

# VERYX ATTEST™ MEF CE2 FT CONFORMANCE TEST SUITE



Assures service providers and equipment manufacturers that Ethernet devices are delivering services conformant to MEF CE 2.0 specifications.



## HIGHLIGHTS

Verifies Ethernet Subscriber Services (E-line, E-LAN and E-Tree) and Ethernet Access Services

Measures behavior in real-time deployment scenarios

Validates control and invalid frames

Ensures preservation of attributes (VLAN, CoS)

Continuous performance measurement for different traffic types and frame sizes

## BENEFITS

Enables significant speeding up of testing cycles and reduces the “time-to-market”

Test suites written in industry standard TCL scripts. Well defined APIs provide the flexibility to customize the test cases for specific requirements.

Built in Automation and Reporting Capabilities

Veryx ATTEST-CTS CE2 FT is aligned with MEF Carrier Ethernet 2.0 test cases for Service Attributes and Traffic Management. It relies on ATTEST -- a powerful test framework that requires minimal setup time and enables efficient use of time and resources.

## SPECIFICATIONS

- |            |            |
|------------|------------|
| ✓ MEF 6.1  | ✓ MEF 23.1 |
| ✓ MEF 10.2 | ✓ MEF 26.1 |
| ✓ MEF 13   | ✓ MEF 30   |
| ✓ MEF 20   | ✓ MEF 33   |



**Veryx ATTEST CTS MEF CE2 FT coverage**

Veryx ATTEST-CTS MEF CE2 FT Conformance Test Suite verifies conformance to MEF Carrier Ethernet 2.0 for both Ethernet Subscriber Services (E-Line, E-LAN and E-Tree) as defined in MEF 6.1 and Ethernet Access (E-Access) services as defined in MEF 33. With Veryx ATTEST-CTS CE 2 FT, service providers can ensure that they are capable of delivering services conformant to MEF CE 2.0 specifications and equipment vendors can ensure the CE 2.0 capability of their equipment on the field.

Using ATTEST-CTS MEF CE2 FT service providers can verify their circuits from a central office, by deploying probes at suitable points across geographical locations.

**Ethernet Services - Subscriber**

ATTEST-CTS MEF CE2 FT test suite supports test cases for verification of attributes for all the six subscriber focused Ethernet services namely E-line (EPL and EVPL), E-LAN (EP-LAN and EVP-LAN) and E-Tree (EP-Tree and EVP-Tree) as defined by MEF. Figure 1 provides the set-up for EP-LAN verification on the Field.

**Ethernet Access (E-Access) Services**

ATTEST-CTS MEF CE2 FT test suite supports test cases for verification of attributes for both Access EPL and Access EVPL services defined by MEF. Figure 2 provides the set-up for Access EPL verification on the Field.

**Functional Test Grouping**

ATTEST-CTS MEF CE2 FT test cases are functionally grouped according to related Ethernet services attributes, performance attributes, Ingress bandwidth profile and Egress bandwidth profile attributes that they verify.

Table 2 and Table 3 provide the related grouping of test cases into service attributes and traffic management testing for each of the subscriber and access services respectively.

Table 1: Ethernet Service Types

Service Type	Private Service Port-based	Virtual Service VLAN-based
<b>E-line</b> (Point-to-Point EVC)  Ethernet Subscriber Service	EPL (Ethernet Private Line)  	EVPL (Ethernet Virtual Private Line)  
<b>E-LAN</b> (Multipoint-to-Multipoint EVC)  Ethernet Subscriber Service	EP-LAN (Ethernet Private LAN)  	EVP-LAN (Ethernet Virtual Private LAN)  
<b>E-Tree</b> (Rooted-Multipoint EVC)  Ethernet Subscriber Service	EP-Tree (Ethernet Private Tree)  	EVP-Tree (Ethernet Virtual Private Tree)  
<b>E-Access</b> (Point-to-Point OVC)  Ethernet Access Service	Access EPL (Access Ethernet Private Line)  	Access EVPL (Access Ethernet Virtual Private Line)  

