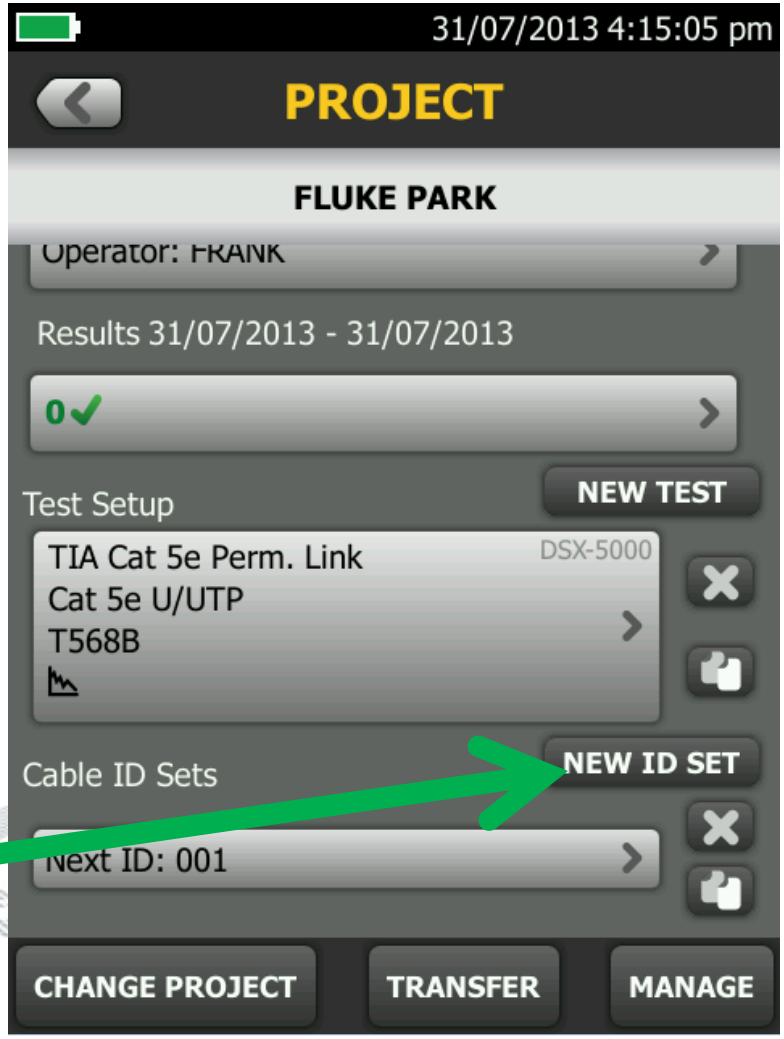
Create Test Setup

- Tap DONE
- Tap FLUKE PARK
- Tap TEST SETUP
- Tap CABLE TYPE
- Select Cat 5e U/UTP
- Tap TEST LIMIT
- Select TIA Cat 5e Perm. Link
- Tap SAVE



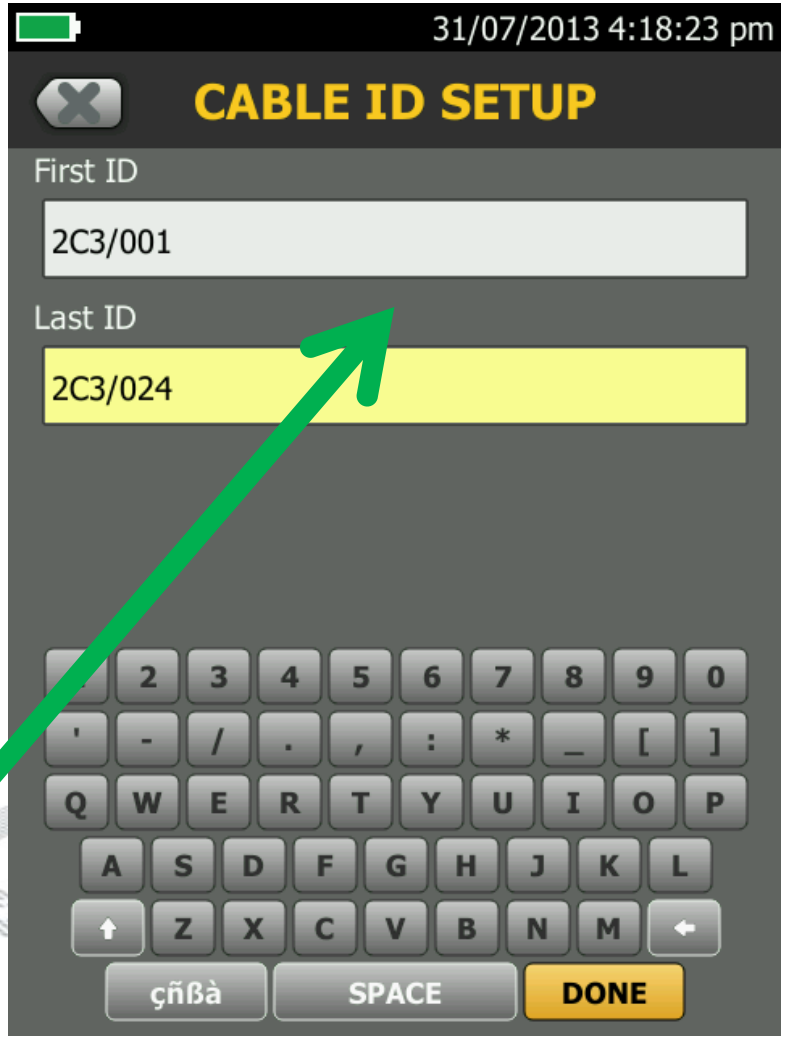
Create Cable ID Sets

- Tap FLUKE PARK
- Tap TEST SETUP
- Tap CABLE TYPE
- Select Cat 5e U/UTP
- Tap TEST LIMIT
- Select TIA Cat 5e Perm. Link
- Tap SAVE
- Tap NEW ID SET



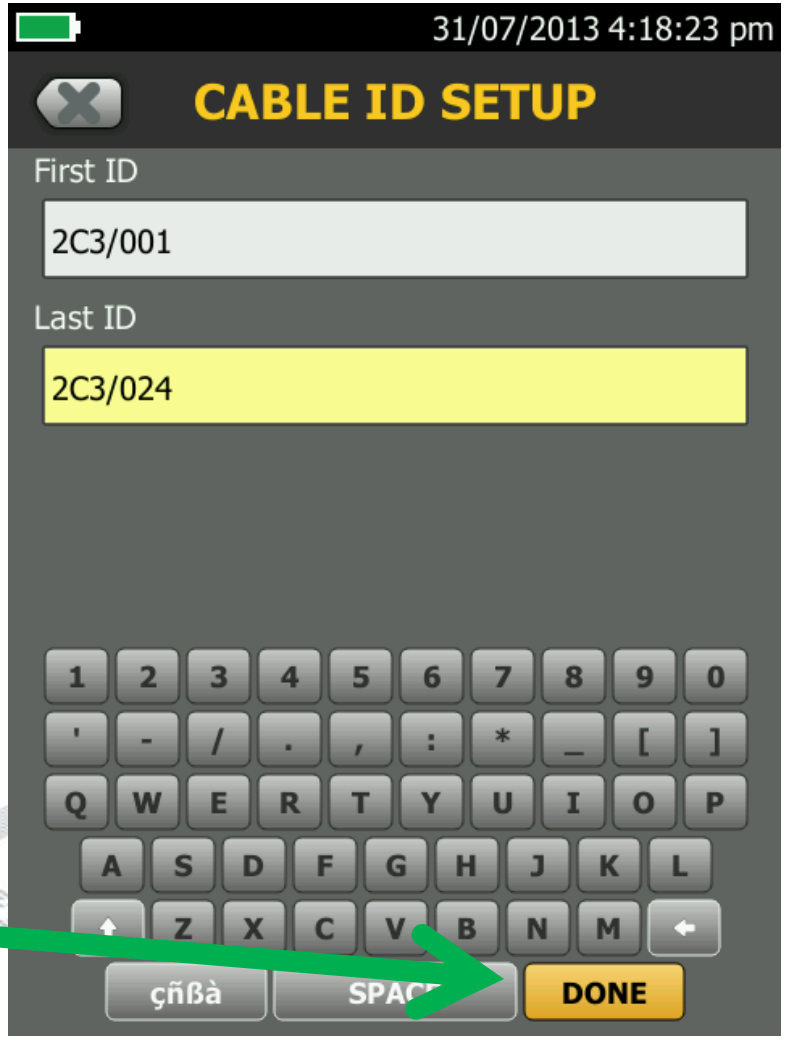
Create Cable ID Sets

- Tap TEST SETUP
- Tap CABLE TYPE
- Select Cat 5e U/UTP
- Tap TEST LIMIT
- Select TIA Cat 5e Perm. Link
- Tap SAVE
- Tap NEW ID SET
- Enter FIRST ID and LAST ID



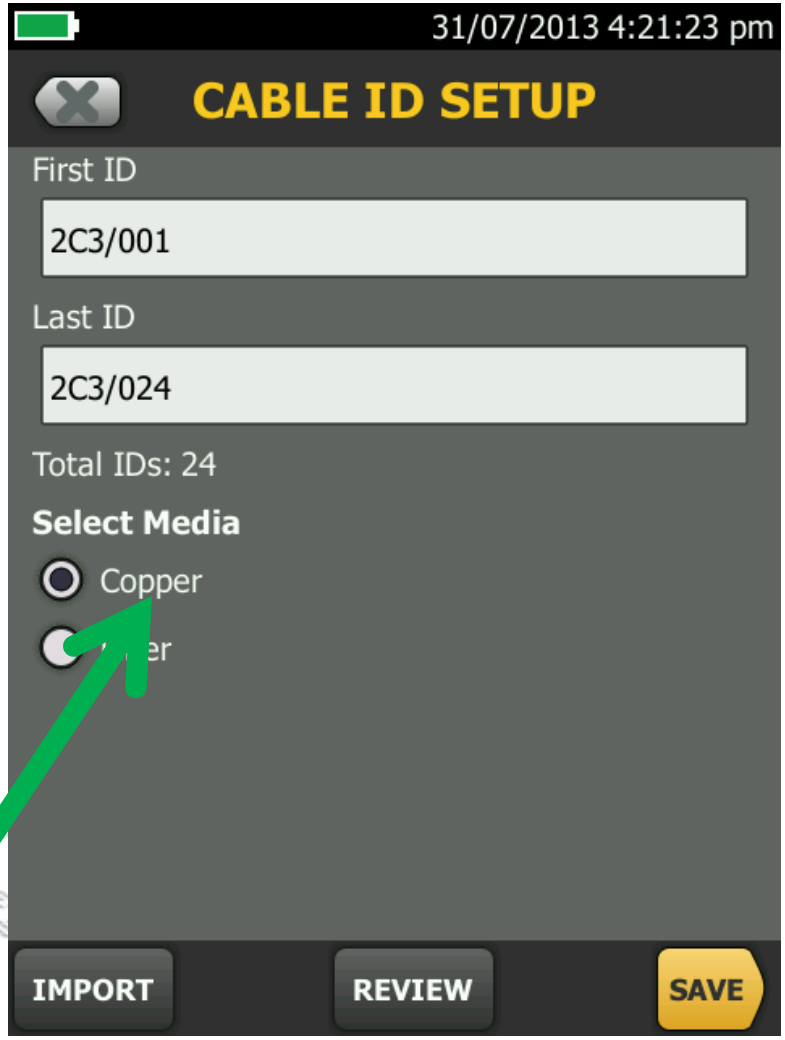
Create Cable ID Sets

- Select Cat 5e U/UTP
- Tap TEST LIMIT
- Select TIA Cat 5e Perm. Link
- Tap SAVE
- Tap NEW ID SET
- Enter FIRST ID and LAST ID
- Tap DONE



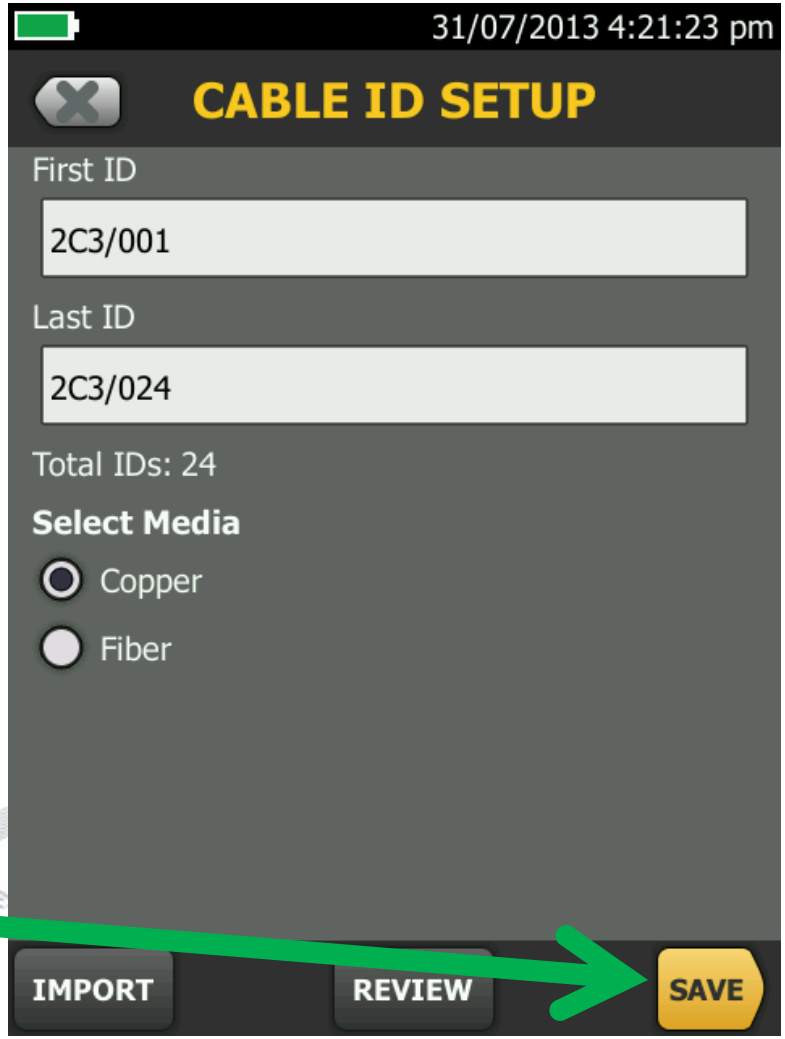
Create Cable ID Sets

- Tap TEST LIMIT
- Select TIA Cat 5e Perm. Link
- Tap SAVE
- Tap NEW ID SET
- Enter FIRST ID and LAST ID
- Tap DONE
- SELECT MEDIA: COPPER



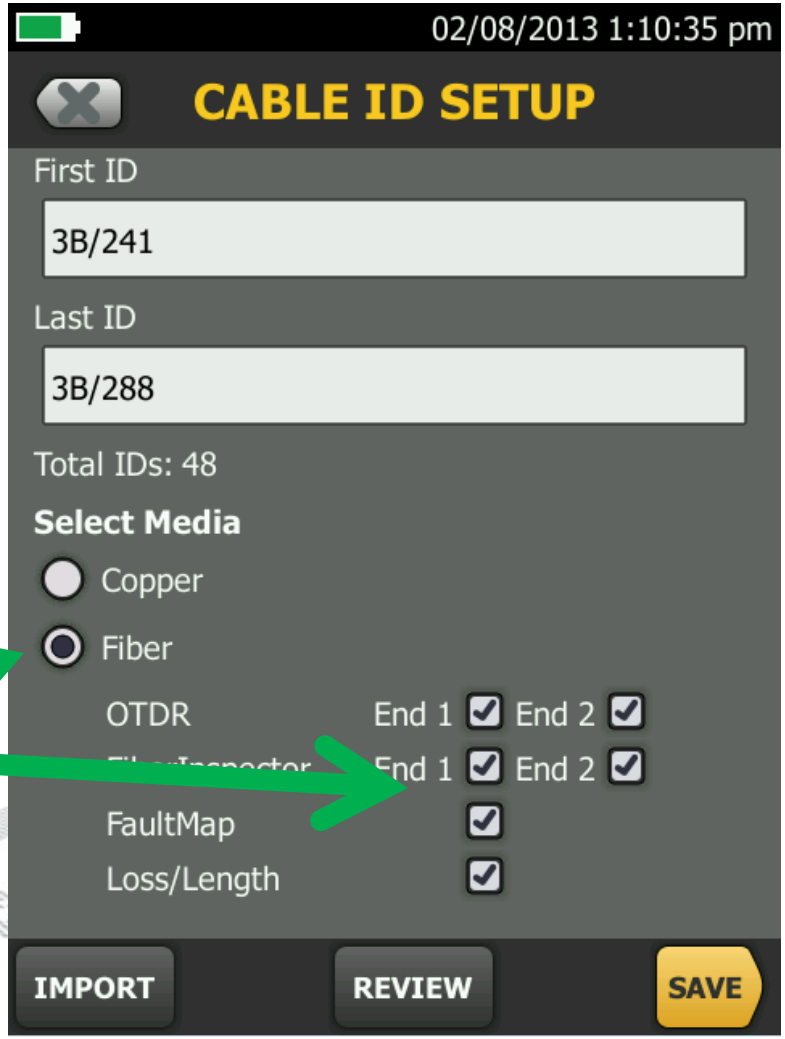
Create Cable ID Sets

- Select TIA Cat 5e Perm. Link
- Tap SAVE
- Tap NEW ID SET
- Enter FIRST ID and LAST ID
- Tap DONE
- SELECT MEDIA: COPPER
- Tap SAVE



Create Cable ID Sets

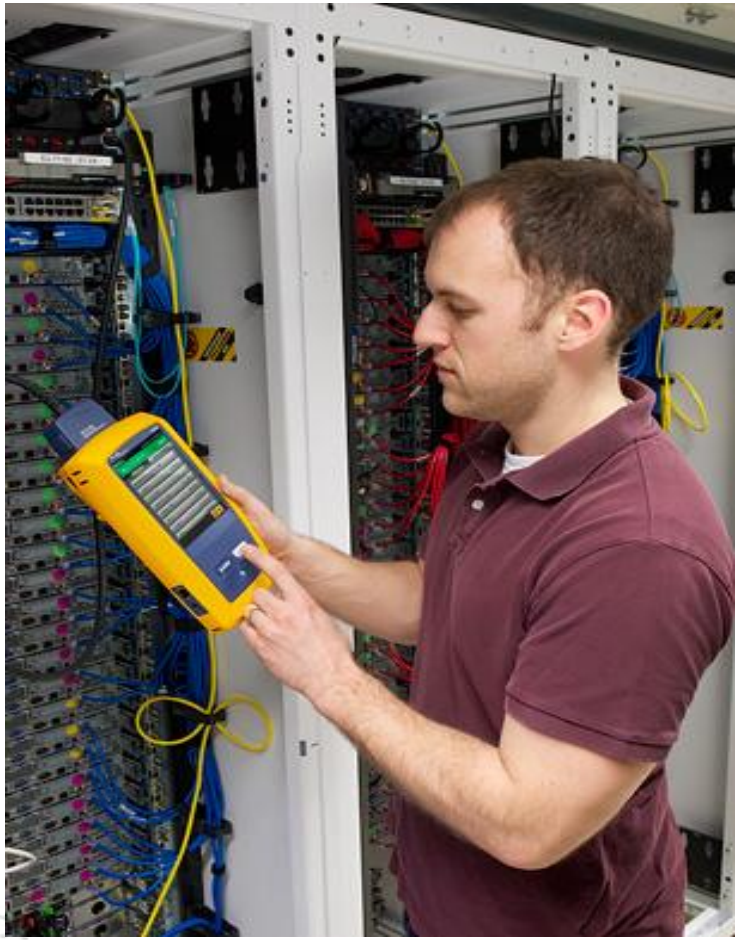
- Select OM4 Multimode 50 TIA-568-C Multimode 1 Jumper Reference
- Tap NEW ID SET
- Enter FIRST ID and LAST ID
- SELECT MEDIA: Fiber and all fiber tests
- Tap SAVE



Copper Testing

Versiv DSX-5000 CableANalyzer

- The only field tester with Level V accuracy
- Faster test time (2X DTX for cat 6A)
- New “laboratory” Measurements
- More Powerful Diagnostics
- Alien Crosstalk testing on-board



Class f_a 1 ghz - Level V Accuracy

IEC-61935-1 Ed.3 :

6.7 Accuracy performance requirements for level IV field testers over 600 MHz

The level IV requirements shall apply to measurements of class F_A cabling up to 600 MHz, and pass/fail evaluation criteria shall apply. Measurement data over 600 MHz shall be provided for information only. Detailed requirements over 600 MHz are for further study.

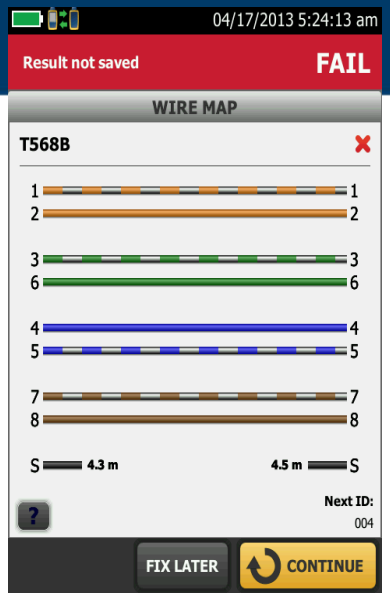
- **Fluke Networks is the 1st Field Testing Company**

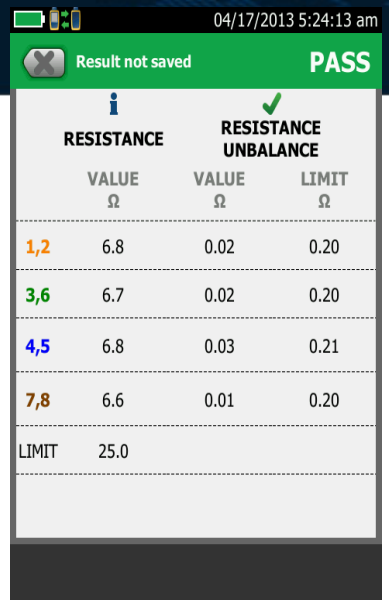
FULL COMPLETE IEC

Faster Cat. 6A Test:

BICSI®

Ready for Today's and Tomorrow's Requirements





Shield integrity

- Shield continuity historically is a DC measurement.
- The DSX-5000 reports distance to shield integrity issues using a patented AC measurement technique.
- Addresses the issue that grounded racks in a data center will show the shield connected, even when it isn't.

TCL, TCTL, ELTCTL, CDNEXT, CMRL balance measurements:

- Specified in ANSI/TIA-568-C.2 & TSBs.
- Specified in ISO/IEC 11801:2010
- Important for successful 10GBASE-T.

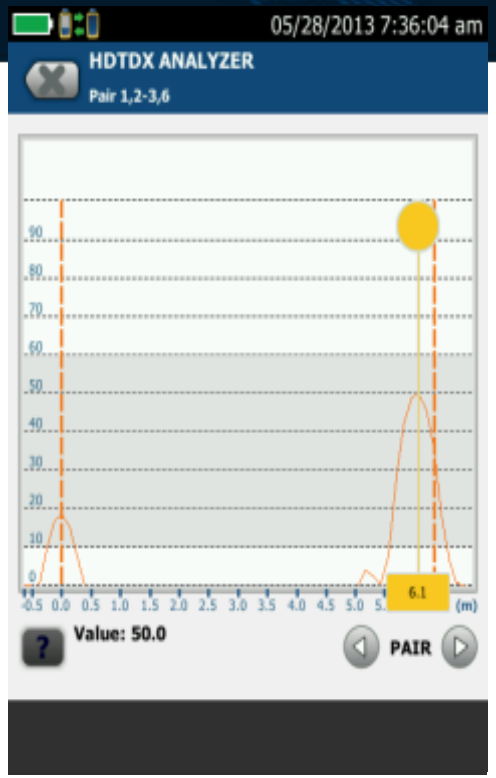
Resistance Unbalance:

- Specified in IEEE 802.3af and IEEE 802.3at.
- Specified in ANSI/TIA-568-C.2.
- Specified in ISO/IEC 11801:2010.
- Important for successful PoE operation.

These measurements are currently not specified as a field measurement because industry experts thought it could never be done in the field.
The **DSX-5000** CableAnalyzer is the **FIRST FIELD TESTER** to measure them!

Powerful copper Diagnostics

- New advanced diagnostics, reduces the time required to fix cabling faults.
  - HDTDR Return Loss Error Diagnostics.
  - HDTDX NEXT Error Diagnostics to “see” where Crosstalk is happening.
  - Uploads to LinkWare for remote help.



