

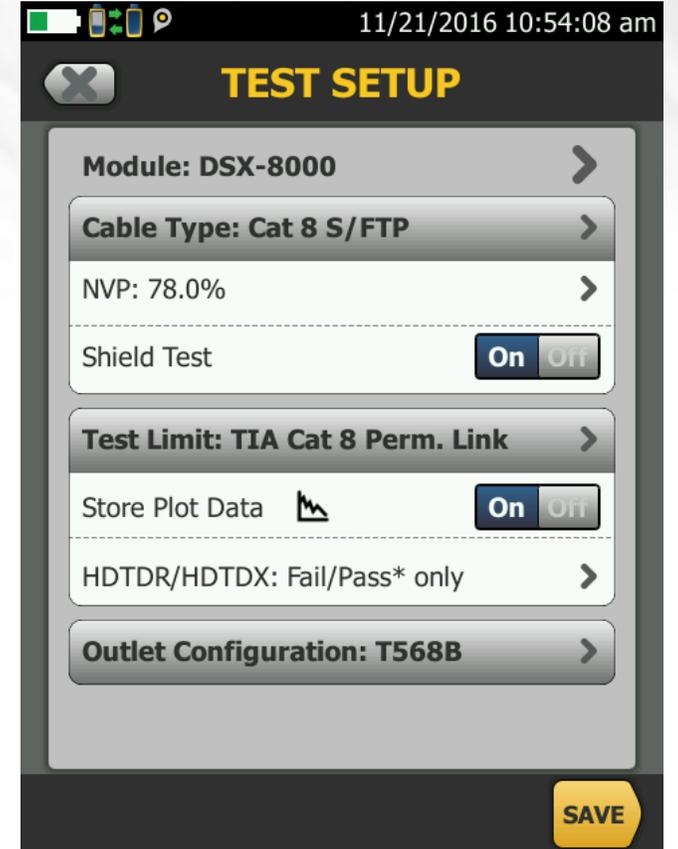
DSX-8000 CableAnalyzer

January 2017



Agenda

- Cat 8 Overview
- DSX-8000 Product Overview
- Why purchase a DSX-8000?
- Versiv Configurator
- More information



Situation Analysis

- IEEE 25G/40GBASE-T and TIA Category 8 Standards for application, components and tester accuracy are now published
 - ISO/IEC standards expected in 2017
- TIA Cat 8 Cabling will be available soon
 - Cable, Connectors
- Networking equipment using 25G/40GBASE-T not yet available

Category 8 Application

- IEEE 802.3bq 25G/40GBASE-T published 8 September 2016
 - Defines minimum transmission characteristics for the application on a twisted pair channel
- ANSI/TIA-568-C.2-1 published 30 June 2016
 - Defines Category 8 Channels and Permanent Links
 - Includes Resistance Unbalance, TCL, ELTCTL
- ANSI/TIA-1152-A published 10 November 2016
 - Defines tester measurement and accuracy requirements for Category 8
- ISO/IEC Standards expected in 2017
 - ISO/IEC 11801-99-1 Class I/II Channels and Permanent Links
 - IEC 61935-1 Ed5.0 tester measurement and accuracy requirements

Why 25G/40G on Twisted Pair?

- At lower power and cost
 - Can be built into switch and server motherboards
 - No SFP Transceiver required as with fiber
 - Lower cost and more flexible than TwinAx Direct Attach cables
 - Can Auto-Negotiate at different rates
 - Expected to be a data center application only
 - 24 meter Permanent Link
 - Top of Rack and End of Row Switch data center architectures
- Category 6A and 10GBASE-T followed similar path

Product Overview

DSX-8000 CableAnalyzer™

The First True Cat 8 Field Tester.



- Channel and Permanent Link Adapters Ready Now
- Manufacturer Endorsed
- ETL Verified for Cat 8 Level 2G accuracy
- All Cat 8 required measurements

Unique features

- Cat 8 Permanent Link Adapter
 - 1st Reference Test Plug to work at 2GHz
 - Same durability as DSX-5000 PLAs
- Cat 8 Channel Adapter
 - 1st board mount jack suitable for Cat 8 channel certification
 - FNET exclusive jack



Manufactures Endorsements

- Panduit
 - “...pleased to endorse and recommend the DSX-8000 Cable Analyzer by Fluke Networks for use in field-testing for PANDUIT’s copper connectivity solutions...”