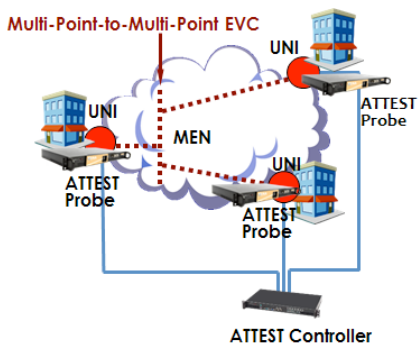


Figure 1: EP-LAN Verification on Field

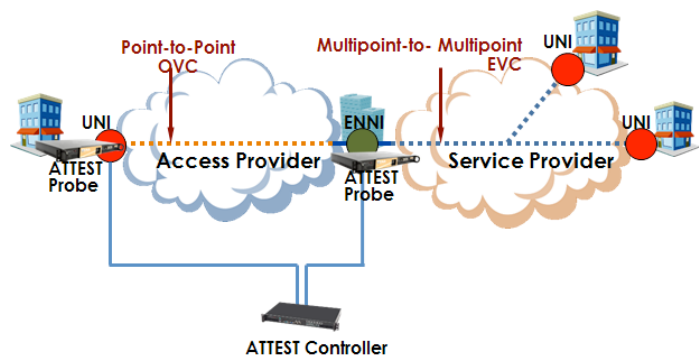


Figure 2: Access EPL Verification on Field



Table 2: Ethernet Subscriber Services Test Group

Test Group	EPL	EVPL	EP-LAN	EVP-LAN	EP-Tree	EVP-Tree
<b>Services Attributes Test Groups</b>						
Non looping frame delivery	✓	✓	✓	✓	✓	✓
Frame format	✓	✓	✓	✓	✓	✓
EVC Leakage	✓	✓	✓	✓	✓	✓
L2CP Service frames handling	✓	✓	✓	✓	✓	✓
CE-VLAN ID Preservation	✓	✓	✓	✓	✓	✓
UNI Physical Layer	✓	✓	✓	✓	✓	✓
UNI MAC Layer	-	-	✓	✓	✓	✓
Service OAM frames handling	✓	✓	✓	✓	✓	✓
UNI Bundling	-	✓	-	✓	-	✓
All to One Bundling	✓	-	✓	-	✓	-
EVC Instances	✓	✓	✓	✓	✓	✓
<b>Traffic Management Test Groups</b>						
<b>Bandwidth Profile Service Attributes</b>						
Ingress Bandwidth Profile – CIR/CBS Enforcement	✓	✓	✓	✓	✓	✓
Egress Bandwidth Profile – CIR Enforcement	✓	✓	✓	✓	✓	✓
Ingress Bandwidth Profile – EIR/EBS Enforcement	✓	✓	✓	✓	✓	✓
Ingress Bandwidth per UNI	✓	✓	✓	✓	✓	✓
Egress Bandwidth per UNI	✓	✓	✓	✓	✓	✓
Ingress Bandwidth per EVC	✓	✓	✓	✓	✓	✓
Egress Bandwidth per EVC	-	-	✓	✓	✓	✓
Ingress Bandwidth per CoS – PCP/DSCP/L2CP	✓	✓	✓	✓	✓	✓
Egress Bandwidth per CoS – PCP/DSCP/L2CP	-	-	✓	✓	✓	✓
Multiple Ingress Bandwidth per UNI	✓	✓	✓	✓	✓	✓
<b>Performance</b>						
One-Way Performance – FD/MFD/FDV/FLR	✓	✓	-	-	-	-