Far end connection is clearly the issue

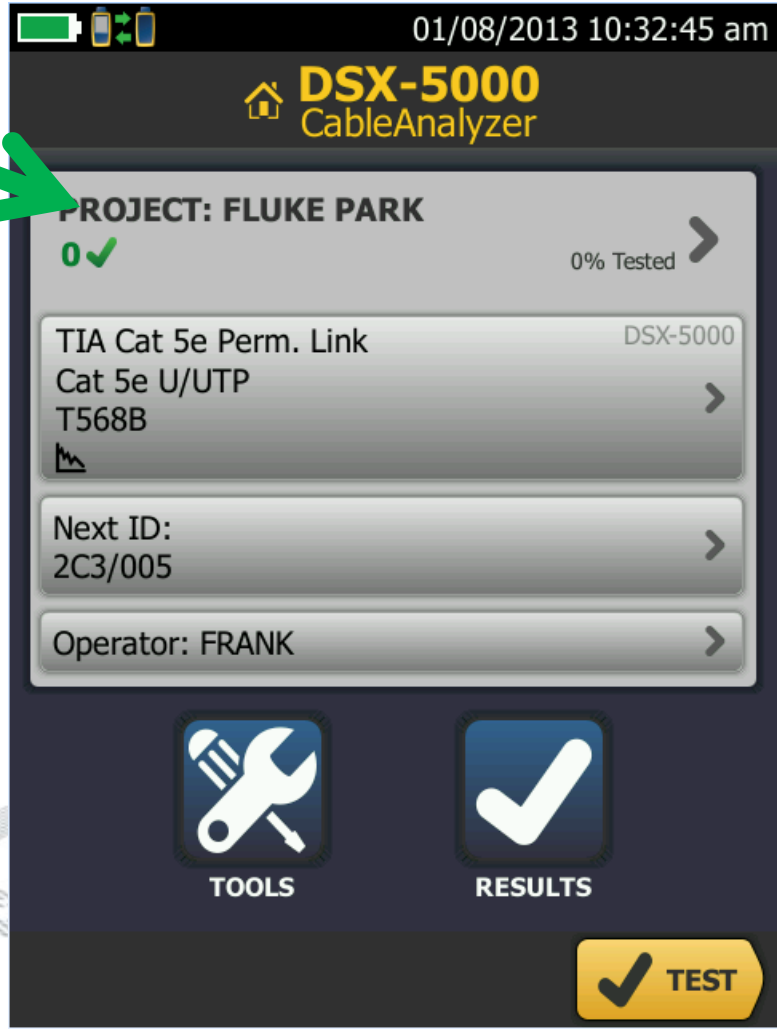
Powerful Troubleshooting capabilities are important! No matter how thoroughly the installation work is being executed, fails do occur. Locating faults can take up a lot time and jeopardize profit margins.

Import Results

- Imported data must have the same project configuration
- Insert USB drive into Versiv mainframe
  - Everett Mall
  - Cat 6 Perm. Link
  - Cat 5e UTP cable
  - Cable ID: 1A/096 to 1A/104
  - 50um OM4
  - OLTS + OTDR
  - Cable ID: 2B/142 to 2B/150

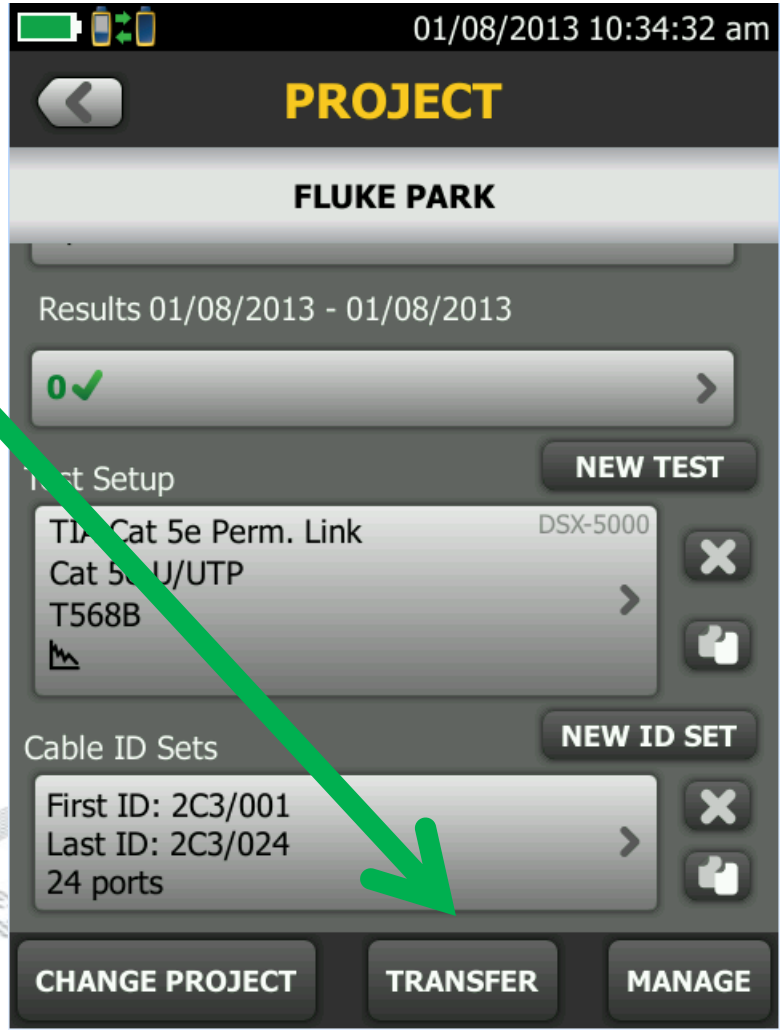
import Project

- Tap the project panel



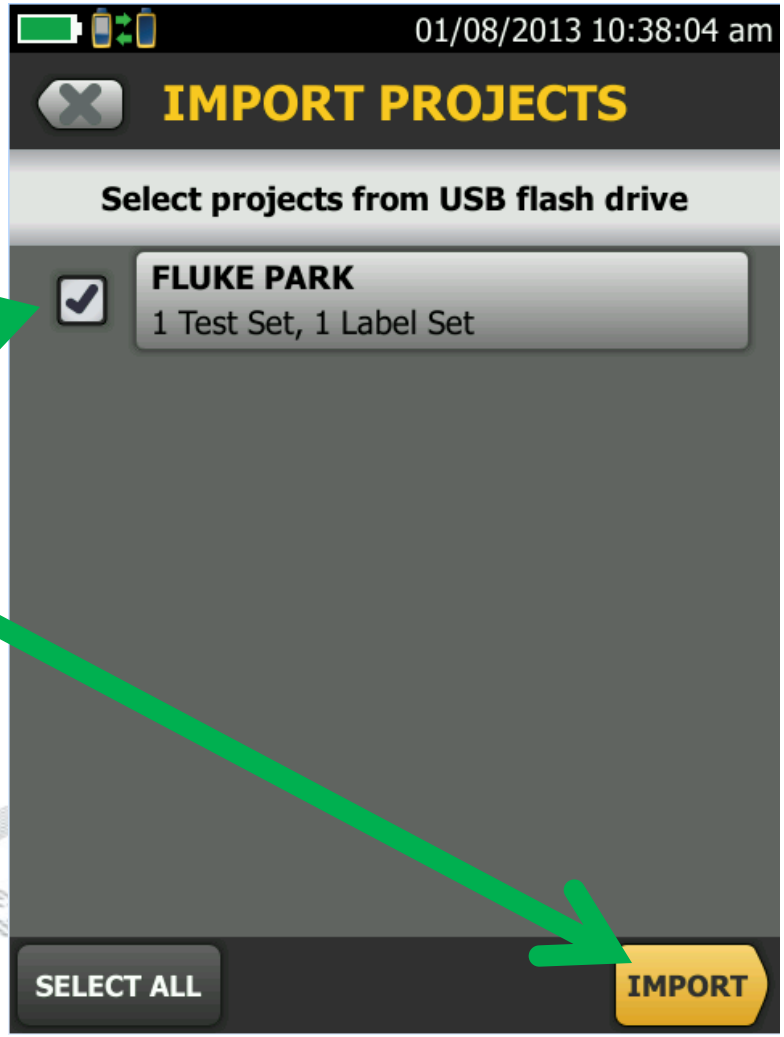
import Project

- Tap the project panel
- Tap TRANSFER



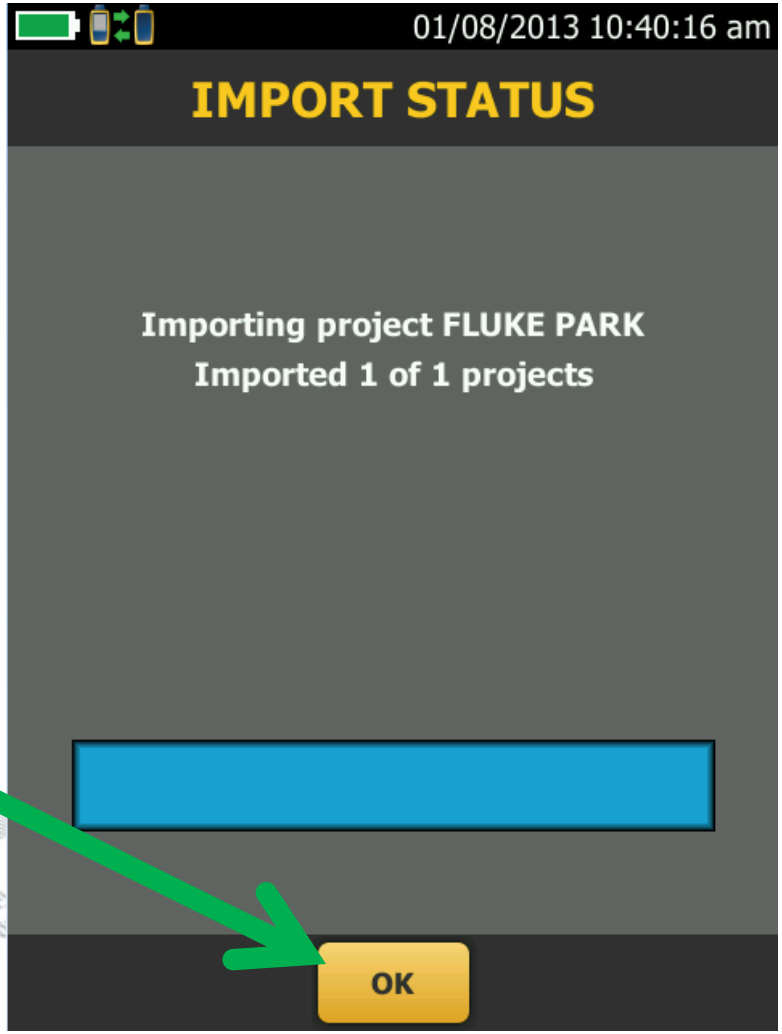
import Project

- Tap the project panel
- Tap TRANSFER
- Tap IMPORT
- Select the Project and Tap IMPORT



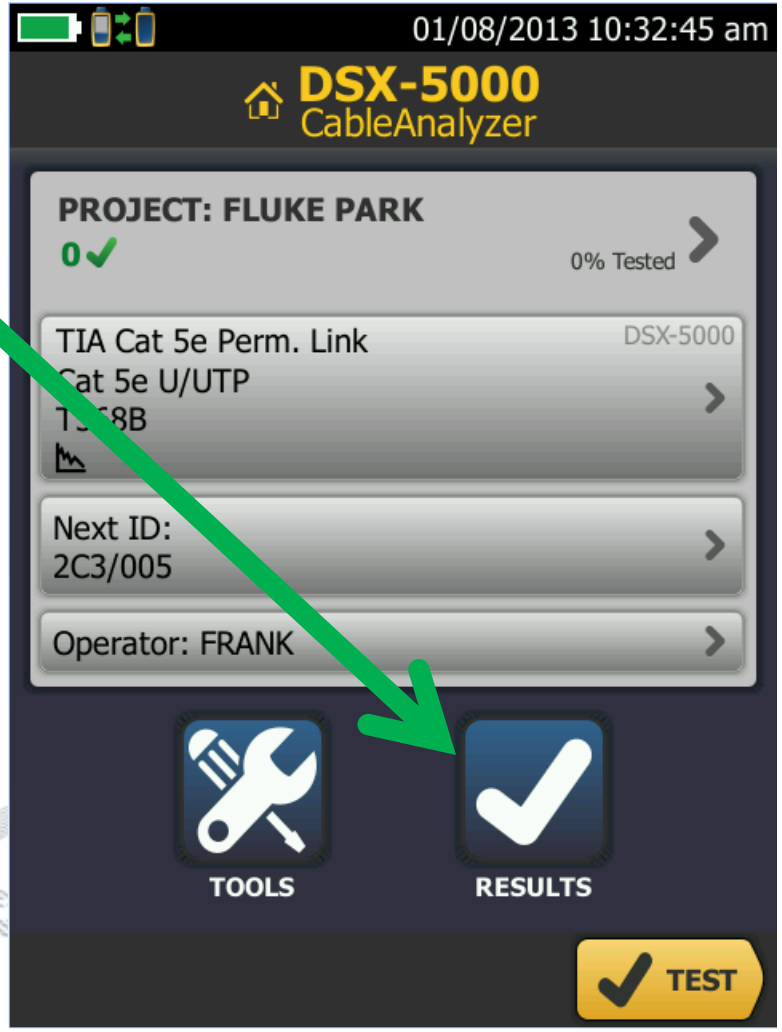
import Project

- Tap the project panel
- Tap TRANSFER
- Tap IMPORT
- Select the Project and Tap IMPORT
- Tap OK



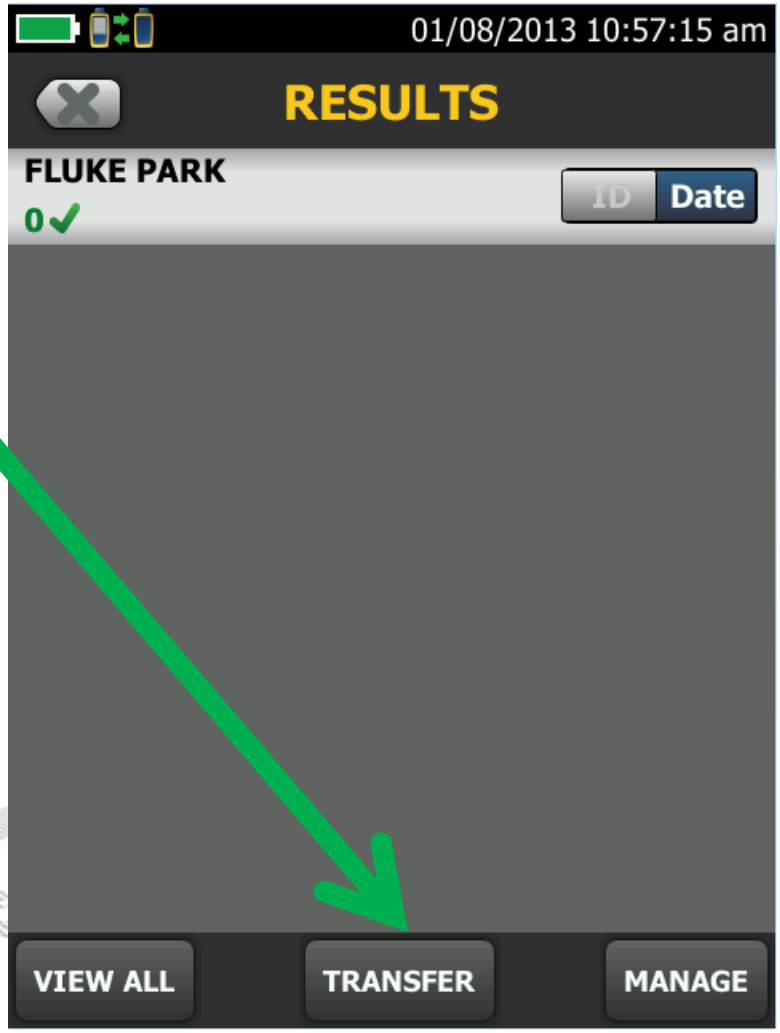
import results

- Tap RESULTS



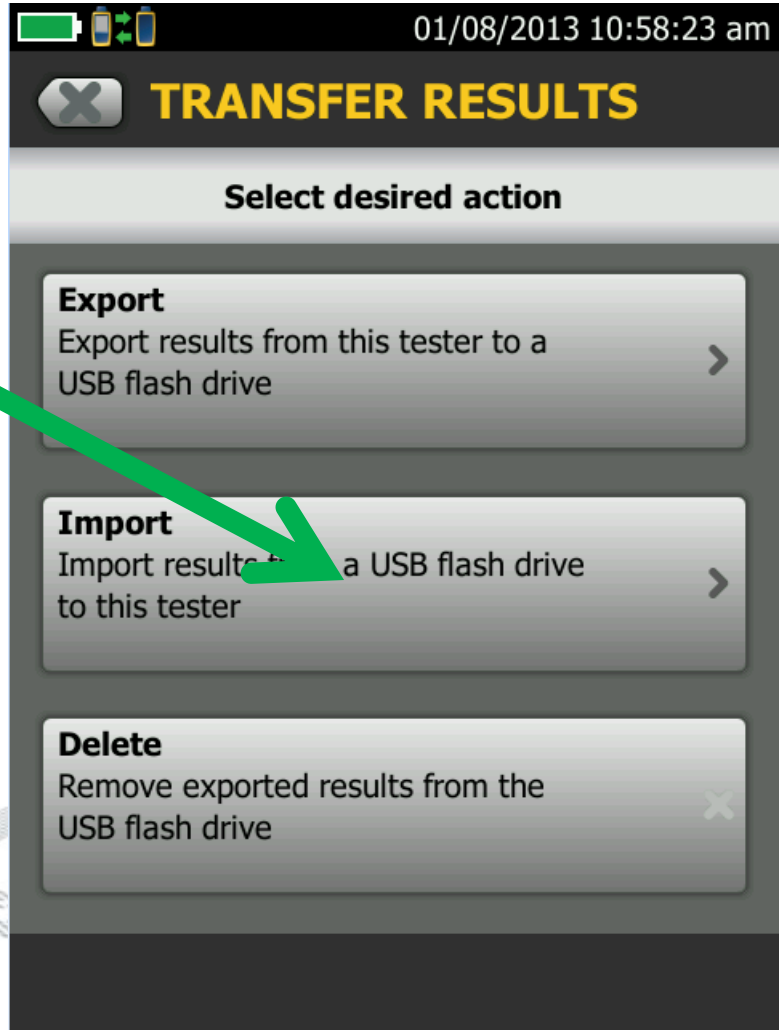
import results

- Tap RESULTS
- Tap TRANSFER



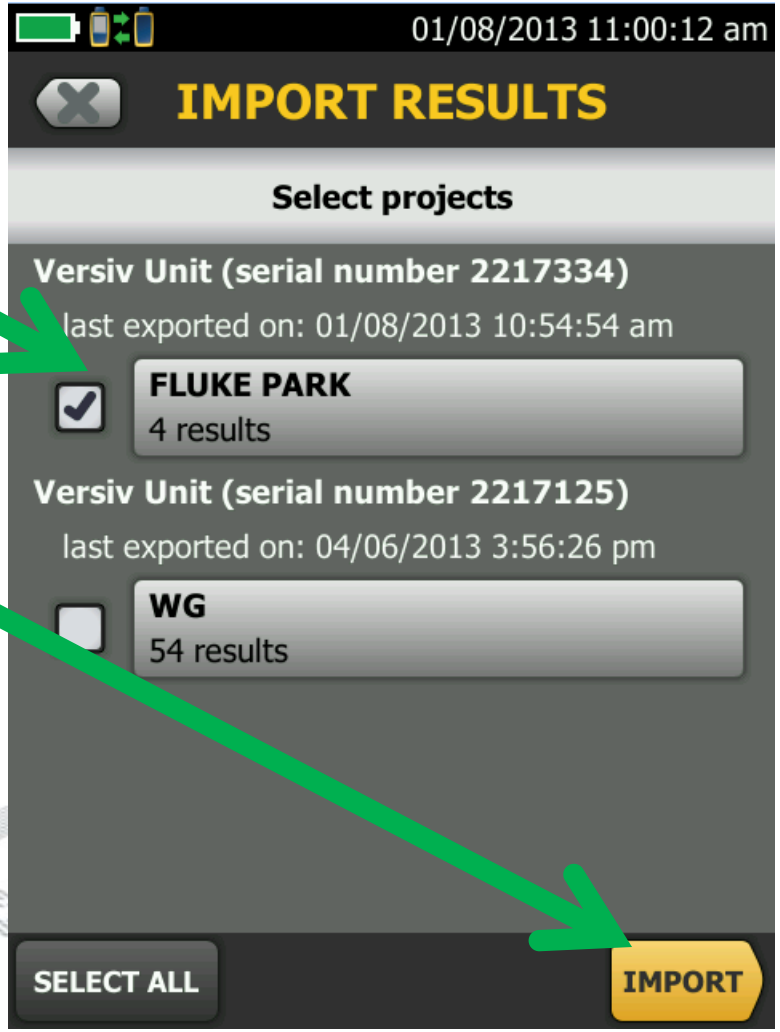
import results

- Tap RESULTS
- Tap TRANSFER
- Tap IMPORT



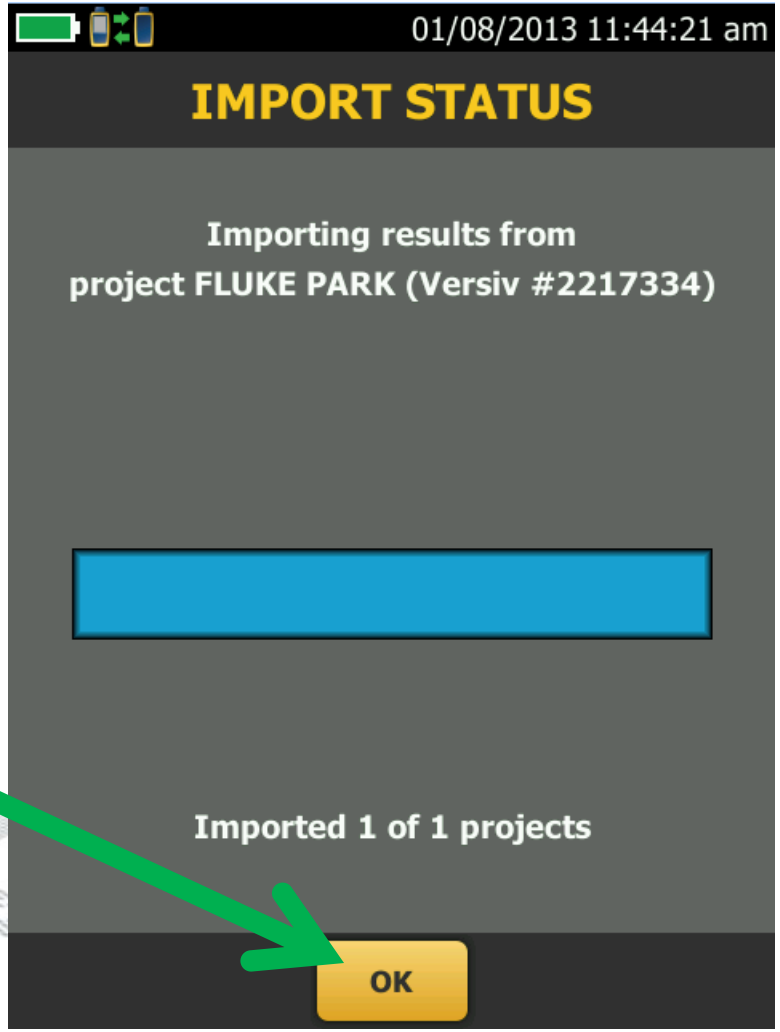
import results

- Tap RESULTS
- Tap TRANSFER
- Tap IMPORT
- Select the Results and Tap IMPORT



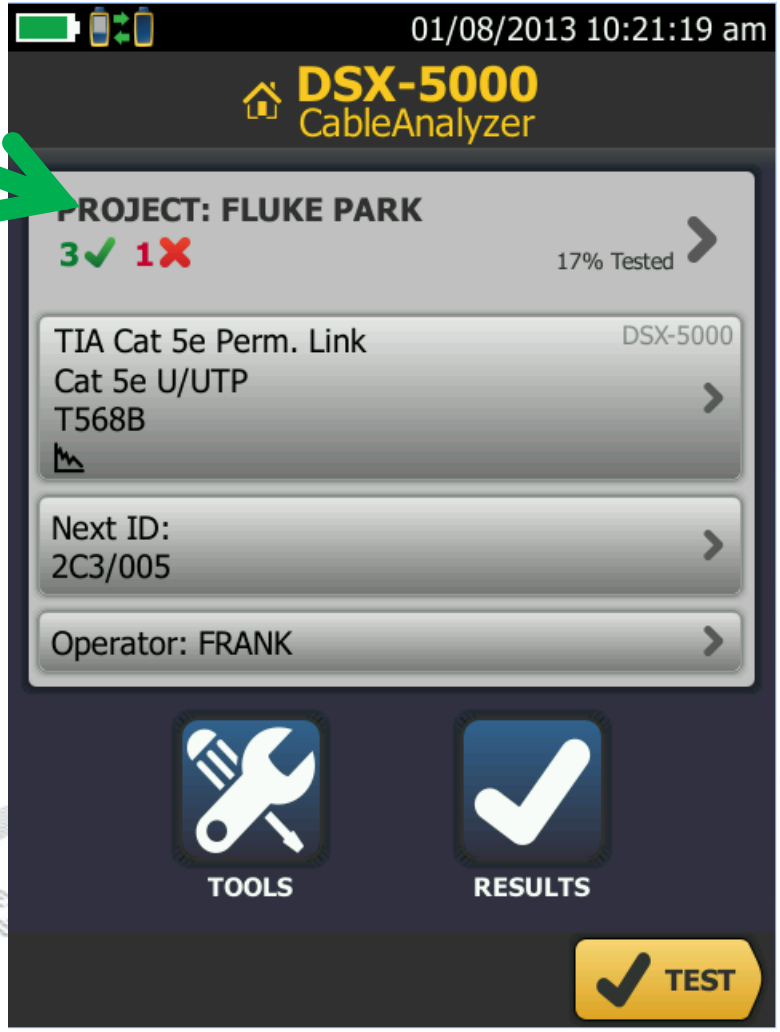
import results

- Tap RESULTS
- Tap TRANSFER
- Tap IMPORT
- Select the Results and Tap IMPORT
- Tap OK