» Endorsements Gold Product Support

Fluke Networks has subjected the DSX-5000 testers to rigorous testing in the labs of leading wiring manufacturers. Read approval letters below by man

DSX-8000



[Read Approval Letter](#)



[Read Approval Letter](#)



[Read Approval Letter](#)



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3rd Party Verification

- Intertek/ETL Verified to ANSI/TIA-1152-A Level 2G
 - the most stringent accuracy requirement
- *No other cable tester has this verification!*
- TIA-1152a Accuracy Levels
 - Level IIe accuracy covers Category 5e
 - Level III accuracy covers Category 6
 - Level IIIe accuracy covers Category 6A
 - Level 2G accuracy covers Category 8

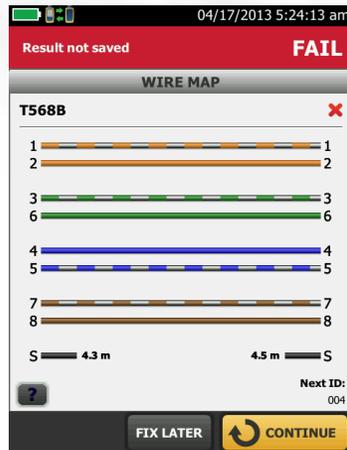


One of the many specialized test set ups required to obtain Intertek/ETL certification

Shield Integrity – DSX Series Feature

- The DSX series reports screen continuity using shield integrity techniques which provides distance to fault information.
 - Finds shield faults in the datacenter – even with common ground
 - Ability to find distance to shield open
- Why does Shield Integrity matter now?
 - Cat 6A does not require shielded cable,
 - Shield Integrity wasn't really needed
 - Cat 8 requires shielded cable due to more stringent requirements
 - Shield Integrity testing will be imperative to pass Cat 8 links

DSX Series Ready for Today's and Tomorrow's Requirements



Shield integrity.

- The DSX series reports screen continuity using shield integrity techniques which provides distance to fault information.
- Finds shield faults in the datacenter – even with common ground.



Balance measurements:

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

04/17/2013 5:24:13 am
Result not saved PASS
RESISTANCE RESISTANCE UNBALANCE
VALUE VALUE LIMIT
Ω Ω Ω
1,2 6.8 0.02 0.20
3,6 6.7 0.02 0.20
4,5 6.8 0.03 0.21
7,8 6.6 0.01 0.20
LIMIT 25.0

Resistance Unbalance:

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

DSX-8000 Measurements

- Fully backwards compatible to previous category measurements
 - Cat 3, Cat 5e, Cat 6, Cat 6A, Class F, Class F_A etc.

DSX-5000 vs DSX-8000

	Copper Certification	
	DSX-8000 CableAnalyzer™	DSX-5000 CableAnalyzer™
Category 6A / Class EA test time	8 seconds	10 seconds
Category 8 / Class I/II test time	15 seconds	X
HDTDx/HDTDR diagnostic test times	≈ 3 seconds	≈ 3 seconds
Internal memory	≈ 5,000 Cat 8 with plots ≈ 12,000 Cat 6A with plots	≈ 12,000 Cat 6A with plots
Level V Accuracy (1 GHz)	✓	✓
Level 2G Accuracy (2 GHz)	✓	X
Resistance Unbalance measurement	✓	✓
Shield integrity check	✓	✓
TCL measurement	✓	✓
ELTCTL measurement	✓	✓
CDNEXT measurement	✓	✓
CMRL measurement	✓	✓
Built in Alien XTalk module	✓	✓
Channel Adapter	2 GHz Range	1 GHz Range
Permanent Link Adapter	2 GHz Range	1 GHz Range
Optional Accessories		
Patch cord adapters	Category 5e, 6 and 6A patch cord	Category 5e, 6 and 6A patch cord
Coax Adapter	✓	✓
M12 Adapter	✓	✓
TERA Adapter	Coming Summer 2017	✓
GG45 Adapter	Coming Summer 2017	✓

What's in a DSX-8000?

- Like the DSX-5000 but with new
 - Cat 8 Measurement modules
 - Cat 8 Permanent Link Adapters
 - Cat 8 Channel Adapters
- Same Versiv platform!