Table 3: E-Access Services Test Groups

Test Group	Access EPL	Access EPL	Access EVPL	Access EVPL
	UNI to ENNI	ENNI to UNI	UNI to ENNI	ENNI to UNI
<b>Service Attributes Test Groups</b>				
CE-VLANID Preservation	✓	✓	✓	✓
CE-VLANID CoS Preservation	✓	✓	✓	✓
Unconditional Frame Delivery	✓	✓	✓	✓
Service OAM frames handling	✓	✓	✓	✓
Service OAM frames handling	✓	✓	✓	✓
Maximum number of CE-VLAN IDs per OVC	-	-	✓	✓
<b>Traffic Management Test Groups</b>				
<b>Bandwidth Profile Service Attributes</b>				
Ingress Bandwidth Profile – CIR/CBS Enforcement	✓	✓	✓	✓
Egress Bandwidth Profile – CIR Enforcement	✓	✓	✓	✓
<b>Performance</b>				
One-Way Performance – FD/MFD/FDV/FLR	✓	✓	✓	✓



# VERYX ATTEST CTS MEF CE2 FT | DATASHEET

ATTEST Test Suites are written in industry standard Tcl scripts. Well defined APIs and source files provide the flexibility to add, customize or modify the test cases for specific requirements.

Verlyx ATTEST Framework helps customers to easily integrate device under test for automation – using CLI SNMP (v1 / v2 / v3). It also provides a standard interface to integrate with home-grown automation systems.

Verlyx also provides ATTEST-CTS MEF 9 FT and ATTEST-CTS MEF14 FT to help service providers prepare MEF CE 1.0 conformance for Service Providers. ATTEST-XP Y.1564 enables service providers to perform service activation testing in accordance to ITU-T Y.1564.

For more information, kindly visit our website or contact us.

Figure 3: Sample ATTEST Screen shots



## ORDERING INFORMATION

PRODUCT	PART NUMBER
<b>SOFTWARE</b>	
ATTEST-CTS MEF CE2 FIELD TEST - E-Line (requires ATTEST Server and 2 remote ATTEST probes)	CTS-MEF-CE2-FT-ELine-B
ATTEST-CTS MEF CE2 FIELD TEST - ELAN (requires ATTEST Server and 3 remote ATTEST probes)	CTS-MEF-CE2-FT-ELAN-B
ATTEST-CTS MEF CE2 FIELD TEST - ETree (requires ATTEST Server and 3 remote ATTEST probes)	CTS-MEF-CE2-FT-ETree-B
ATTEST-CTS MEF CE2 FIELD TEST – E-Access (requires ATTEST Server and 2 remote ATTEST probes)	CTS-MEF-CE2-FT-EAccess-B
ATTEST-CTS MEF CE2 FIELD TEST – Subscriber Bundle containing E-Line, E-LAN and E-Tree (requires ATTEST Server and 3 remote ATTEST probes)	CTS-MEF-CE2-FT-SubB-B
ATTEST-CTS MEF CE2 FIELD TEST Full Bundle containing E-Line, E-LAN, E-Tree and E-Access (requires ATTEST Server and 3 remote ATTEST probes)	CTS-MEF-CE2-FT-B-B
<b>FRAMEWORK</b>	
ATTEST-Framework-Server 6.x with 1 Remote ATTEST-Client - Windows & FC	FW6S-1FW6C-B
<b>HARDWARE</b>	
ST-1000 Server	ST-1000-1SC
XenaCompact System with 6 port 10/100/1000M SFP slots (fixed) <b>OR</b>	XC-1000-M6SFP
XenaBay 12 slot Chassis (With one of the following cards):	XB-2000-C4-12
XenaBay 6 port SFP (optical 100/1000M, 10/100/1000M BASE-T) card	XB-2000-M6SFP
XenaBay 6 port 10-GigE SFP+ 10GBASE-SR/LR optical card	XB-2000-M6SFP+

### About Verlyx Technologies

Verlyx Technologies is an innovative enterprise providing solutions that enable companies significantly reduce their testing related investments, while simultaneously enhancing the Product Quality and Efficiency of Testing. Bringing this same innovation to the Ethernet Service Provider market, Verlyx offers an increasing number of flexible, cost-effective products that enhance the Service Assurance capability of our customers. Leading equipment vendors rely on the ATTEST range of products for testing applications in Access, Carrier Ethernet, Data Center, Edge, Enterprise, Industrial Networking and Security domain.

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**Contact NextGig Systems, Inc. 805-277-2400 www.NextGigSystems.com**