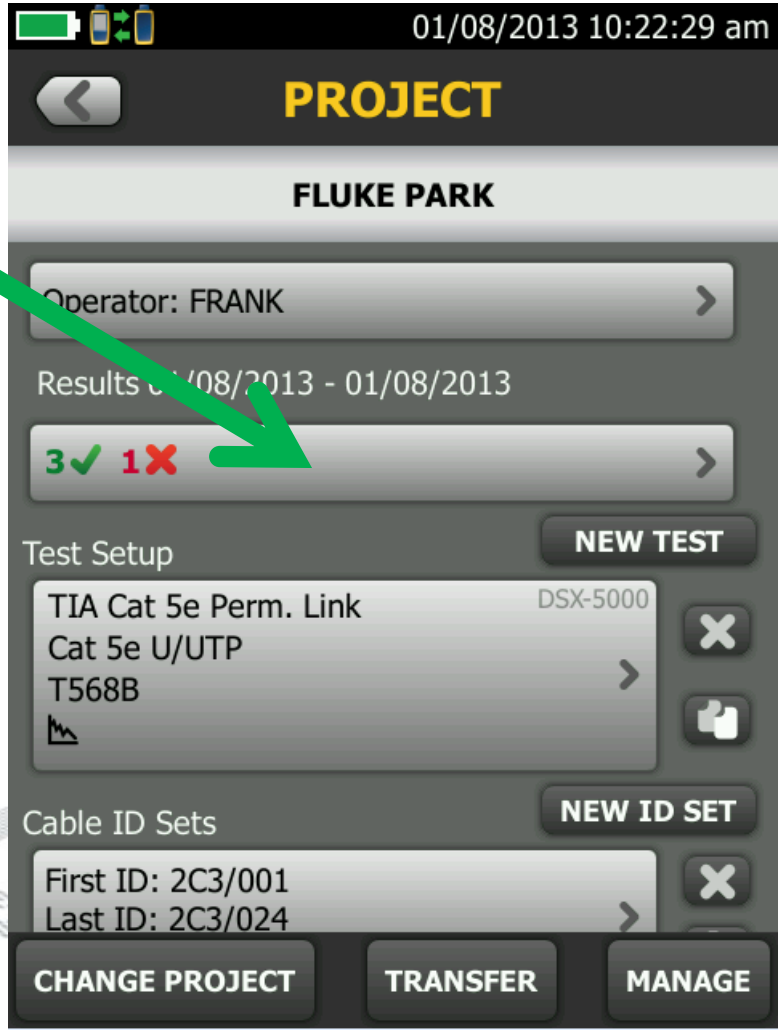
Fix it later

- Tap the project panel



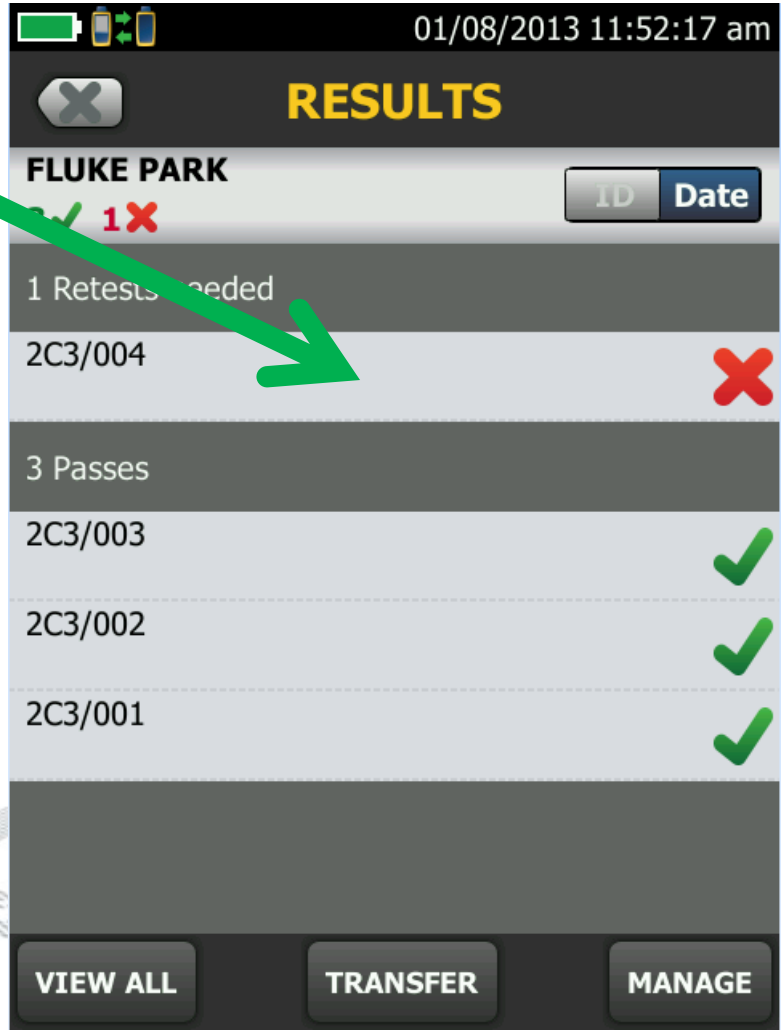
Fix it later

- Tap the project panel
- Tap Result



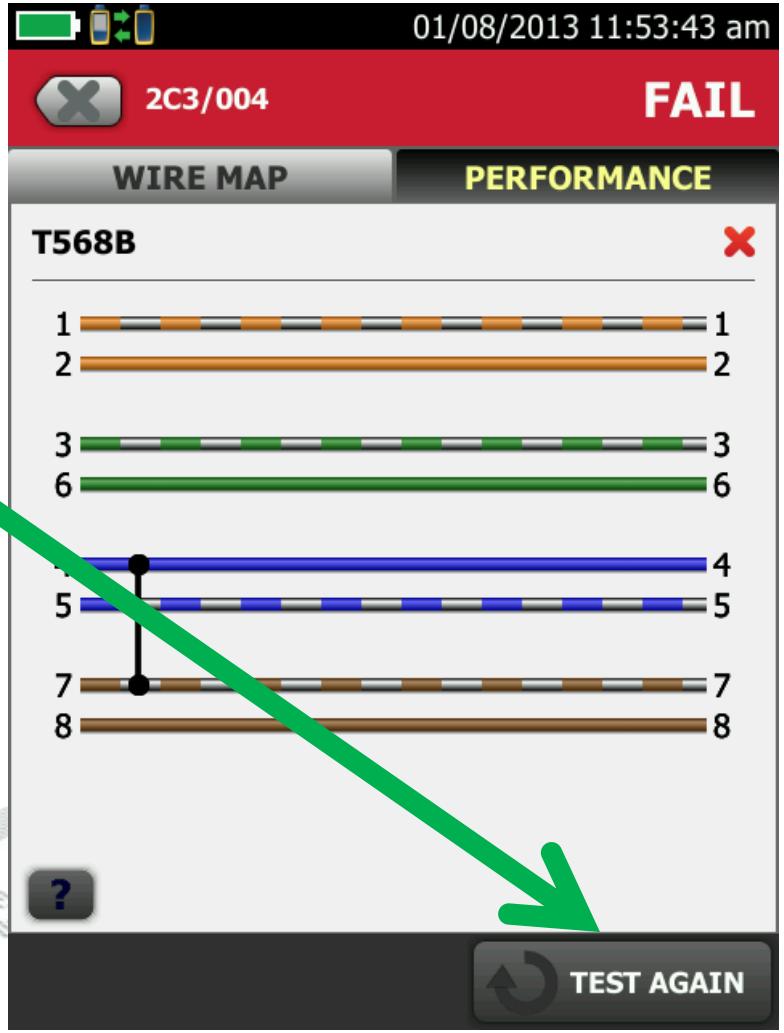
Fix it later

- Tap the project panel
- Tap Result
- Select the link to Retest



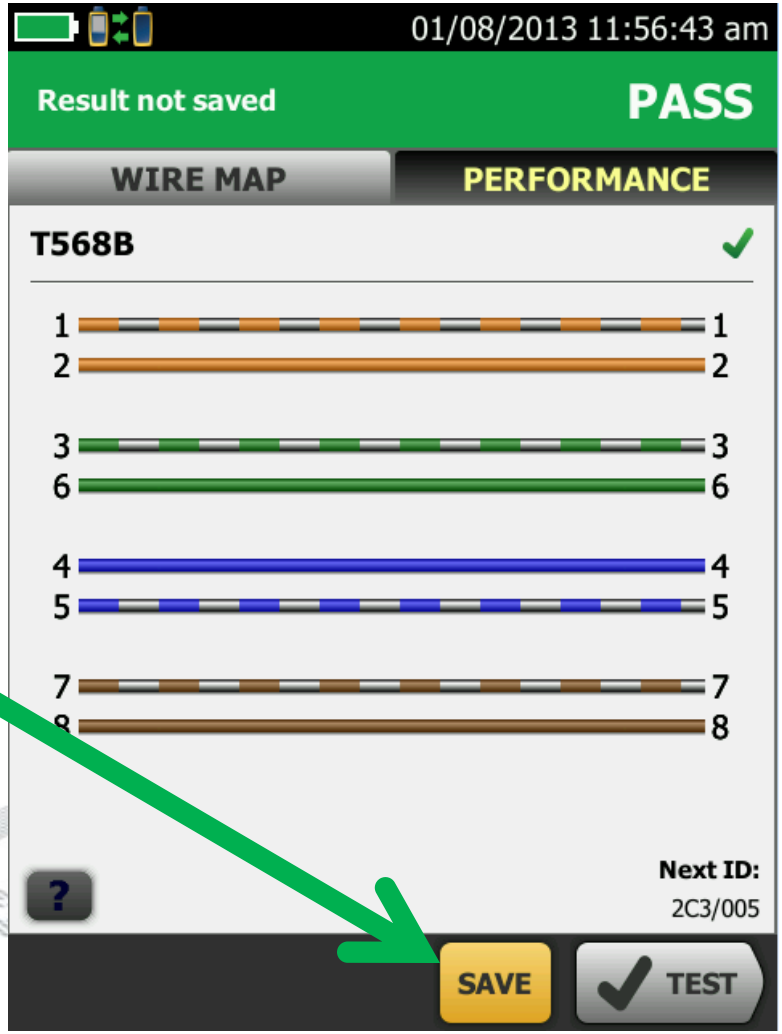
Fix it later

- Tap the project panel
- Tap Result
- Select the link to Retest
- Tap TEST AGAIN



Fix it later

- Tap the project panel
- Tap Result
- Select the link to Retest
- Tap TEST AGAIN
- Tap SAVE



Fiber Testing

Certifiber pro introduction

Versiv CertiFiber Pro OLTS

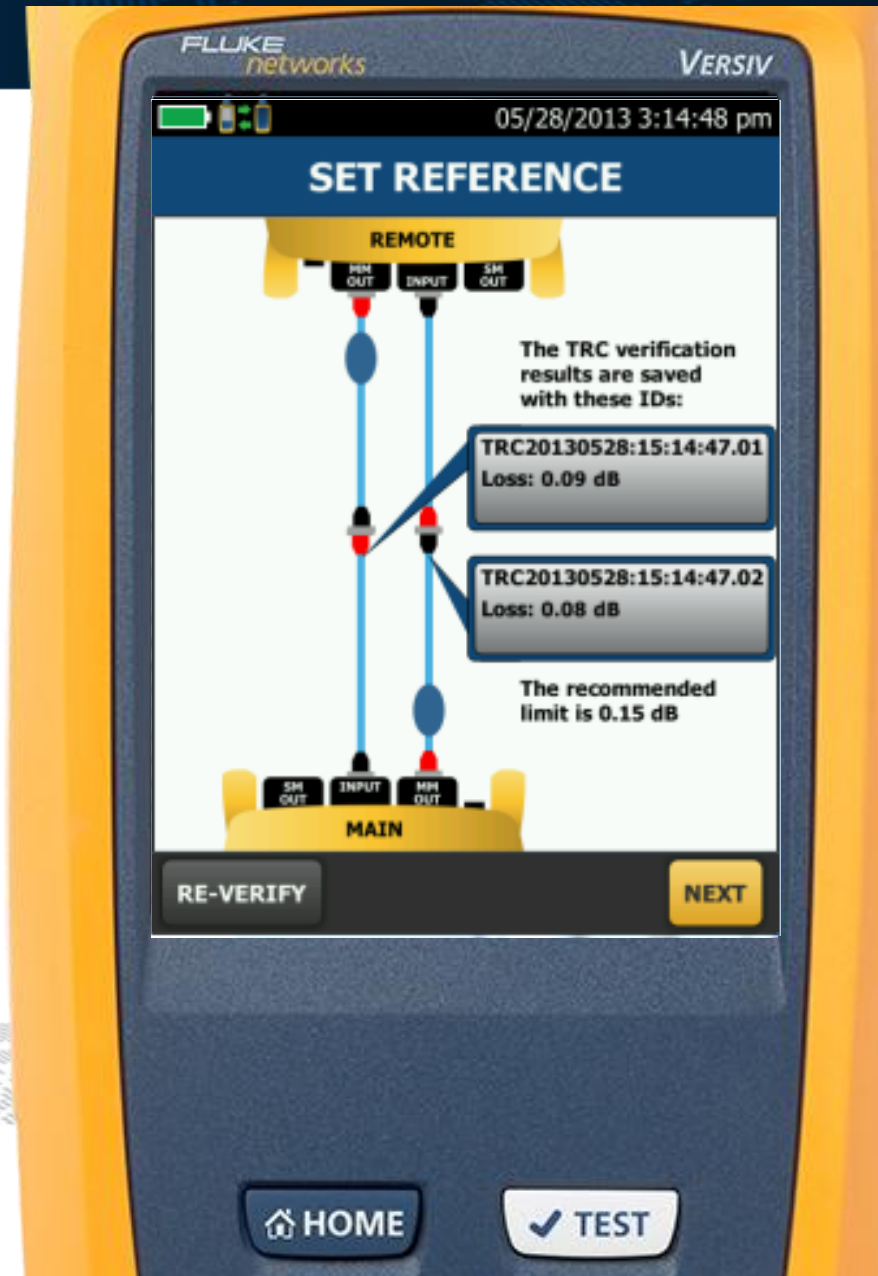
- Built around the Taptive™ user interface -includes set reference wizard
- Leverages ProjX management system to manage jobs, testers, and test files
- Results management with LinkWare 8
- 4X Faster than the fastest OLTS with 3 second autotest
- Encircled Flux Compliant off the shelf

The fastest, easiest OLTS available, and it is Encircled Flux compliant off the shelf!

Setting the Fiber Reference

No More Mistakes

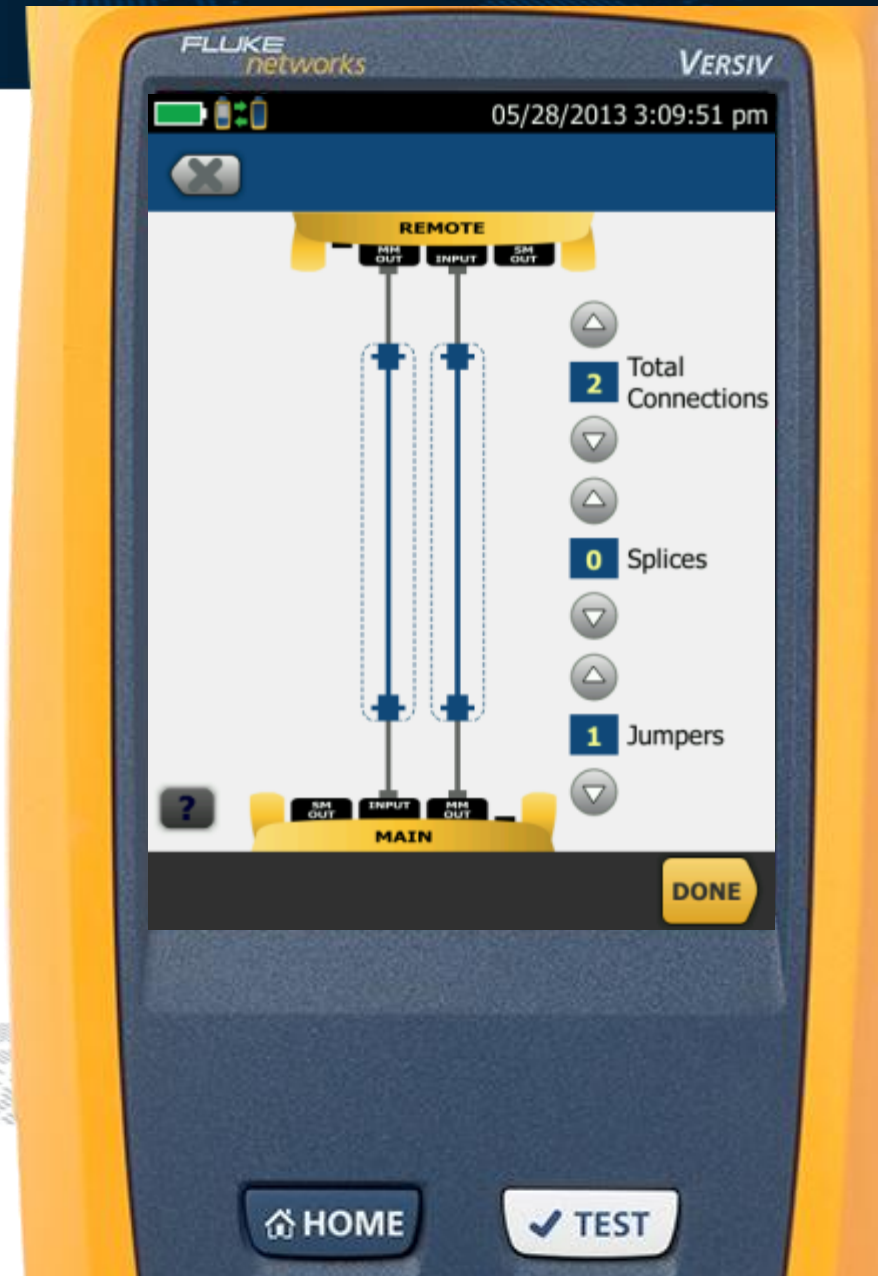
- Shows you how to set a fiber reference.
- Verifies the test reference cords.
- Saves the test reference cords verification.



Loss budget Setting

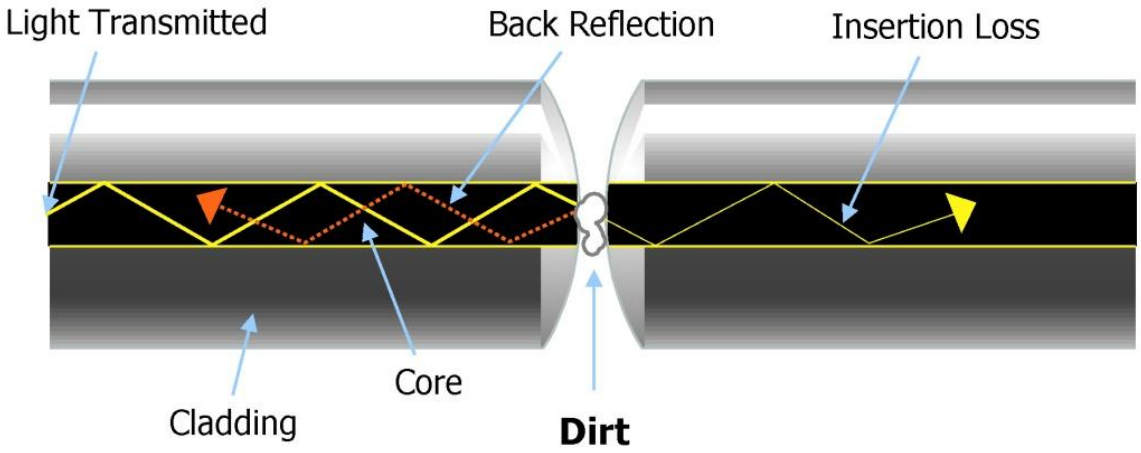
No More Mistakes

- Simple Loss Budget Setting



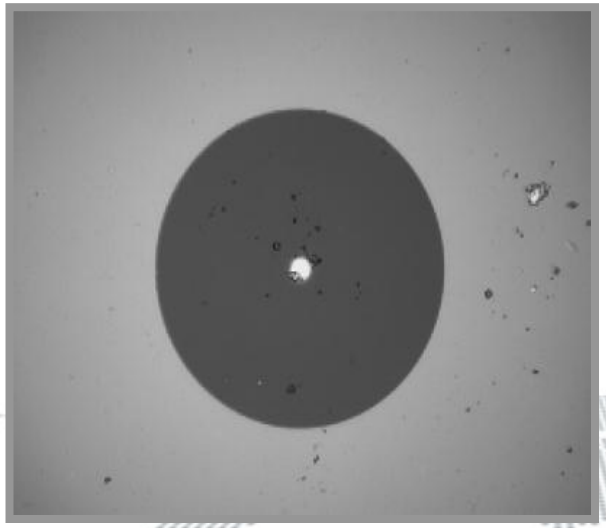
Fiber inspection & cleaning

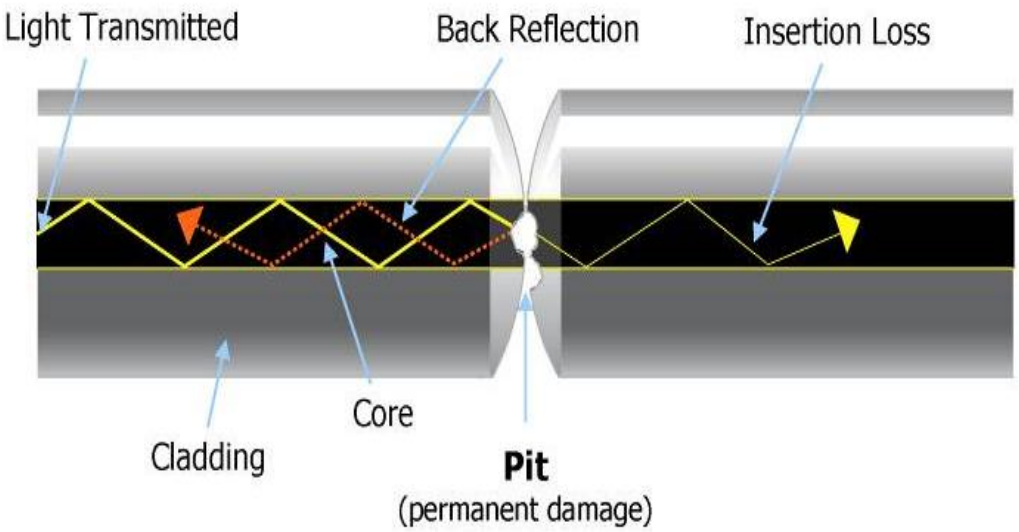
#1 Problem: Dirt!



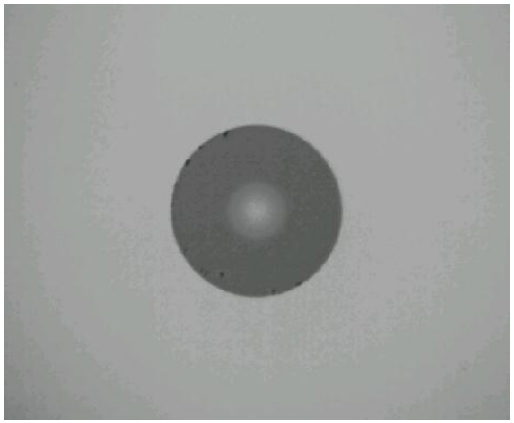
Why Bother Inspecting End Faces?