DSX-8000 Measurement Module

- Cat 8 measurement capability
- Same size as the DSX-5000
- New DSX-8000 decal
- DSX-8000 modules & adapters are **Keyed**
 - DSX-5000 adapters **CAN** plug into an 8000 module
 - DSX-8000 adapters **CANNOT** plug into a 5000 module



DSX-5000

DSX-8000

DSX Series Adapter Compatibility

DSX-8000 Adapters		Measurement Module Compatibility	
		DSX-8000	DSX-5000
DSX-PLA804	Cat 8 Permanent Link	☑	☒
DSX-CHA804	Cat 8 Channel	☑	☒
TBD	TERA Class II Permanent Link	Coming Summer 2017	☒
TBD	TERA Class II Channel	Coming Summer 2017	☒
TBD	GG45 Class II Channel	Coming Summer 2017	☒

- DSX-8000 adapters ONLY work on the 8000

DSX Series Adapter Compatibility

- DSX-5000 adapters may work on either the 5000 or 8000

DSX-5000 Adapters		Measurement Module Compatibility	
		DSX-8000	DSX-5000
DSX-PLA004	Cat 6A / Class E _A Permanent Link	☑	☑
DSX-CHA004	Cat 6A / Class E _A Channel	☑	☑
DSX-CHA021	M12 4-Position	☑	☑
DSX-CHA003	Coax Adapter	☑	☑
DSX-PC5e	Cat 5e Patch Cord	☑	☑
DSX-PC6	Cat 6 Patch Cord	☑	☑
DSX-PC6A	Cat 6A Patch Cord	☑	☑
DSX-PLA011	TERA Class F _A Permanent Link	☒	☑
DSX-CHA011	TERA Class F _A Channel	☒	☑
DSX-CHA012	GG45 Class F _A Channel	☒	☑

LinkWare Live supports DSX-8000

Technician can download test setups and cable IDs on the tester in the field



Project Manager can track job progress anytime



Project Manager can setup the tester remotely in LinkWare Live



Technician can upload Test Results from the job site



Asset Manager can track last used location, software version and calibration status*



Reports Administrator can download test results from LinkWare Live to LinkWare PC



*Feature available only in limited regions; to learn more visit: www.fluketworks.com/linkwarelive

Why purchase a DSX-8000?

Why purchase a DSX-8000?

- A cable tester typically lasts ~10 years
 - Any new tester should be Cat 8 ready
 - Want to avoid expensive future investments and difficult justifications
- Cost of including Cat 8 capability when purchasing a DSX* product:

	At time of purchase	Future upgrade
DSX Copper only	9% additional	89% additional
DSX Copper & OLTS kit	3% additional	42% additional

DSX-8000 Upgrade Path

- Customers who purchased a DSX-5000 between December 1, 2016 and February 1, 2017, can return their unit to their distributor by February 28th for a full refund and then purchase a DSX-8000. Pre-approval required at: support@flukenetworks.com
- A program will be announced in mid-Feb for purchases before Dec 1, 2016. Please register at www.flukenetworks.com/upgrade to receive information when available.

Versiv Kit Configurator

Versiv Kit Configurator

- Configure a Versiv product to meet your needs
 - Choose from Copper, OLTS, OTDR, Fiber Inspection and Gold Support
 - Output is a Bill of Materials you can print or email

Try it at:

www.flukenetworks.com/VersivConfig

The screenshot displays the 'Versiv Kit Configurator' interface. At the top, it features the 'FLUKE networks' logo and the title 'Versiv Kit Configurator'. On the right, there are contact details: 'Questions?' and phone numbers '1-844-721-8130 (US)' and '1-425-446-5500 (International)'. The main area shows five product categories, each with a '+ GOLD' badge: 'Versiv Mainframe', '1 USB Video Fiber Inspection Cameras With 1 Tip Sets', 'Versiv Remote', 'DSX-5000 CableAnalyzer Modules', 'CertiFiber Pro Quad OLTS Modules', and 'OptiFiber Pro Quad OTDR Module'. A sidebar on the right contains a list of options with checkboxes: 'I WANT IT ALL', 'Versiv Professional Kit', 'COPPER CERTIFICATION' (with 'Copper Certification' checked), 'BASIC FIBER CERTIFICATION (TIER 1)' (with 'OLTS Singlemode' and 'OLTS Multimode' checked), 'EXTENDED FIBER CERTIFICATION (TIER 2)' (with 'OTDR Singlemode' and 'OTDR Multimode' checked), 'FIBER INSPECTION' (with 'USB Video Inspection Camera' checked), 'MAINTENANCE & SUPPORT' (with 'Gold Product Support' checked), and 'I ALREADY OWN' (with 'DSX-5000 CableAnalyzer' and 'CertiFiber Pro Quad OLTS' checked). A yellow 'NEXT >' button is at the bottom right.

Q&A

Thank you for your time

For more information on the DSX-8000 CableAnalyzer and Cat 8 technology, visit:

www.flukenetworks.com/Cat8