- To Prevent Damage
  - Debris will embed in glass when contaminated connectors are mated
  - When embedded debris is removed, pit remains in glass as permanent damage
  - Pits cause signal loss

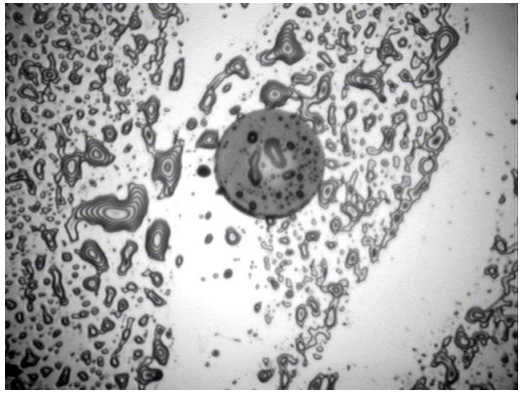




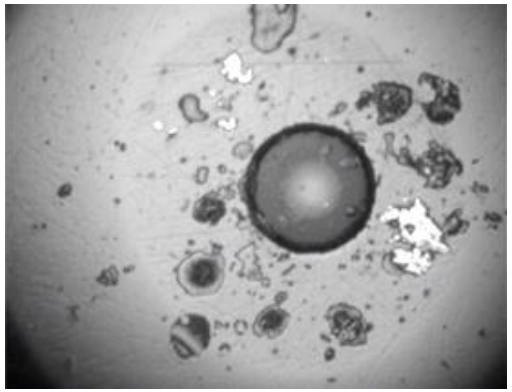
Inspection images



Good Connector



Fingerprint
on Connector



Dirty Connector

Real images as captured from the Fluke networks Fiber Inspector™

COMMON MISCONCEPTIONS

- Protective caps keep end-faces clean - NO
  - Caps are a source of contamination: mold-release compound from manufacturing
  - End-faces are NOT clean when they come pre-terminated from the factory in a sealed bag

- Canned air will blast away dirt - NO
  - Is ineffective on smaller, static-charged particles
  - Blows larger particles around rather than removing them
  - Is ineffective on oils and compound contaminants

- Isopropyl alcohol (IPA) is the best solvent – NO
  - IPA does not work on non-polar contaminants
    - Pulling lubricants, buffer gels, etc.
  - IPA leaves a residue when not used properly

Bicsi

Cleaning with IBC Cleaners

- IBC™ OneClick Cleaners for cleaning different end faces/connectors — no training required
  - 1.25 mm LC and MU connector and end faces
  - 2.5 mm SC, ST, FC, E2000 connector and end faces
  - MPO/MTP connector and end faces
- Cleans Ports on devices and patch panels as well as Cords ….with an adapter
- Dry cleaning is less efficient for cleaning grease (dried skin oil) than wet cleaning with a solvent and swabs/cleaning cubes

CLEANING WITH SOLVENT PEN

- Start with a clean, lint-free wiping surface every time
  - Material left exposed accumulates ambient dust
  - Material used once should not be used again
- Use a minimal amount of specialized solvent
  - Important that solvent be removed after cleaning
  - Move the end-face from the wet spot into a dry zone
    - Cleaning with a saturated wipe will not fully remove solvent
    - Cleaning with a dry wipe will not dissolve contaminants and can generate static, attracting dust
- Proper handling and motion
  - Apply gentle pressure with soft backing behind cleaning surface
  - Hold end-face perpendicular to cleaning surface
  - No figure-8 motion as that's for polishing only
- Inspect both end-faces of any connection before insertion
  - If the first cleaning was not sufficient, then clean again until all contamination is removed

BICSI

Probe Tips

- Examine the probe tips
  - “FS” tip is for FC and SC bulkheads. Note that it is asymmetrical
  - LC tip for bulkheads
  - 2.5mm tip for SC/ST/FC patch cords
  - 1.25mm tip for LC patch cords
  - And many more available

Bulkhead FC/SC

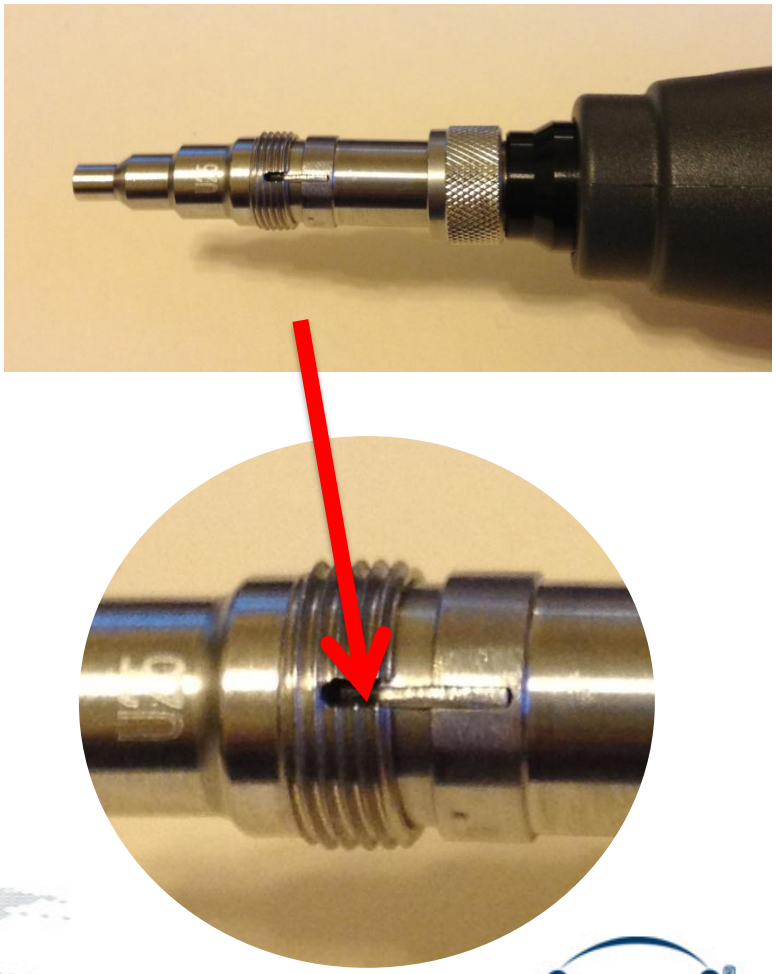
Bulkhead LC

Patch cord 2.5mm

Patch cord 1.25mm

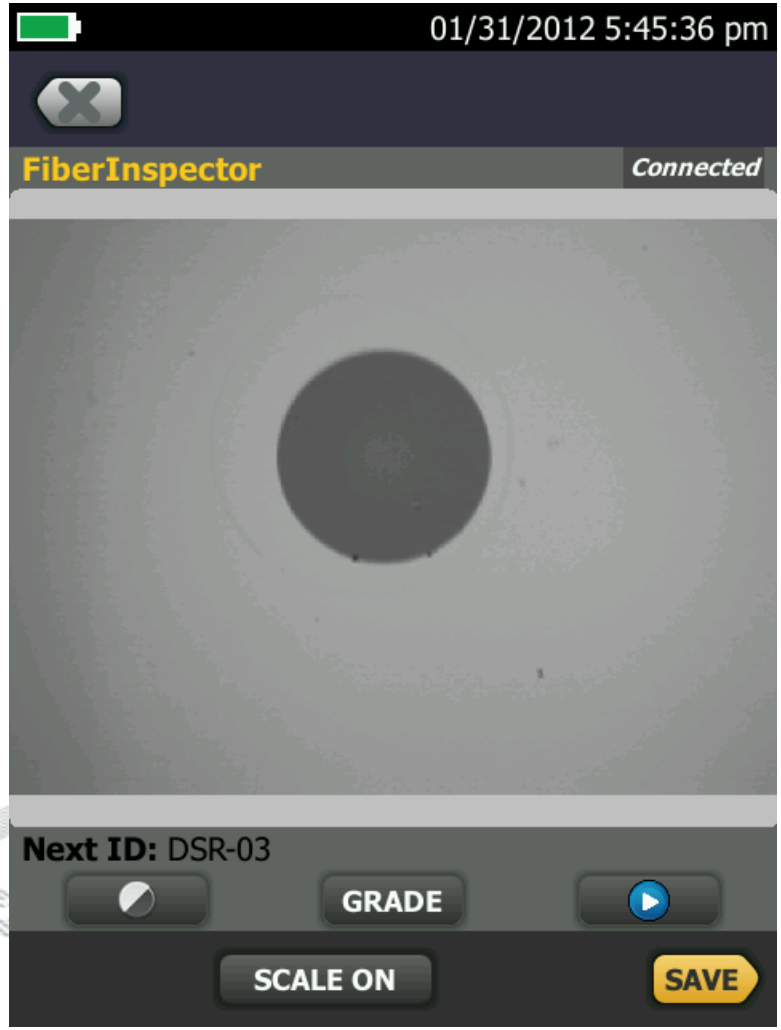
Probe Tips

- Attach the “2.5mm” tip to the probe
- Note that all the tips have a key
- Hold the tip in position while tightening the nut



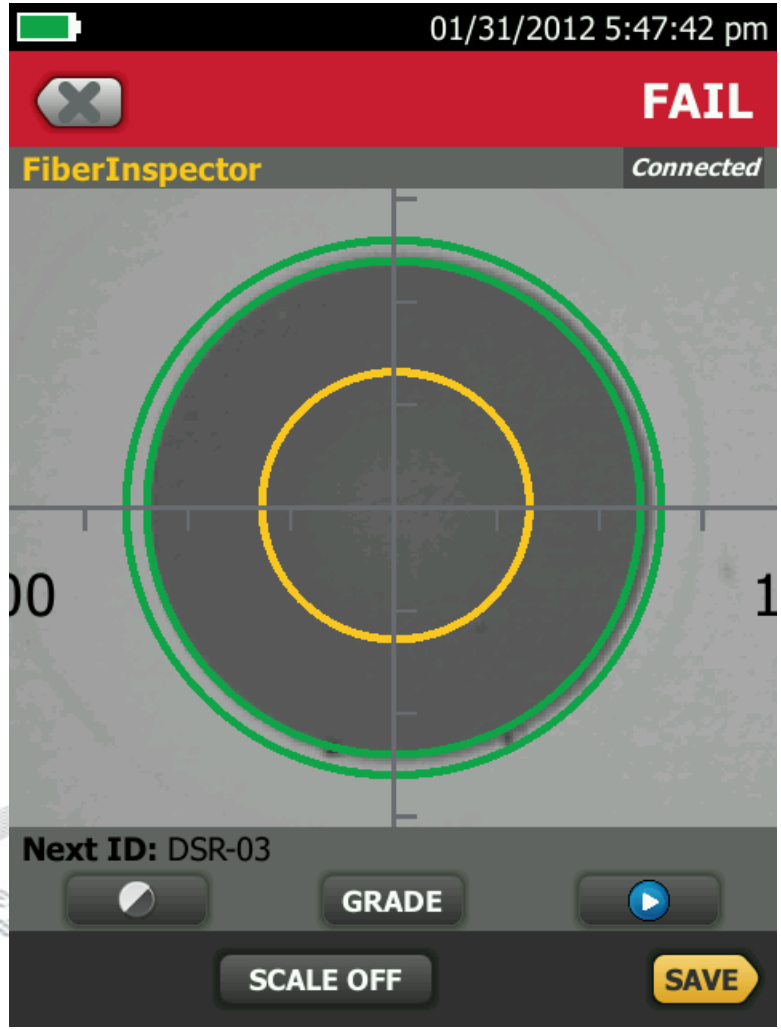
Fiber Inspection

- Tap TOOLS
- Tap FiberInspector
- Focus the image with the knob on the probe
- Press  to “pause” or enter the “still” mode



Fiber Inspection

- Tap SCALE ON
- Tap NEXT SCALE
- Drag fiber to center of scales
- Zoom on image
- Tap GRADE
- Tap GRADE again

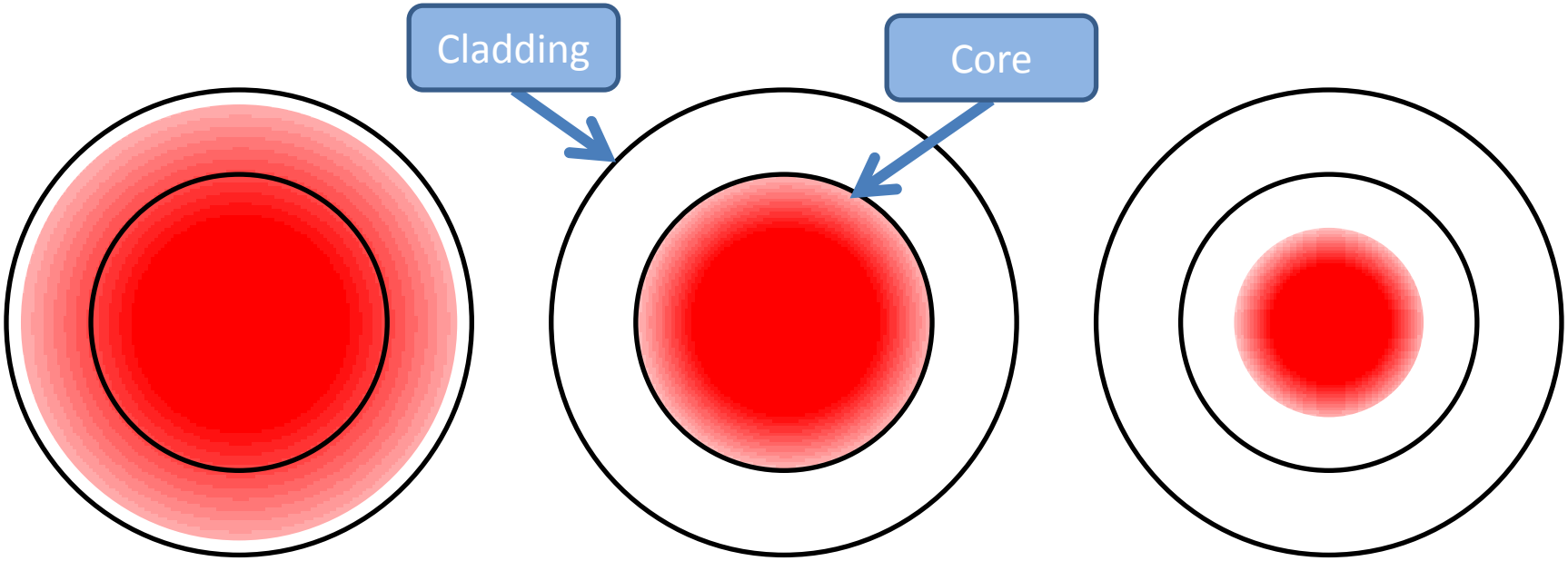


Encircled Flux

Ever had an argument about which tester is correct?

What is a launch condition?

- The light source's launch condition determines how and where the light is distributed within the fiber.



Source 1
Over filled

Source 2
Encircled Flux Compliant

Source 3 Restricted or
Under filled

What is encircled flux?

- Measured and defined at the end of the test cord
- It is the measurement of light intensity distribution
  - From the center of the fiber to the edge of the fiber.
- The radial cumulative intensity is divided by total intensity.
- The resulting graph must fit within the templates defined by TIA and IEC

Simplify summarize to dumb down.
40% to 10%

$$EF(r) = \frac{\int_0^r xI(x)dx}{\int_0^R xI(x)dx}$$

TIA-TSB-4979

LOOK OUT FOR TIA-TSB-4979

- Practical Considerations for Implementation of Multimode Launch Conditions in the Field

- Currently in draft

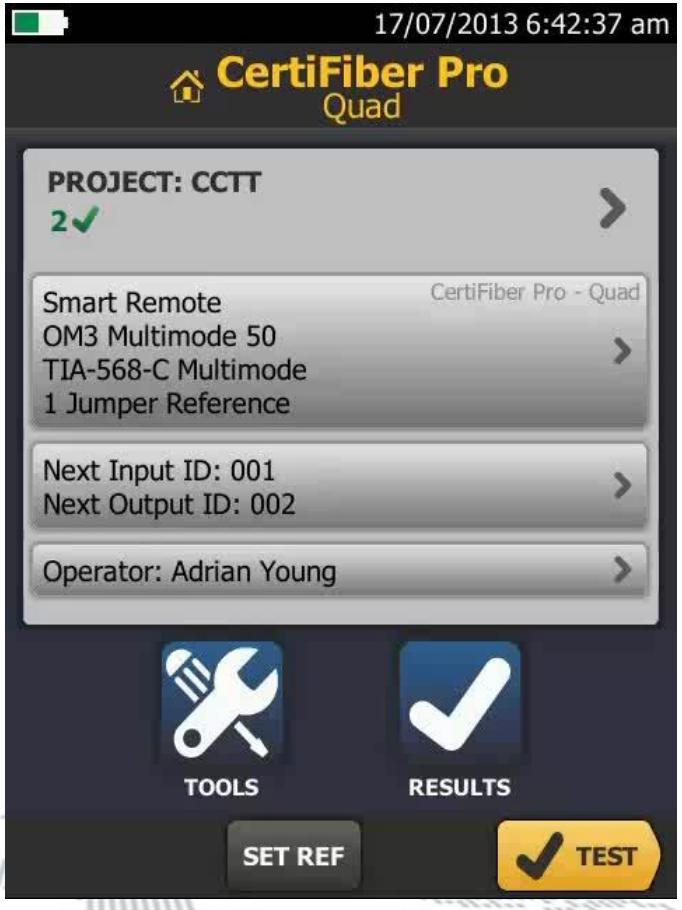
- TSB = Telecommunications System Bulletin
  - Not an official standard
  - More like a memo, a bit of advice
  - Chances are will end up in ANSI/TIA-568-D.3
- Helps users understand Encircled Flux and the options for dealing with it

Certifiber pro

- CertiFiber Pro is EF compliant with FNET EF-TRCs
- New EF-TRCs required to meet EF
  - Required by cabling mfg.
  - Patent Pending
  - As seen in TIA-TSB-4979!

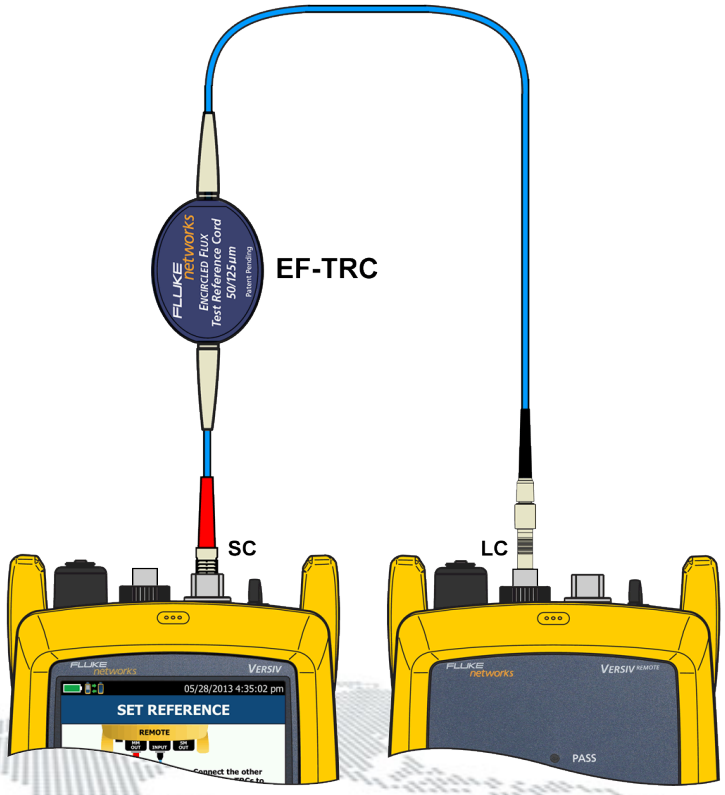
Set a reference

- The wizard guides you through the procedure



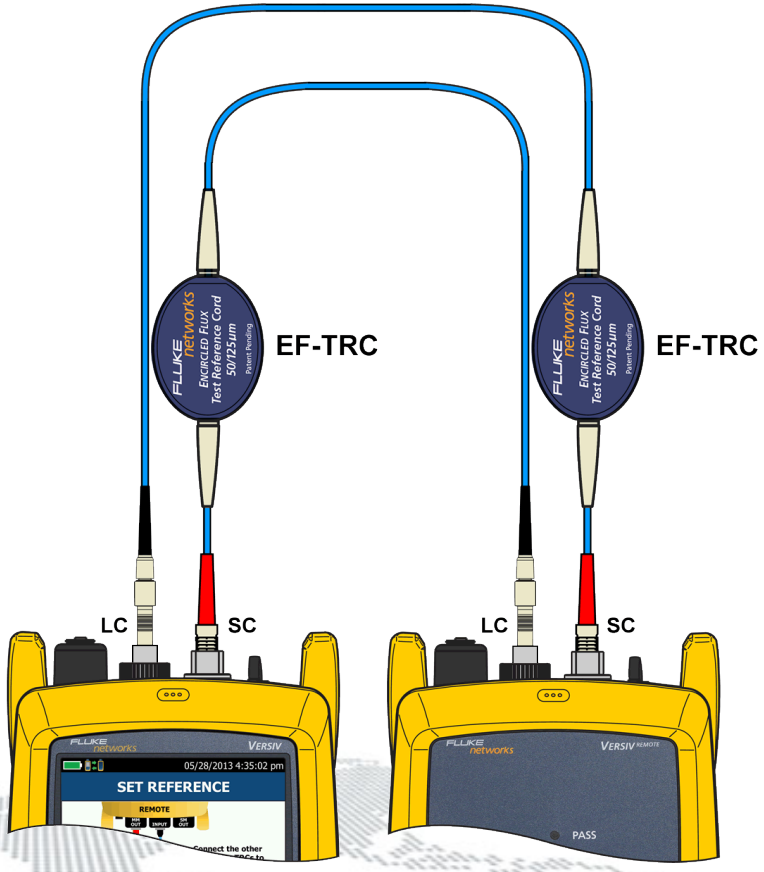
Output to inPut

2.0 m (6.6 ft)
Encircled Flux Test Reference Cords
(EF-TRCs)
≤0.10 dB



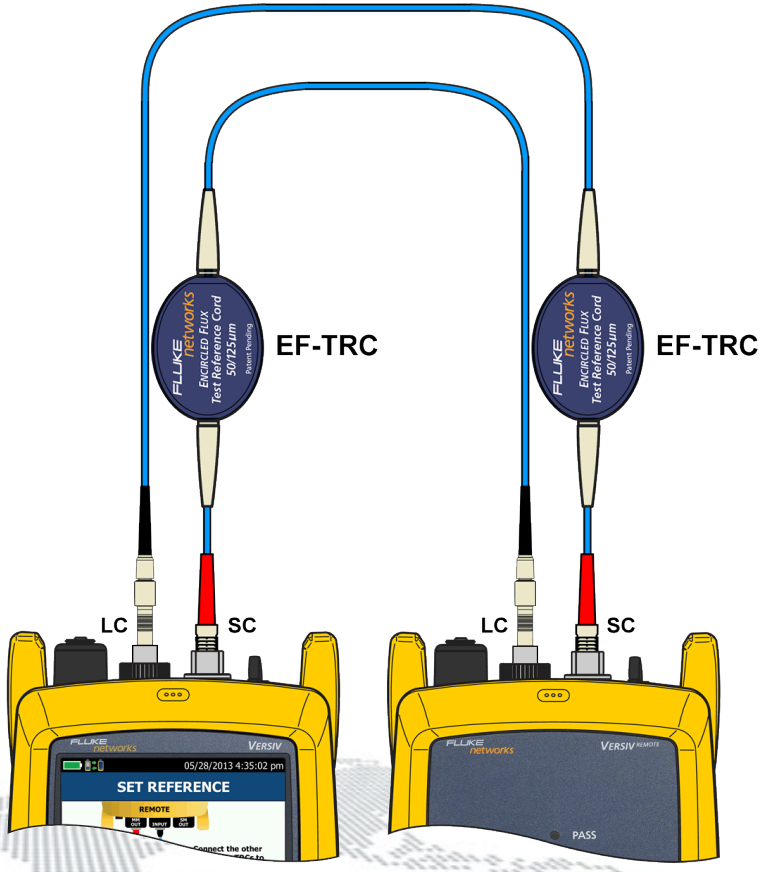
Input to output

2.0 m (6.6 ft)
Encircled Flux Test Reference Cords
(EF-TRCs)
≤0.10 dB

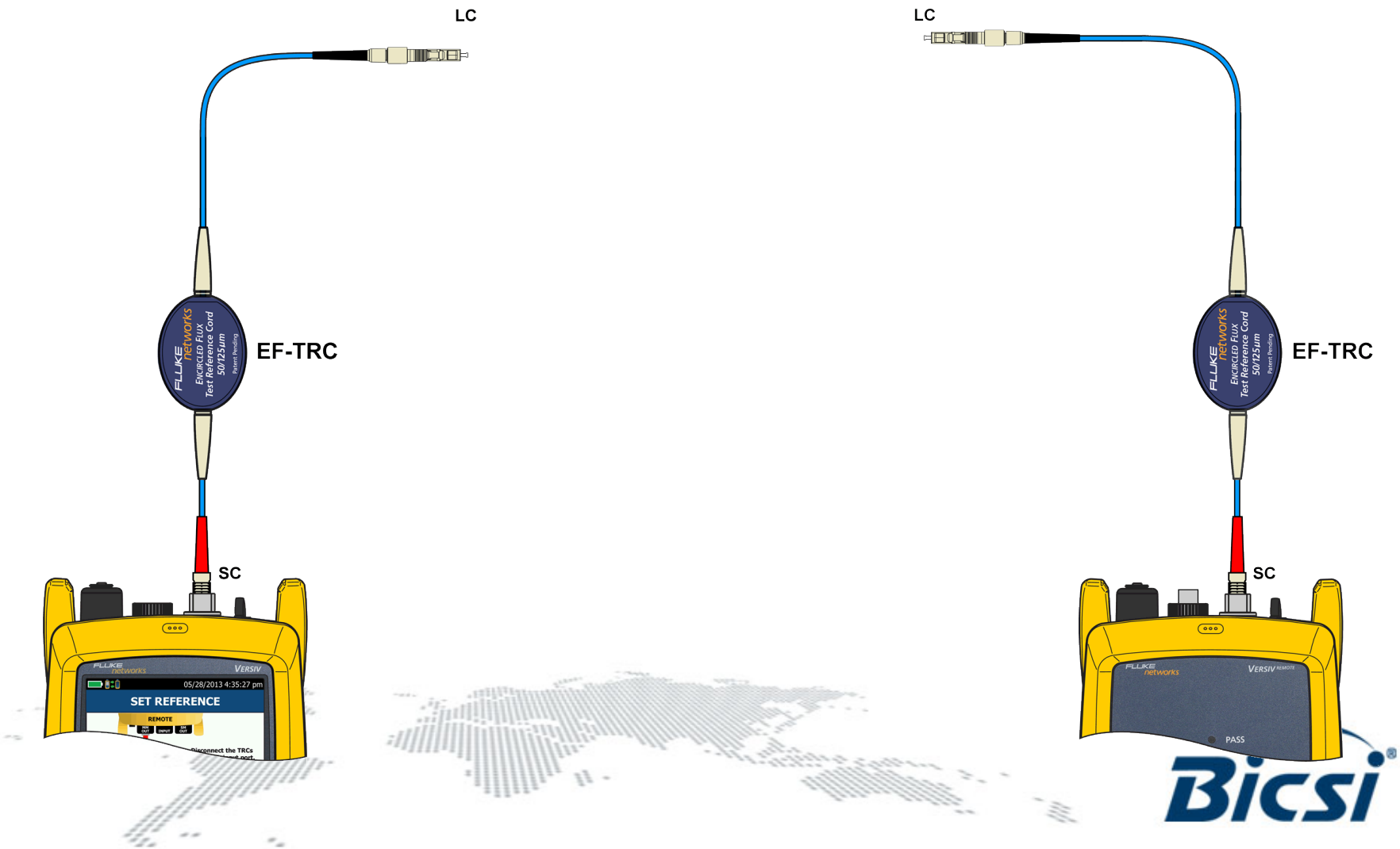


Set a reference

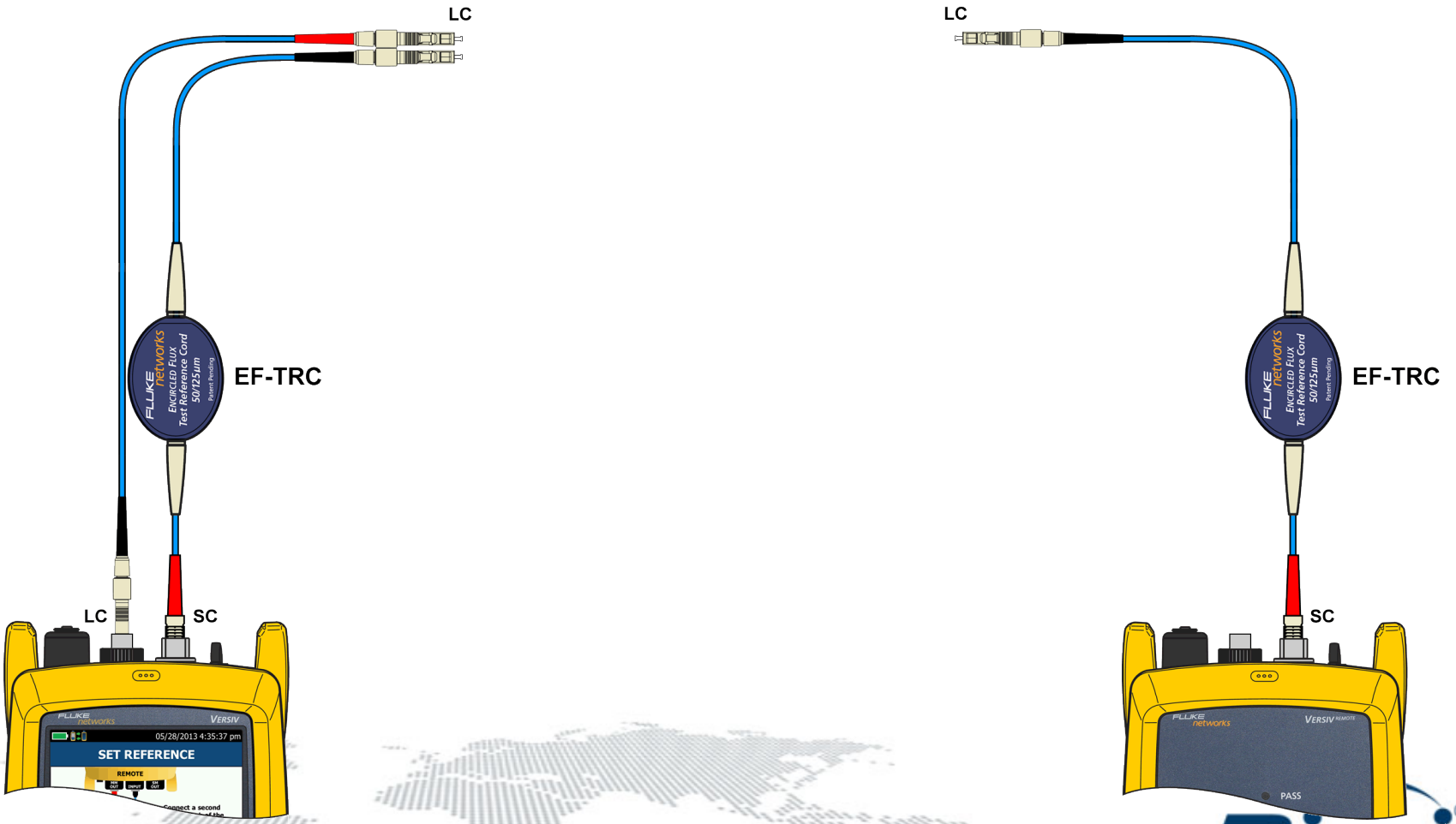
2.0 m (6.6 ft)
Encircled Flux Test Reference Cords
(EF-TRCs)
≤0.10 dB



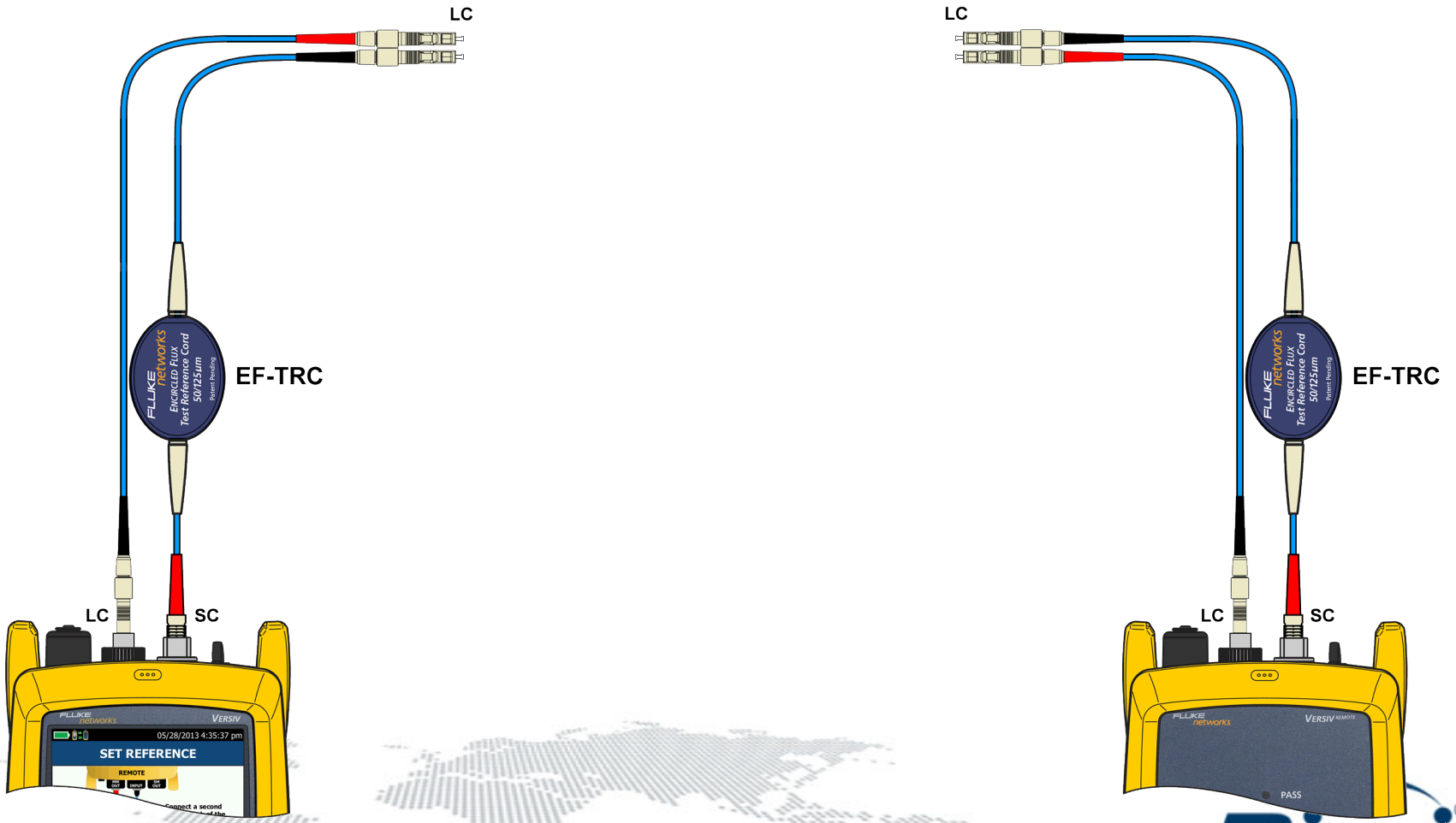
Disconnect from input ports only



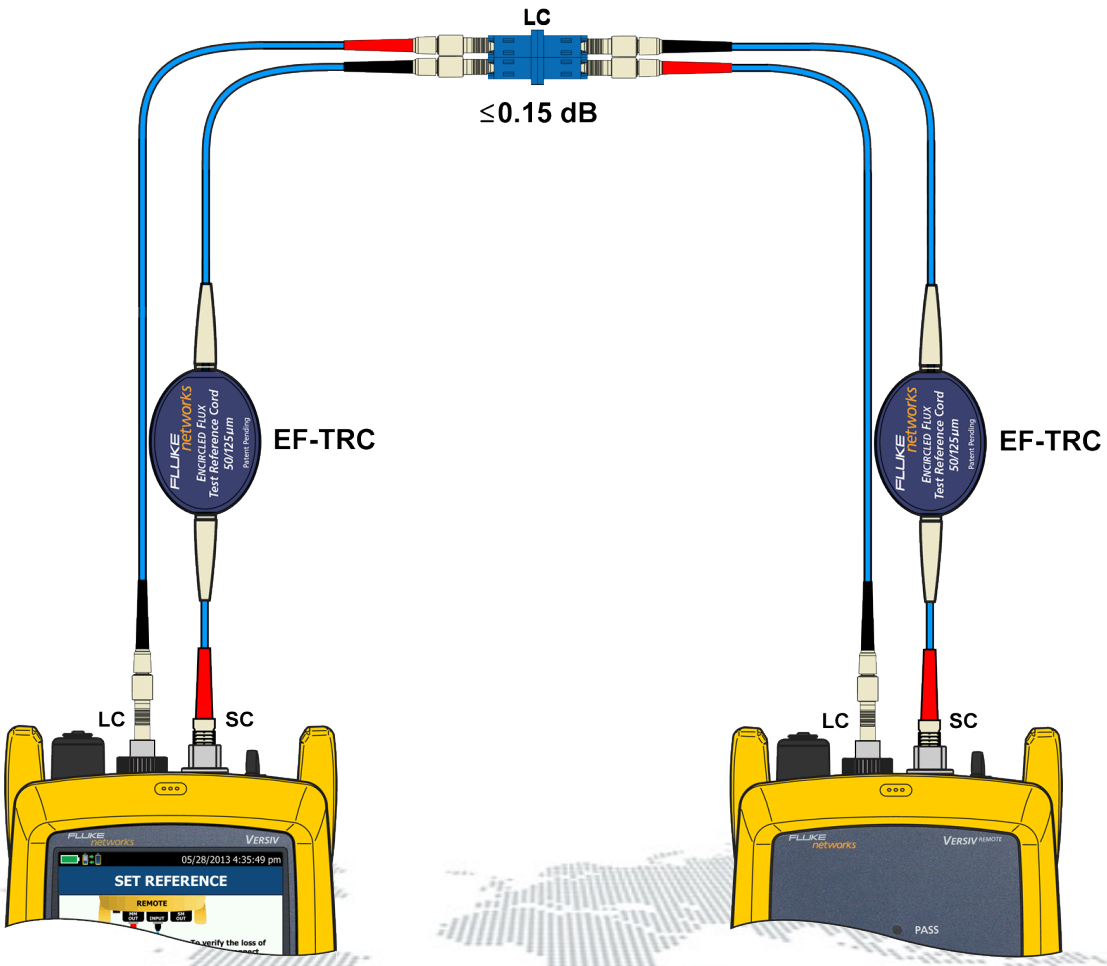
Connect known good TRC to main



Connect known good TRC to remote

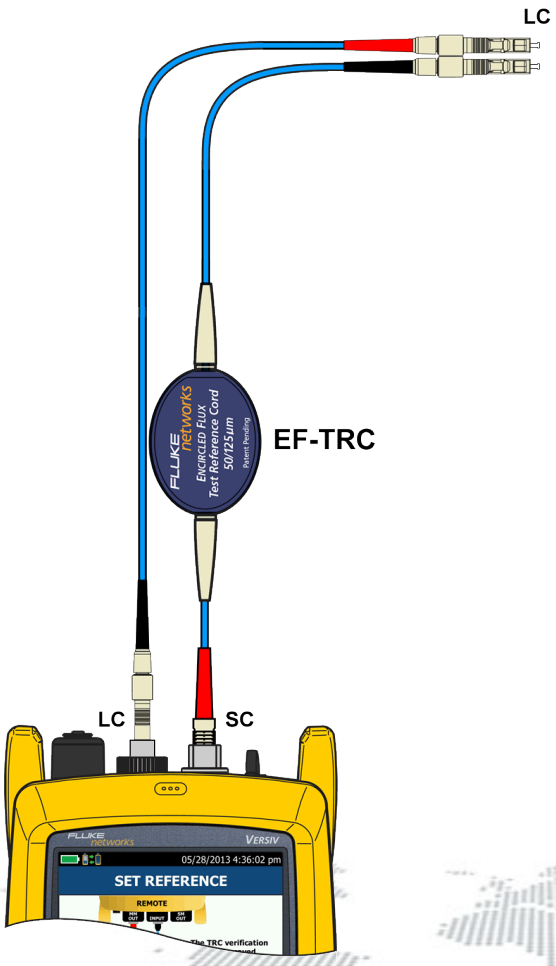


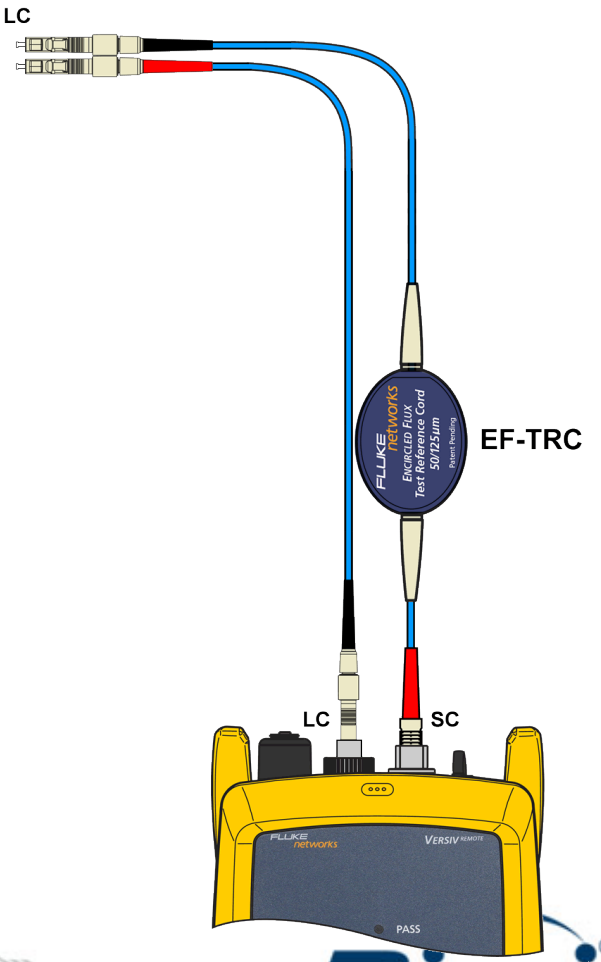
Verify TRC



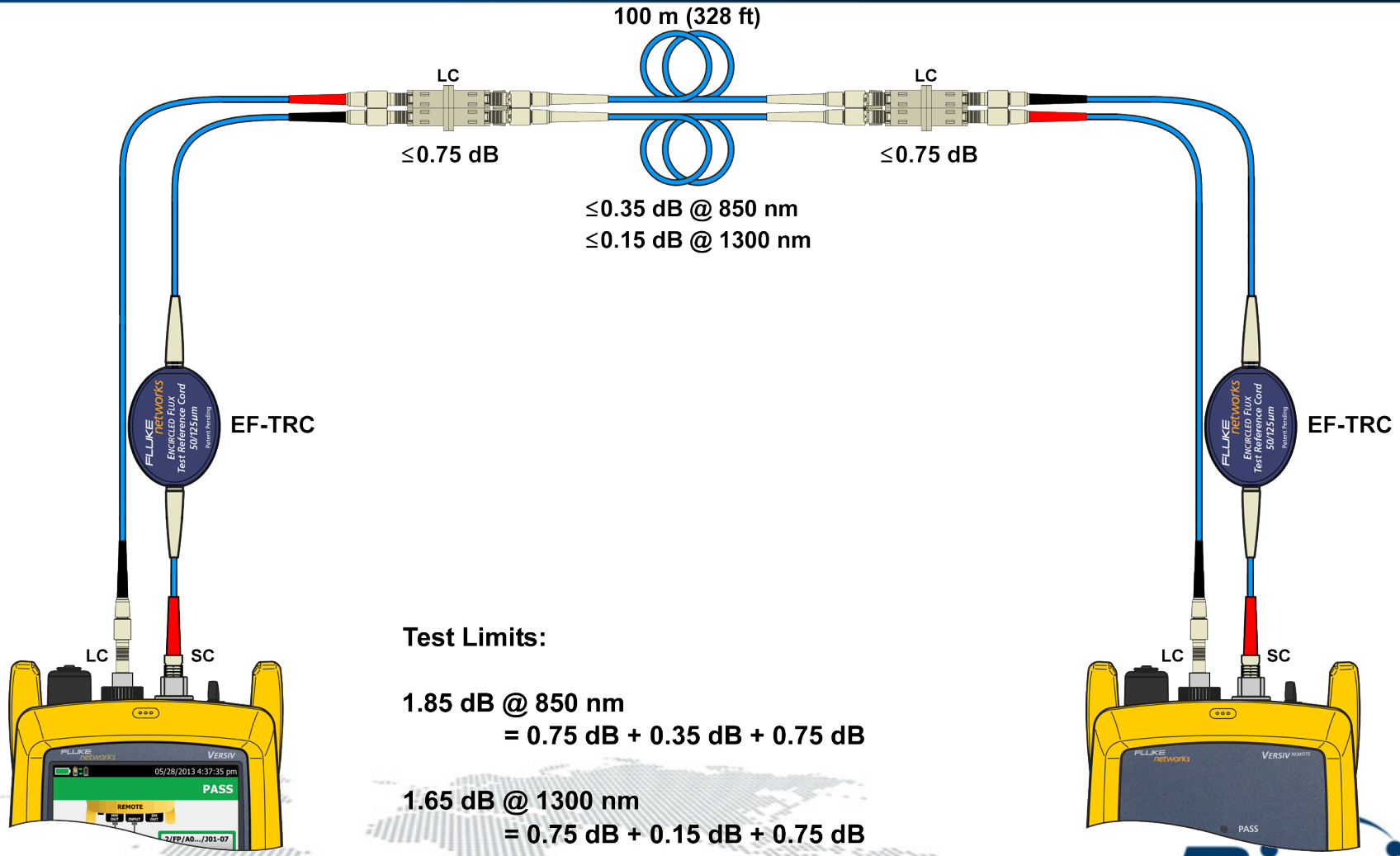
Multimode ≤ 0.15 dB
Singlemode ≤ 0.25 dB

Disconnect


LC
EF-TRC
LC
SC
FLUKE networks
ENCIRCLED FLUX
Test Reference Cord
50/125um
Patent Pending
VERSIV
05/28/2013 4:36:02 pm
SET REFERENCE
REMOTE


LC
EF-TRC
LC
SC
FLUKE networks
ENCIRCLED FLUX
Test Reference Cord
50/125um
Patent Pending
VERSIV REMOTE
PASS

Connect to the fiber to be tested



Test Limits:

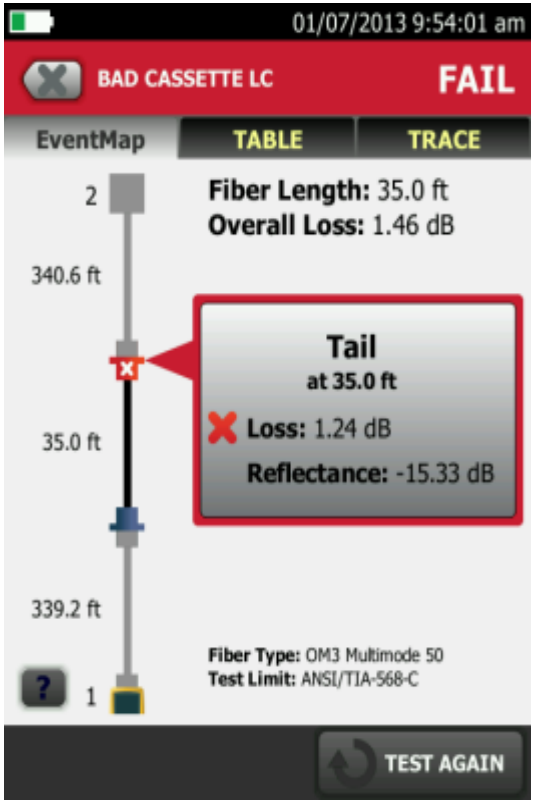
1.85 dB @ 850 nm
= 0.75 dB + 0.35 dB + 0.75 dB

1.65 dB @ 1300 nm
= 0.75 dB + 0.15 dB + 0.75 dB

Optifiber pro

Versiv OptiFiber Pro

- OptiFiber Pro
  - Introduced Taptive UI and ProjX with unprecedented success
  - Advanced the industry's benchmark:
    - Fastest Test Time
    - Automatic setups (like Datacenter mode)
    - Short Deadzones
    - Results Display (with Eventmap)



- Now it can be combined with even more:
- CertiFiber Pro modules and smart remote
- Twisted Pair modules
- Networks Analysis module

What is reflectance?

[illegible] between [illegible] end faces of a fiber [illegible]
Fres[illegible] [illegible]nsit[illegible]

What do those numbers mean?

Reflectance is the preferred term when characterizing a single connector.

- It is a measure of the amount of power reflected by a connection.
- It includes one connector
- It is always **negative**.
- **Smaller**

$$\mathrm{Refl} = 10\log\left(\frac{P_{reflected}}{P_{incident}}\right)$$

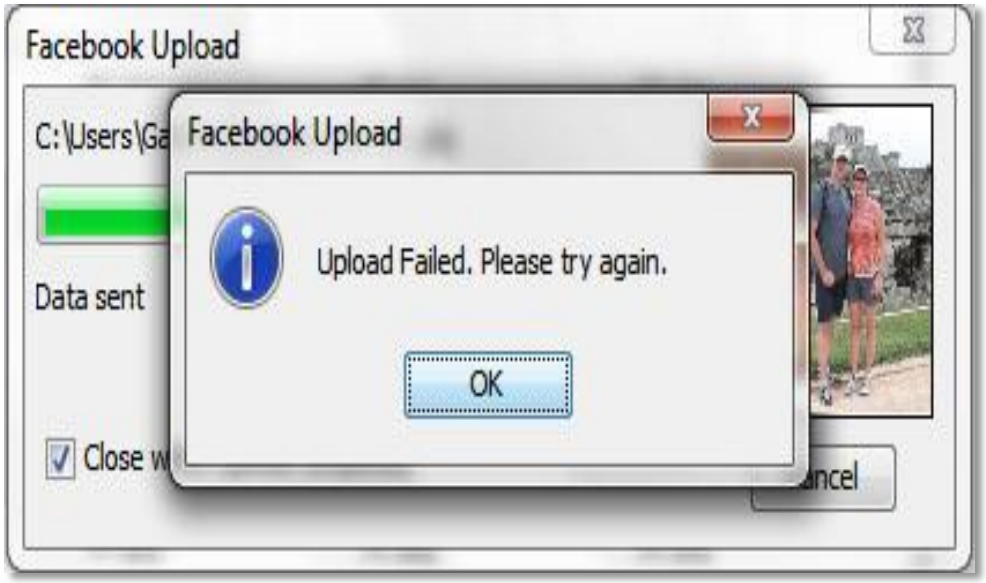
Return Loss is the preferred term when characterizing an entire link

- It is a measure of the amount of power NOT reflected by a link.
- Includes all connections and fiber
- It is always **positive**.
- **Bigger** is better (e.g. +35dB is better than +20dB)

$$\mathrm{ORL} = 10\log\left(\frac{P_{incident}}{P_{reflected}}\right)$$

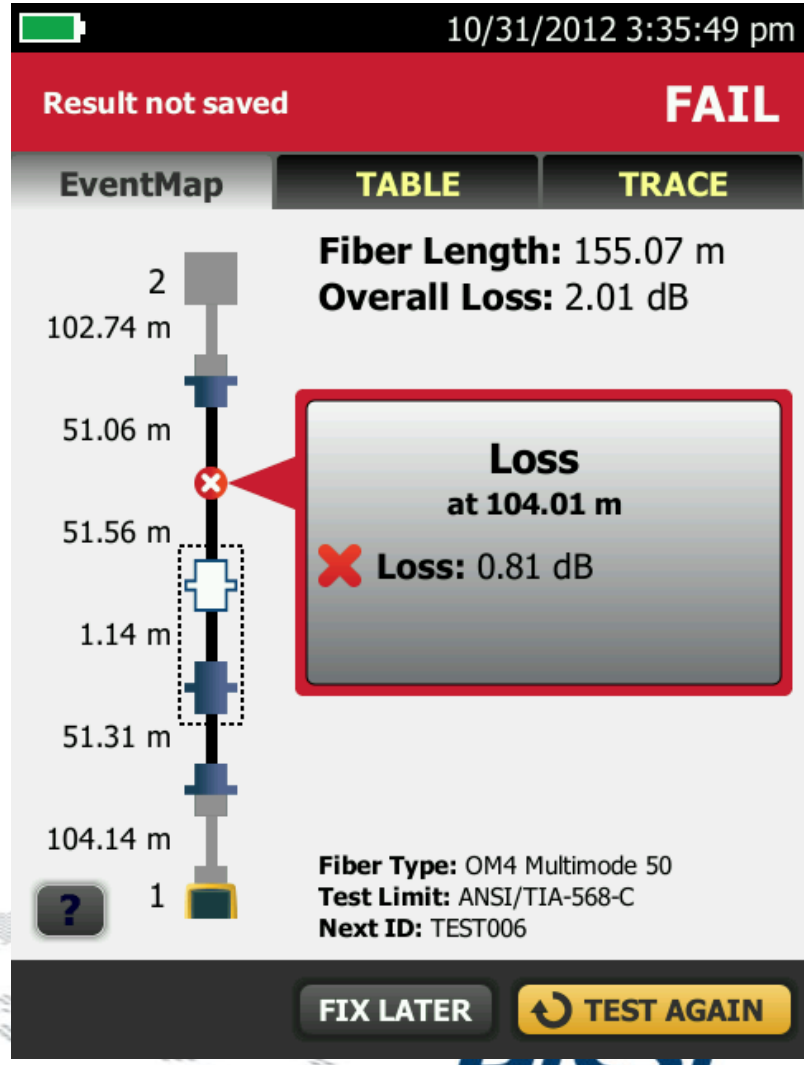
BICSI®

Why should you care?

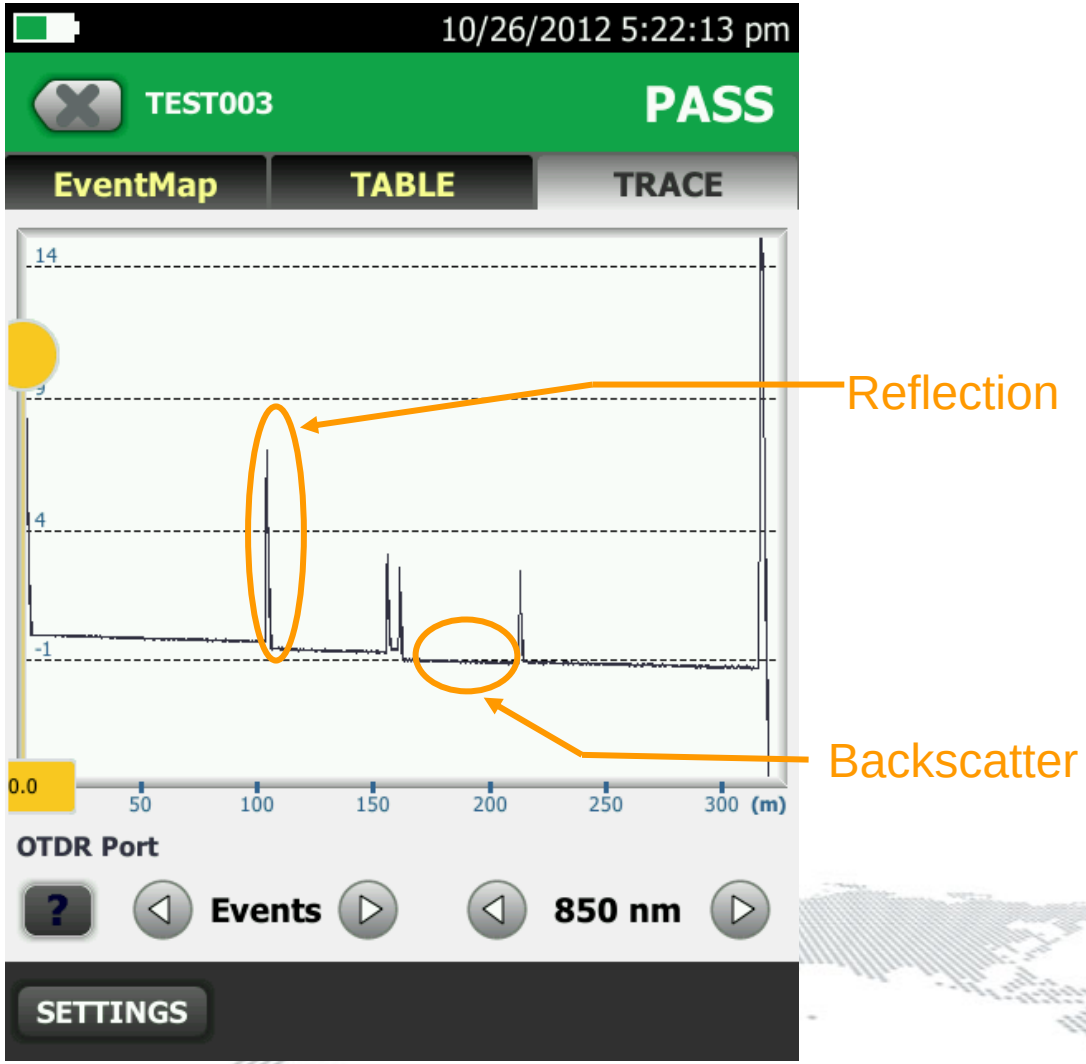


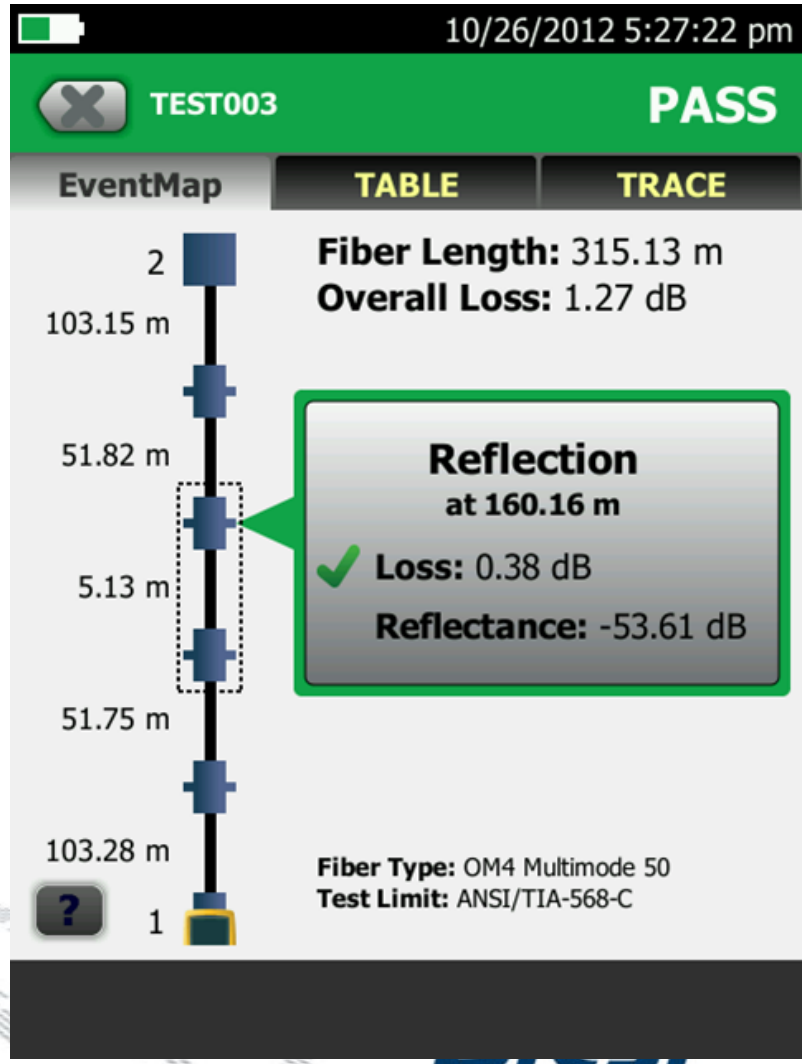
EVENTMAP

- Easy to understand map of the physical infrastructure
- Icons represent events.
  - Passing reflective event
  - Failing reflective event
  - Hidden reflective event
  - Passing loss event
  - Failing loss event
  - Hidden event's loss is added to previous event's loss

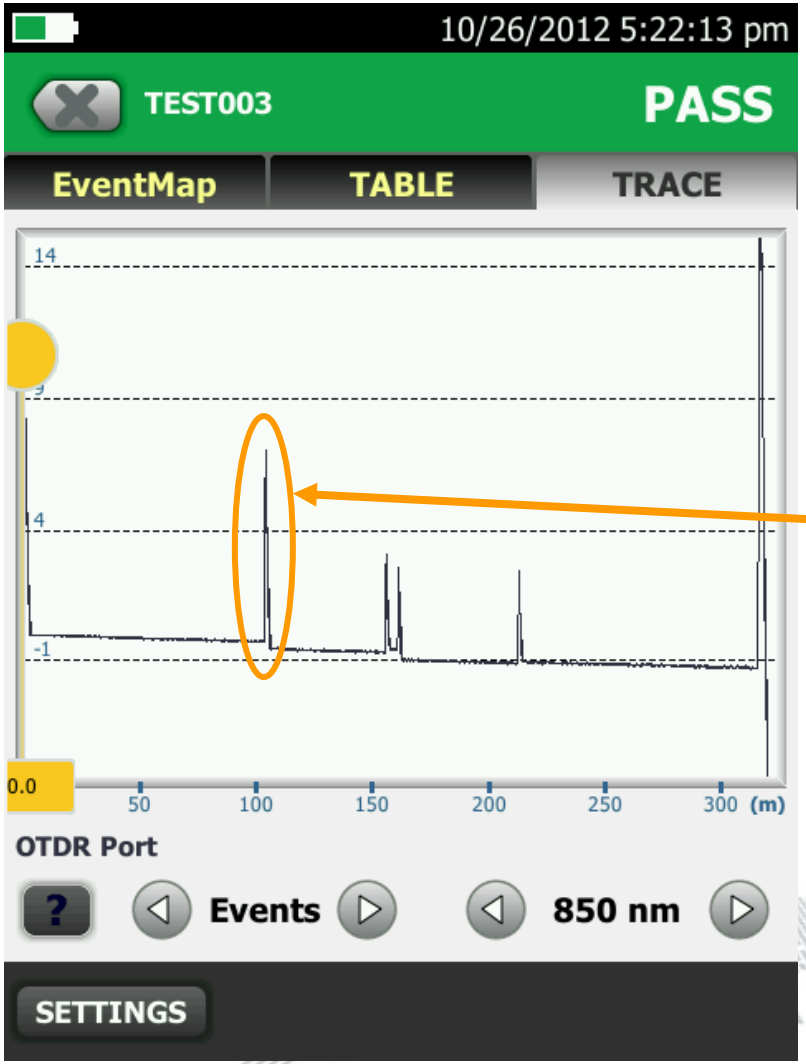


Typical OTDR TEST RESULT

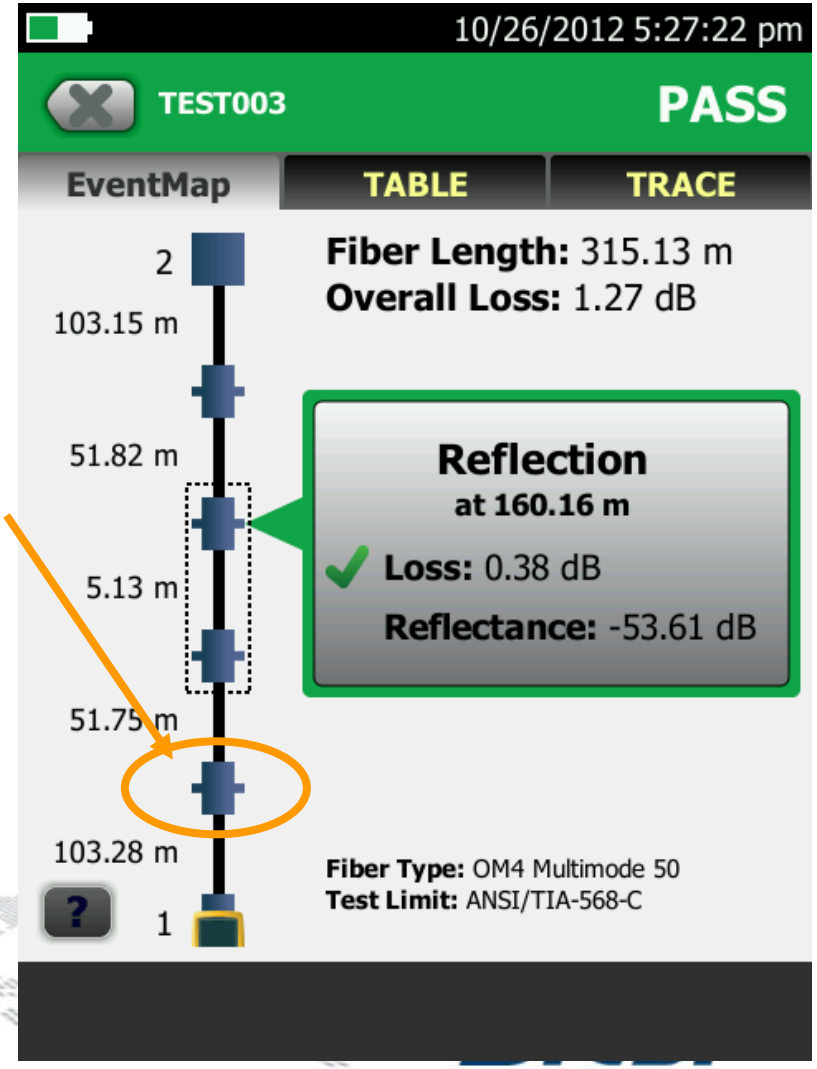




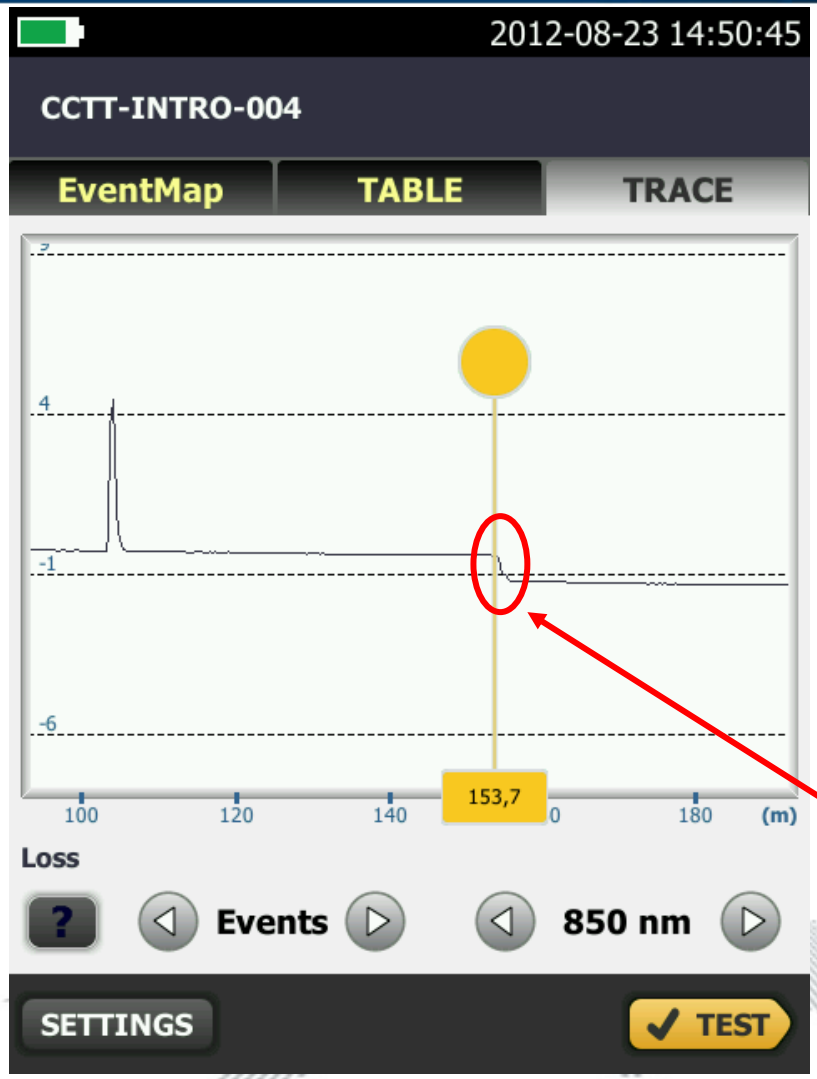
Reflection Event



Connector

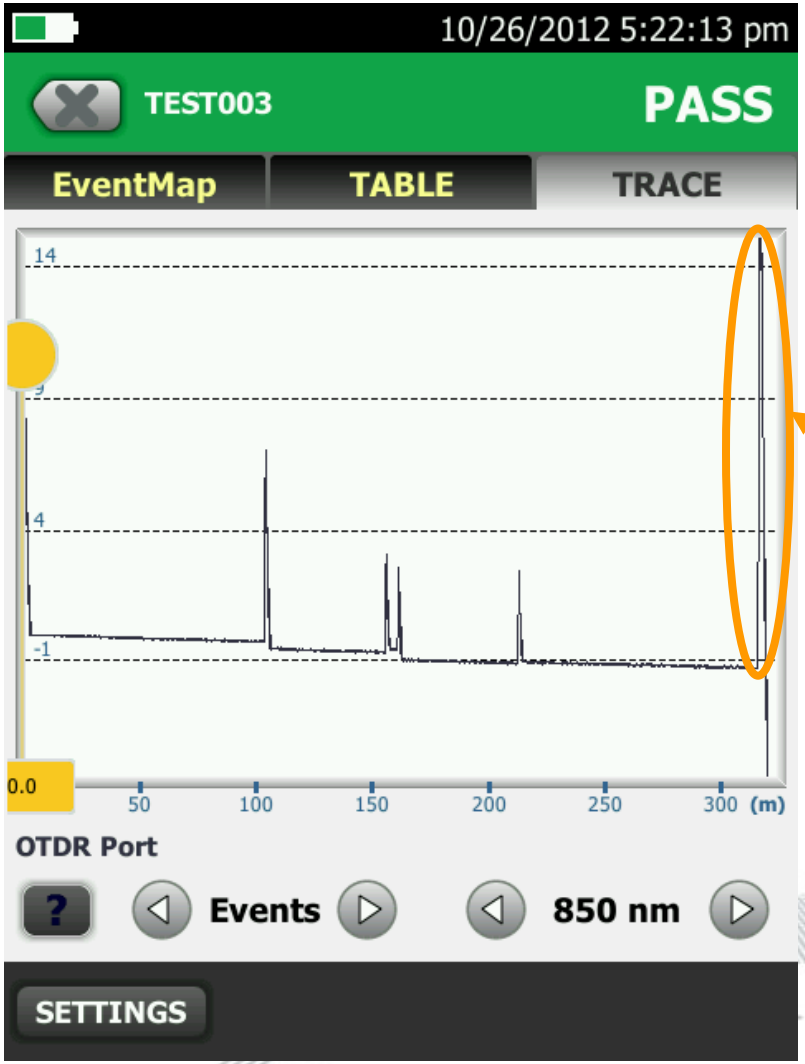


Loss Event

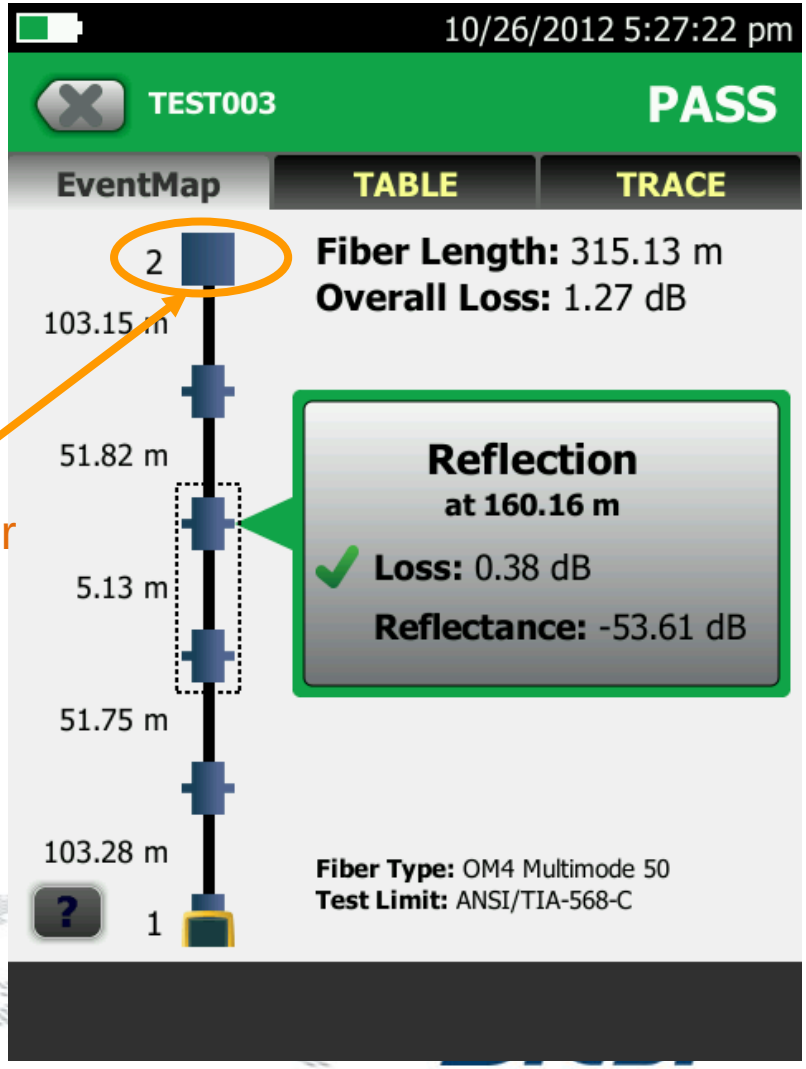


Non-reflective event
Splice or severe bend

End Event

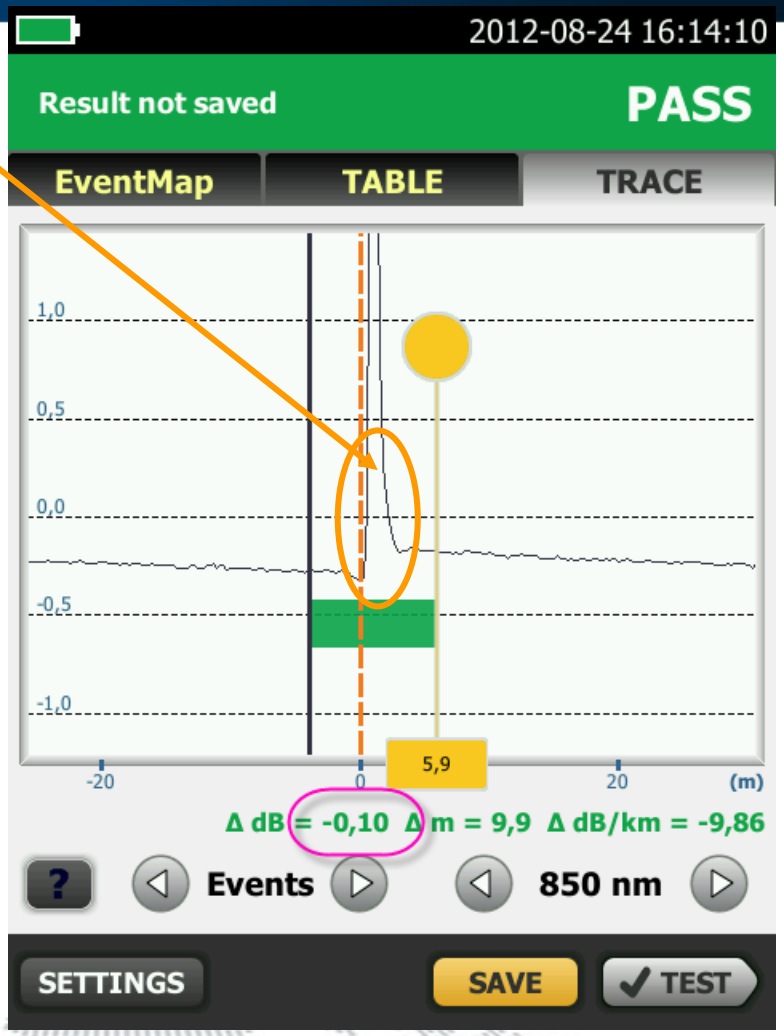


End of Fiber



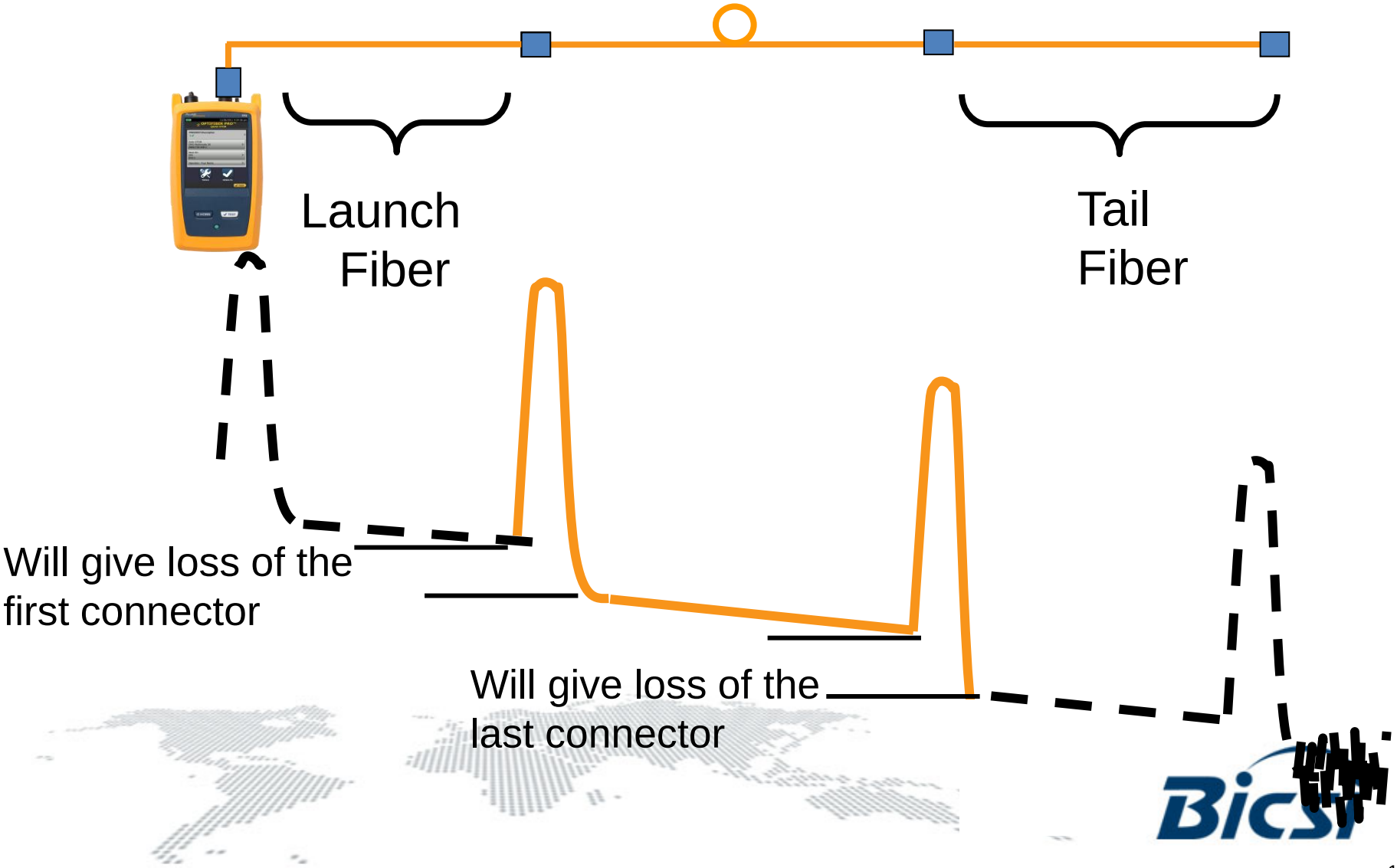
Gainer Event

Gainer



50 micron fiber connected to a 62.5 micron fiber

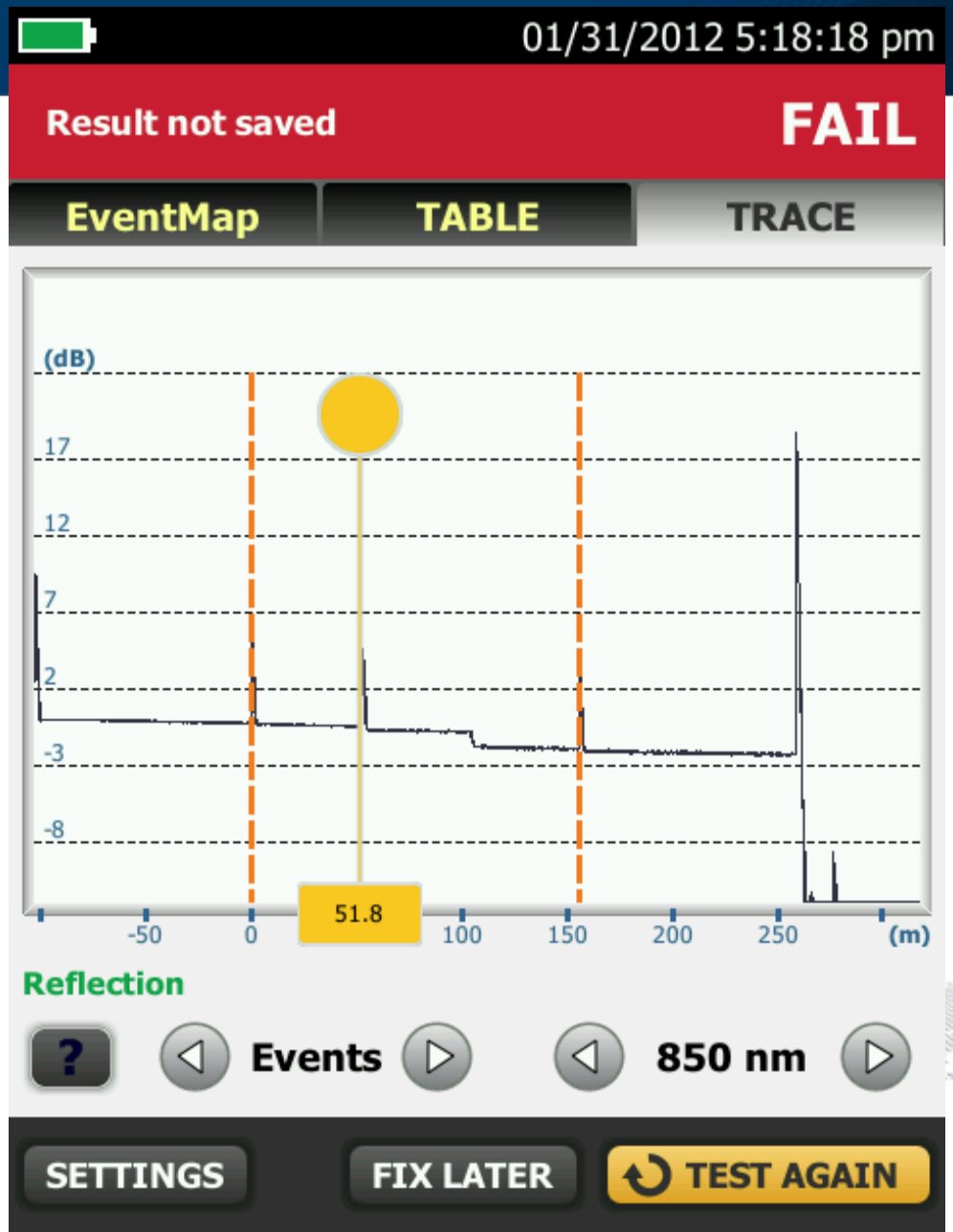
Using a LAUNCH AND TAIL Fiber

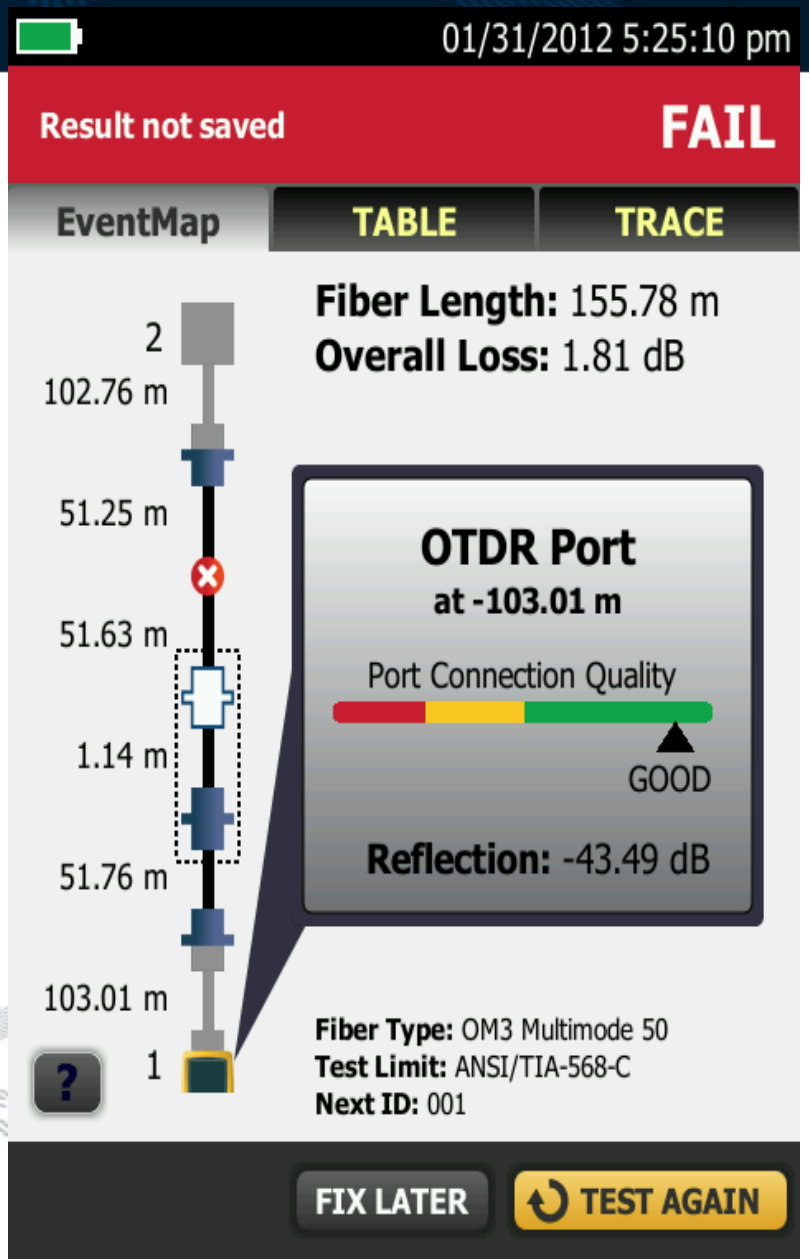


Launch & TAIL Fiber

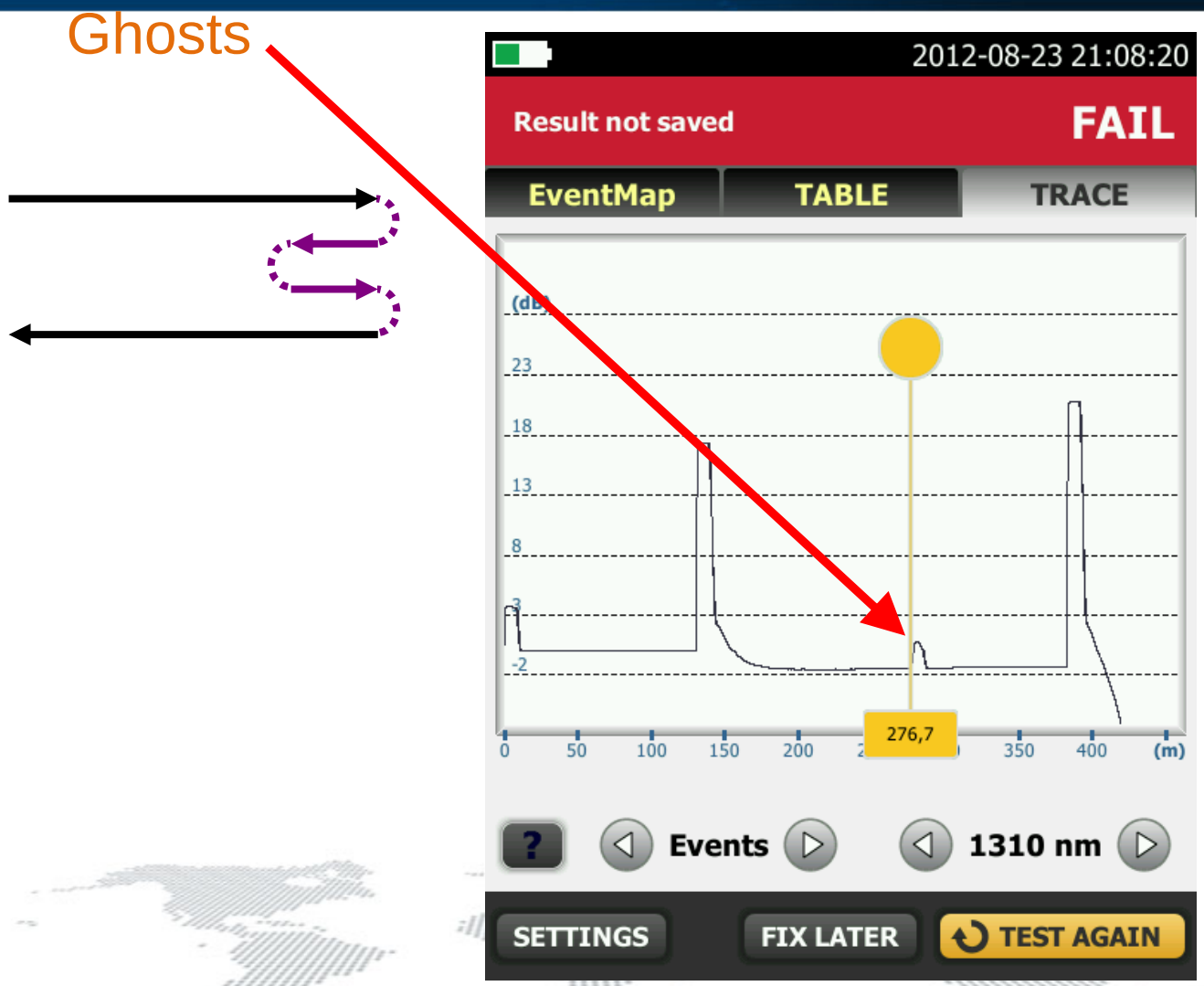
- A must for measuring the loss of the first and last connector in a fiber link
- Launch fiber must be significantly longer than the attenuation dead zone of the OTDR
- With short dead zones you can use a short launch fiber

Launch Fiber Compensation





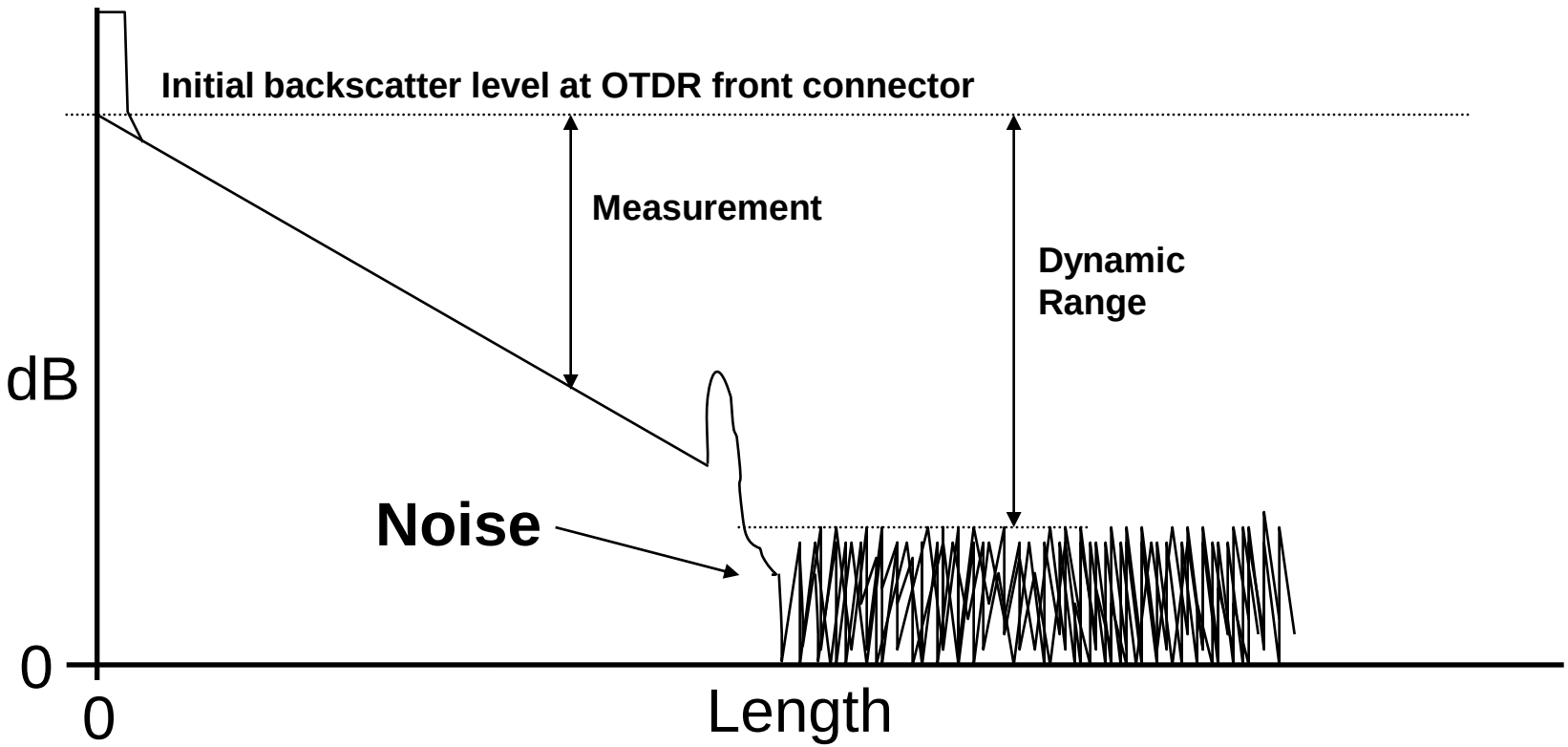
GHOST EVENT


Ghosts
2012-08-23 21:08:20
Result not saved
FAIL
EventMap
TABLE
TRACE
(dB)
23
18
13
8
3
-2
276,7
0
50
100
150
200
350
400
(m)
?
Events
1310 nm
SETTINGS
FIX LATER
TEST AGAIN

Dynamic Range

- Determines the length of fiber that can be tested
- Provided as a dB value
  - Larger values mean longer distance (typically for telcos) … and a larger dead zone
  - Premises OTDR's do not need a large dynamic range … and benefit with a small dead zone
- Pulse needs to be wide enough to get to the end of the fiber

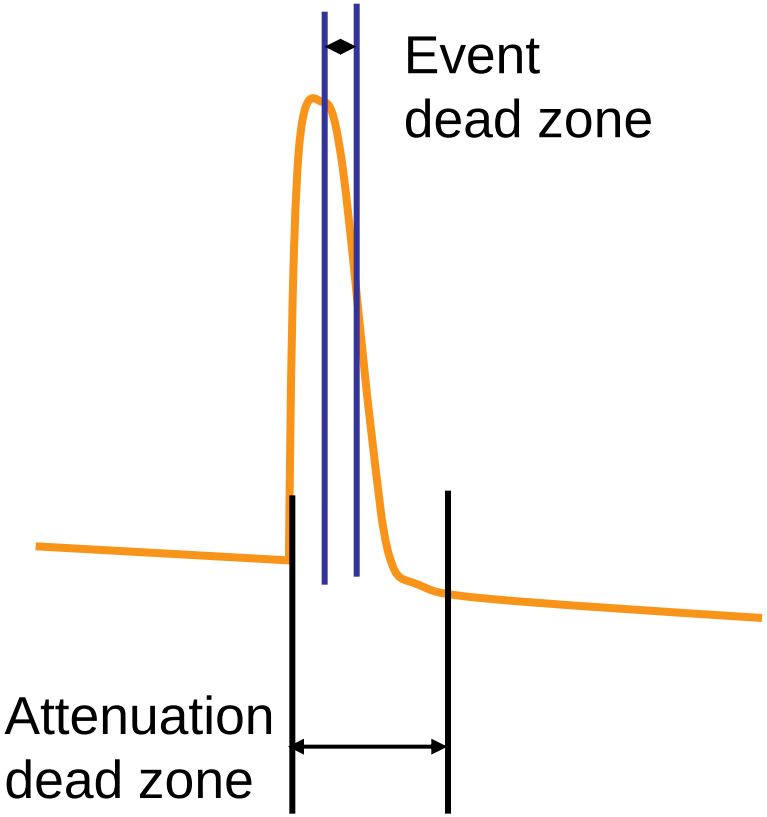
Dynamic Range



Dynamic range is the maximum attenuation level that the test equipment can recognize and therefore may be used to determine how long of a fiber can be measured.

Two Types of Dead Zones

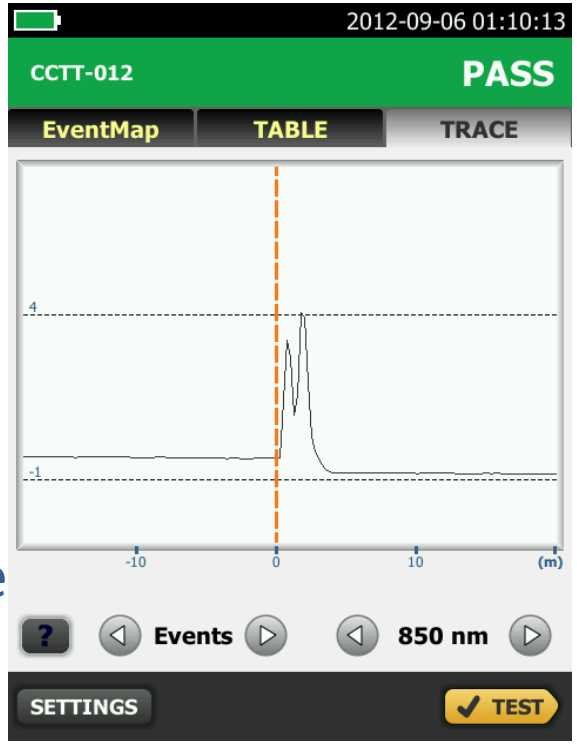
- A dead zone is like when your eyes need to recover from looking at the sun
- It can be reduced by using a lower pulse width, but it will decrease the dynamic range.
- Typically occurs in a trace whenever there is a connector
- The OTDR receiver goes “blind” from the strong reflection
- Includes duration of the reflection and recovery time for the receiver.



Attenuation Dead Zone vs. Event Dead Zone

- **Event Dead Zone** is the minimum distance the OTDR can detect an event after the preceding event

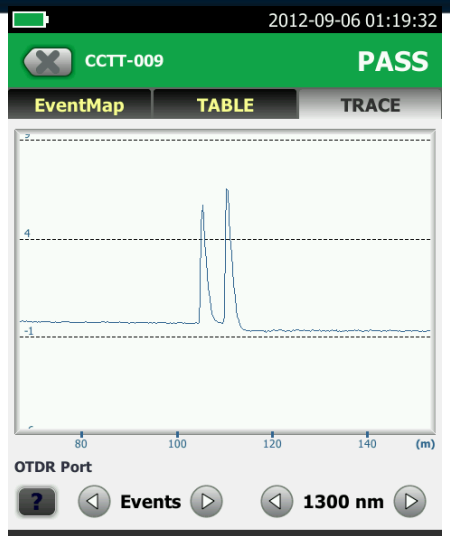
- OFP Typical Event Dead Zone is:
  - 0.5m @ 850 nm, 3 ns, -40 dB Reflectance
  - 0.7m @ 1300 nm, 3 ns -40 dB Reflectance
  - 0.6m @ 1310 nm, 3 ns, -50 dB Reflectance
  - 0.6 m @ 1550 nm, 3 ns, -50 dB Reflectance

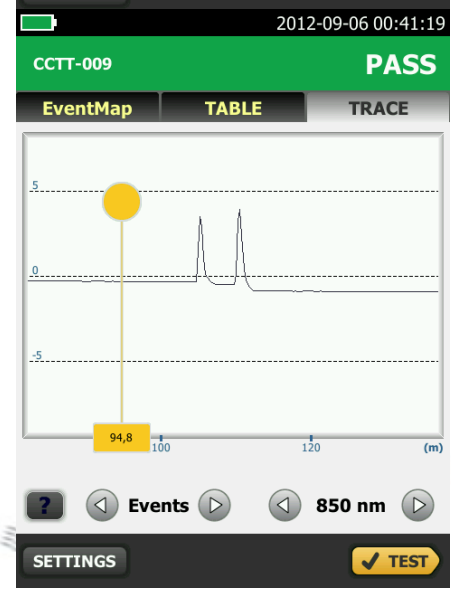


Attenuation Dead Zone vs. Event Dead Zone

- **Attenuation Dead Zone** is the minimum distance between two events on an OTDR where the OTDR can assess the event loss

- OFP Typical Attenuation Dead Zone is:
  - 2.2m @ 850 nm, 3 ns, -40 dB Reflectance
  - 4.5m @ 1300 nm, 3 ns -40 dB Reflectance
  - 3.6m @ 1310 nm, 3 ns, -50 dB Reflectance
  - 3.6 m @ 1550 nm, 3 ns, -50 dB Reflectance

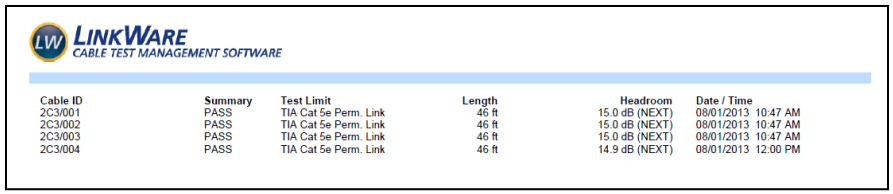




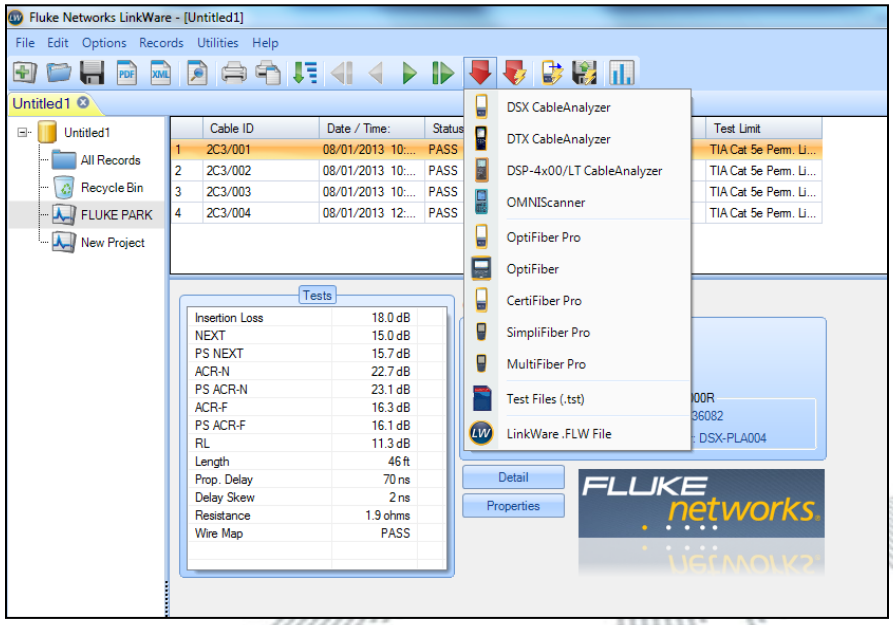
Linkware

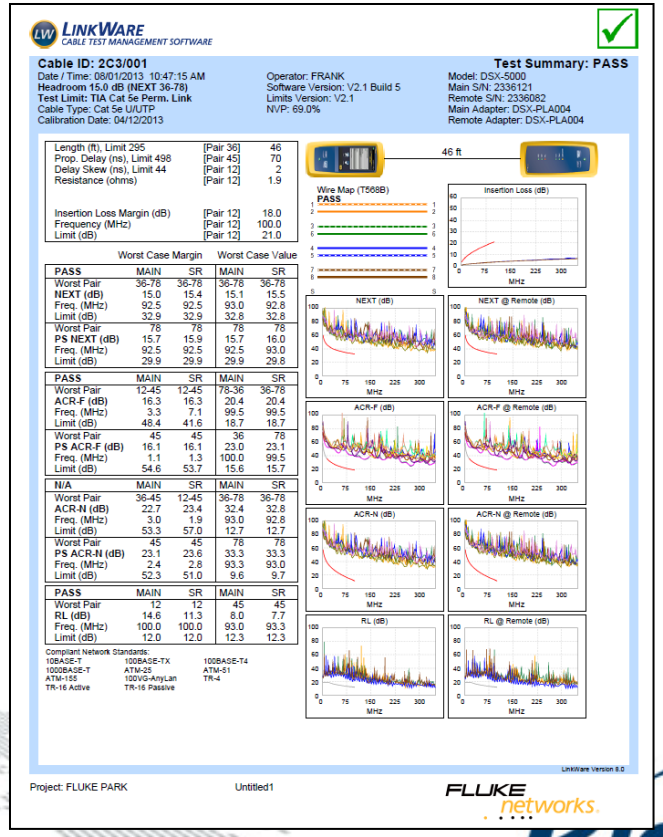
LinkWare Software

Summarizes your entire cabling infrastructure in a compact, graphical format that makes it easy to verify margins and spot abnormalities



Cable ID	Summary	Test Limit	Length	Headroom	Date / Time
2C3/001	PASS	TIA Cat 5e Perm. Link	46 ft	15.0 dB (NEXT)	08/01/2013 10:47 AM
2C3/002	PASS	TIA Cat 5e Perm. Link	46 ft	15.0 dB (NEXT)	08/01/2013 10:47 AM
2C3/003	PASS	TIA Cat 5e Perm. Link	46 ft	15.0 dB (NEXT)	08/01/2013 10:47 AM
2C3/004	PASS	TIA Cat 5e Perm. Link	46 ft	14.9 dB (NEXT)	08/01/2013 12:00 PM





BICSI

LinkWare stats reports

All Results
Fluke Networks LinkWare Stats Report

Factory Default Configuration

Your cabling records have been extracted from LinkWare and subjected to a detaile
on 6/7/2013. LinkWare Stats has analyzed your data and produced graphical summ
performance of your cabling. This analysis includes a pictorial look at relevant marg
distribution, and other detailed analysis.

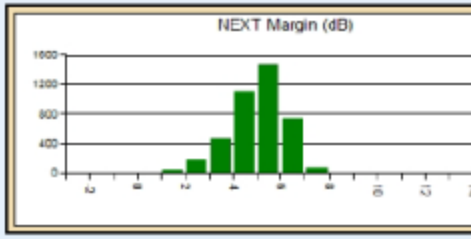
Customer address: ;

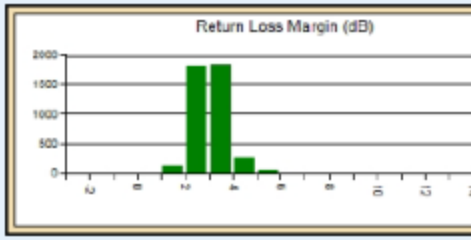
Project:

Location:

Date range: 1/12/2009 to 6/5/2009.

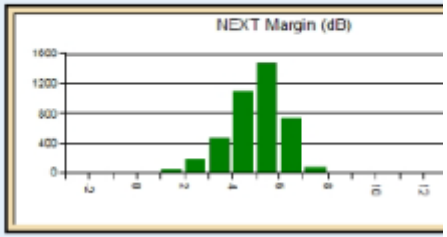
Total number of records: 4073 (4073 passed).





- 1 -

All Results
Summary



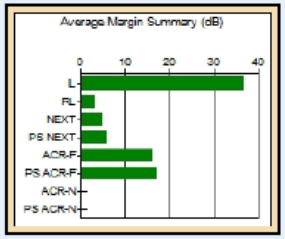
Overall Summary of Records	
	Records
Total Twisted Pair Records	4073
Total Passing Twisted Pair Records	100.0%
Total Twisted Pair Length (km)	53.57
Minimum NEXT Margin	0.00
Average NEXT Margin	4.97

Pass/Fail Summary						
Test Standard	Records	PASS	PASS*	FAIL*	FAIL	WARNING
TIA Cat 6 Perm. Link	25	25	0	0	0	0
TIA Cat 6A Perm. Link	4048	4018	30	0	0	0
All	4073	4043	30	0	0	0

NEXT Headroom Summary			
Test Standard	Min	Max	A
TIA Cat 6 Perm. Link	3.30	9.30	
TIA Cat 6A Perm. Link	0.00	8.20	
All	0.00	9.30	

- 3 -

All Results
Tests Summary



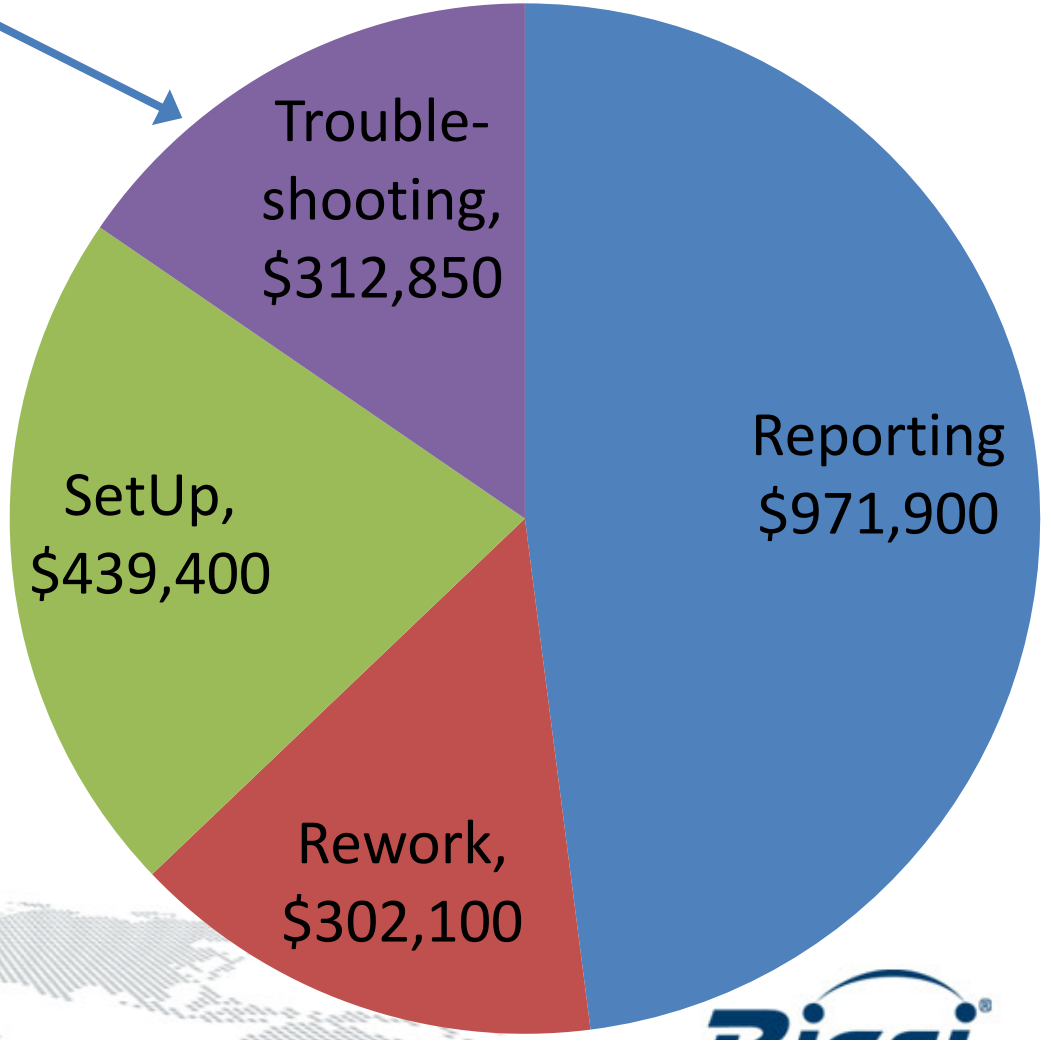
Pass Summary (%)			
	PASS	FAIL	WARNING
Wiremap	100.0%	0.0%	0.0%
IL	100.0%	0.0%	0.0%
RL	100.0%	0.0%	0.0%
NEXT	100.0%	0.0%	0.0%
PS NEXT	100.0%	0.0%	0.0%
ACR-F	100.0%	0.0%	0.0%
PS ACR-F	100.0%	0.0%	0.0%
ACR-N			
PS ACR-N			
Length	100.0%	0.0%	0.0%
Delay	100.0%	0.0%	0.0%
Skew	100.0%	0.0%	0.0%

- 7 -

Summary

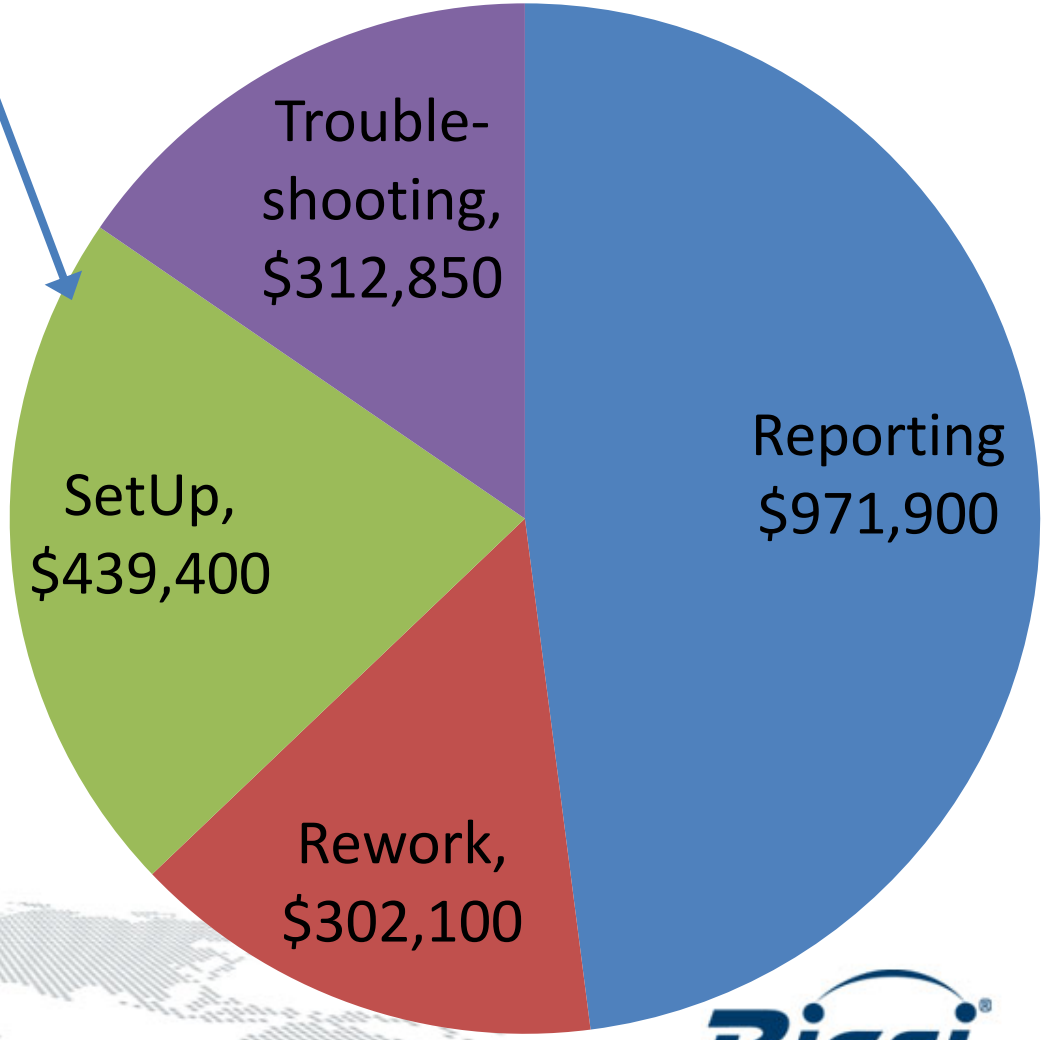
Two million dollars of problems

- Copper cables are tested with wrong limits and have to be retested.
- Fiber cables are tested with wrong limits and have to be retested.

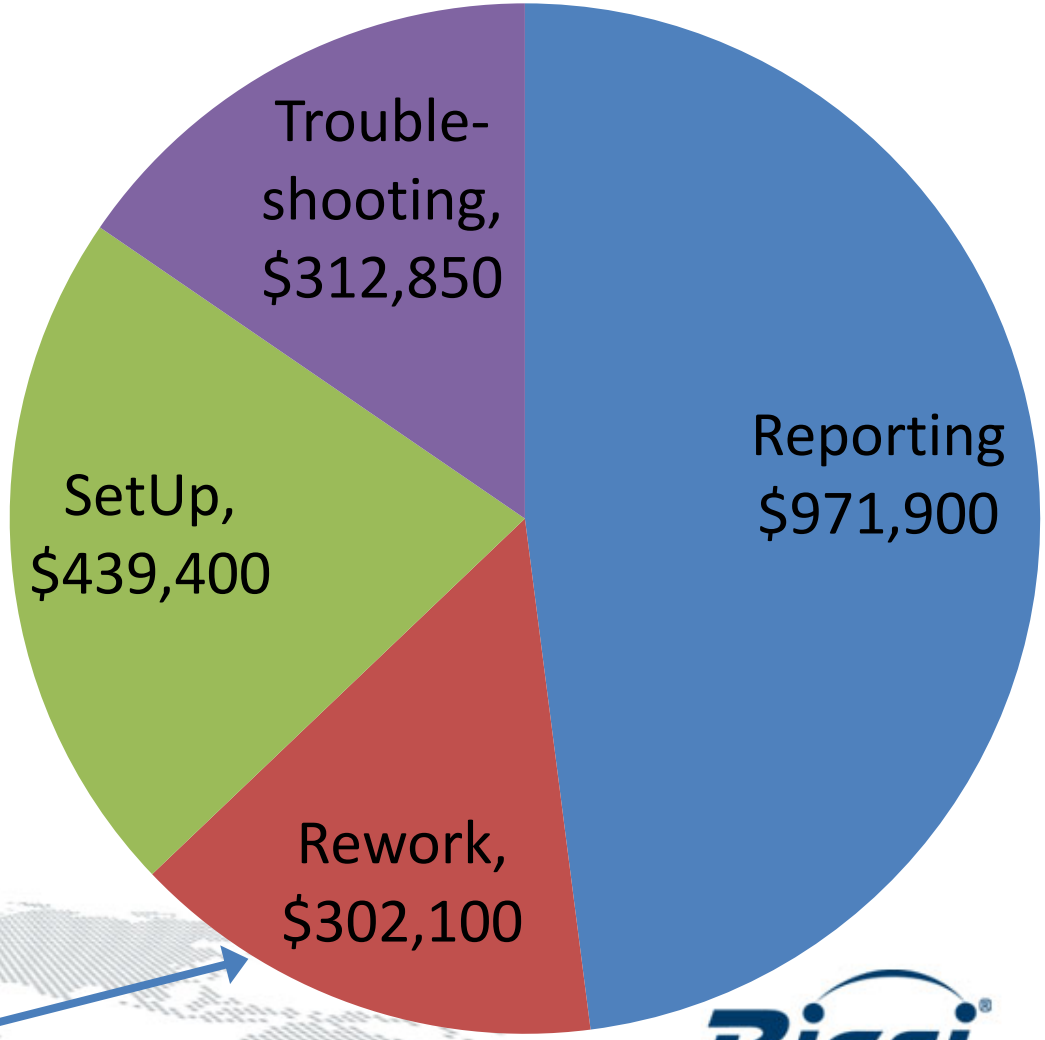


Two million dollars of problems

- Problems setting the fiber reference.
- Teams have to wait for one of your lead techs to set up the tester.



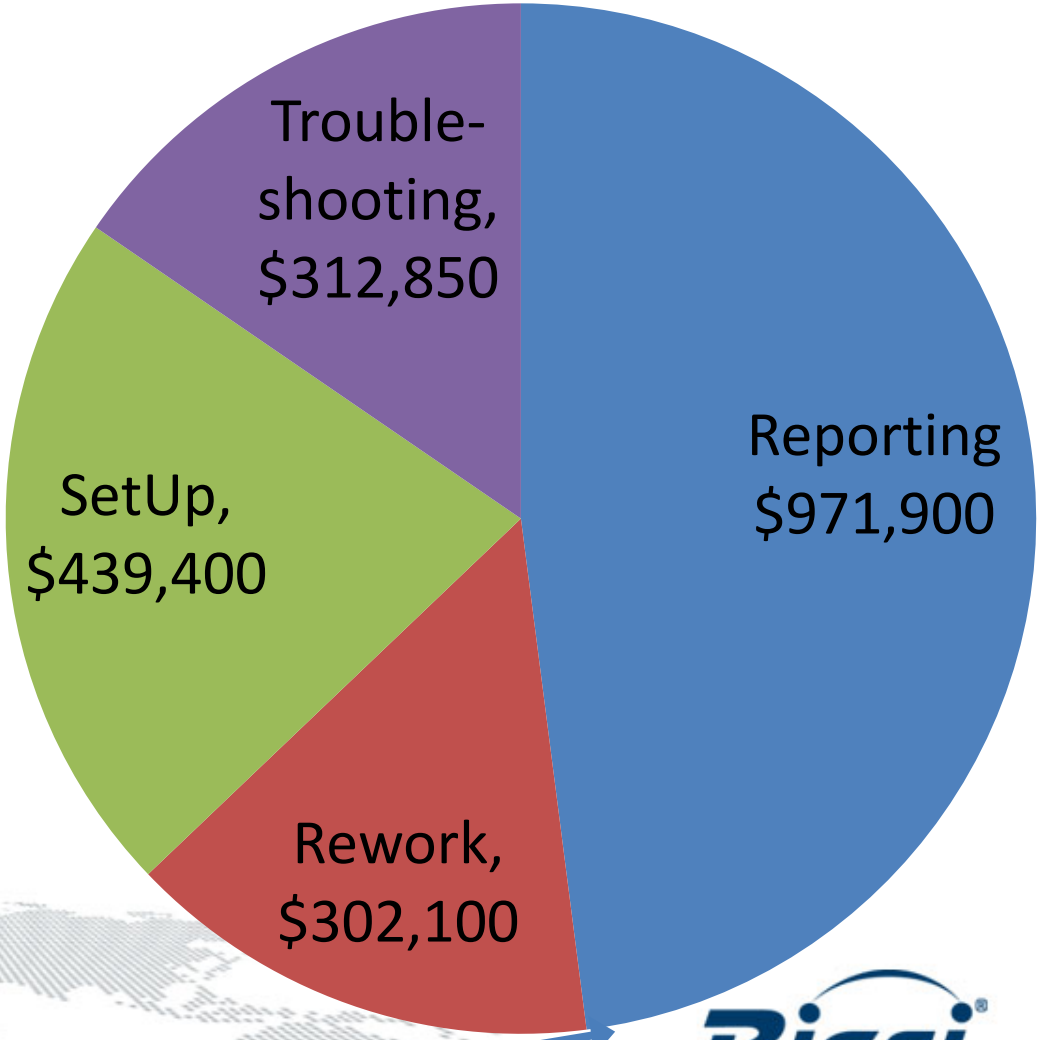
Two million dollars of problems



- Copper cables are tested with wrong limits and have to be retested.
- Fiber cables are tested with wrong limits and have to be retested.

Two million dollars of problems

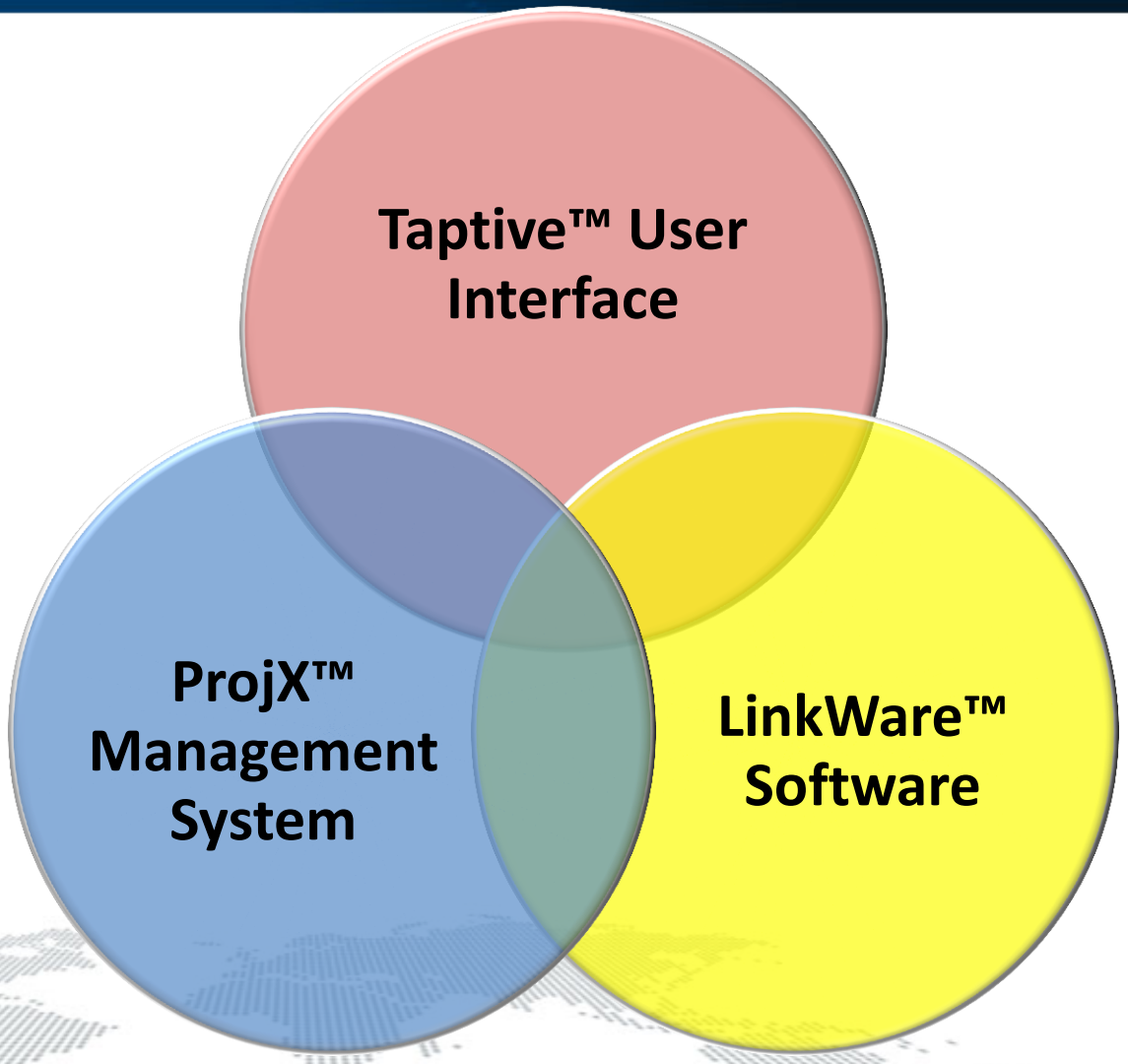
- Evaluating OTDR traces to ensure loss is within budget.
- You're generating a report and you discover not all the links were tested, and a crew has to return to the site to finish the job.
- Cable ID's in the reports don't match the specs and need to be manually edited.



Our Goal:

Eliminate These Problems

Why versiv


Taptive™ User Interface
ProjX™ Management System
LinkWare™ Software

Q&A

- **Thank you for your interest!**
- **Questions? Please ask.**

- Vassilis Moustakis
- Netscope Solutions S.A.
  www.netscope.gr