



# XSUVAC-M5RE

## VDSL2 SFP Transceiver



### Features

- Support all VDSL2 standards defined in ITU – G.993.2, G.994.1, G.997.1.
- Backward compatible with ADSL2/ ADSL2+
- MSA compliant hot pluggable electrical interface
- Compact design for smart CPE migration

### Product Overview

The XenOpt XSUVAC-M5RE SFP is a VDSL2 SFP transceiver that interconnects with Gateway Processor by using an MSA (Multi-Source Agreement) compliant hot pluggable electrical interface. The XSUVAC-M5RE chipset inside the VDSL2 SFP supports all VDSL2 profiles that defined by ITU-T G.993.2, and more importantly, it can be fully backward compatible with ADSL2/ ADSL2+ and VDSL. Compliancy with G.994.1, G.997.1 among other standards, ensures its interoperability with all existing broadband network services. Furthermore, the XSUVAC-M5RE also features the latest ITU standards such as G.inp (G.998.4) and G.vector (G.993.5).

As broadband access technology has evolved rapidly, Service Providers need to upgrade their broadband network service every few years. Traditionally, Service Providers have replaced the whole CPE device in order to provide subscribers faster, new Internet services. Not only does it increase their CAPEX and OPEX but also wastes resources, increase inventories, etc. Leveraging XenOpt VDSL2 PHY SFP series in Service Providers' product portfolio will help them significantly reduced the software porting and testing effort and shorten their product time-to-market.

The XenOpt XSUVAC-M5RE VDSL2 SFP realizes the modulation of VDSL2 broadband access. It can be integrated with any router, switch or residential gateway with an SFP type of WAN. There's no more need for Service Providers to maintain more than one type of CPE device in the field or in the warehouse, moreover, this also can give them the possibility to future upgrade. Users can upgrade to any broadband access data rate easily only by plugging in different type of WAN SFPs such as VDSL2 35b/G.fast or optical TRx SFPs with the same internet box and user interface.

## Product Brief

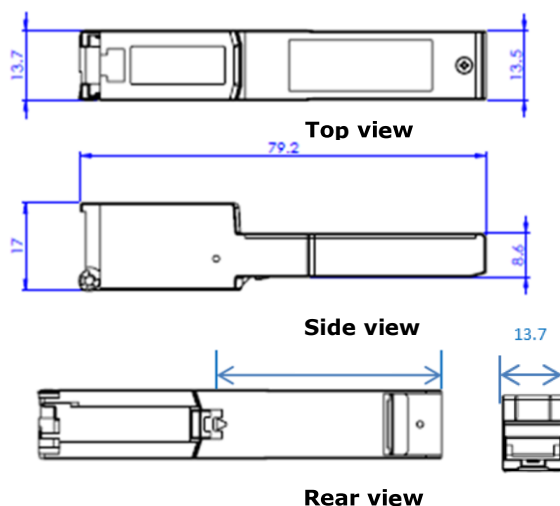
XenOpt XSUVAC-M5RE is a VDSL2 PHY chip especially designed for Small Form-Factor Pluggable (SFP transceiver) use. XSUVAC-M5RE incorporates MT2311 DMT (Discrete Multi-Tone) and MT3311 AFE (Analog Front End) into a single chip that greatly minimize the board size to fit in different applications. More importantly, it inherits the rich features set from the original MT-V2311 chipsets with full VDSL2 function and all the latest ITU-T add in features, such as G.inp (G.998.4) and G.vector (G.993.5).

Leveraging the SFP cage of Gateways as a WAN interface enables Service Providers to have more flexibility on selecting different levels of access technology based on the requirements from end users. Service Providers can provide network service varies from Megabit to Gigabit transmission data rate on copper cable only by plugging in different SFPs as long as they deploy a SFP cage on their CPE Gateway. Since Service Providers will not need to substitute any new Gateways to upgrade their broadband network service, using the SFP module definitely is a cost saving solution for them. Besides, it can prevent the possible increase of managerial costs because there is going to be only one CPE type for service providers to manage rather than multiple equipment for different type of WAN communication.

Realizing the modulation of broadband access technology makes it possible for Service Providers to provide several types of access network services using the same CPE Gateway. With the same user experience, leveraging XenOpt XSUVAC-M5RE within a SFP module is a competitive and cost efficient solution for Service Providers which not only ensures the interoperability but also reserves the possibility for future upgrade.

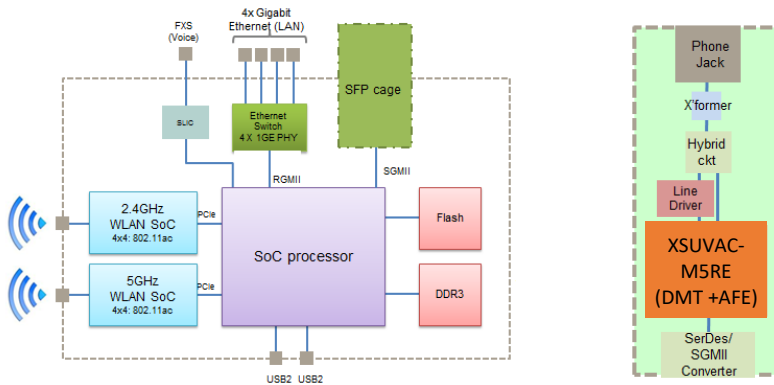
## Mechanical Dimensions

(Units in mm)



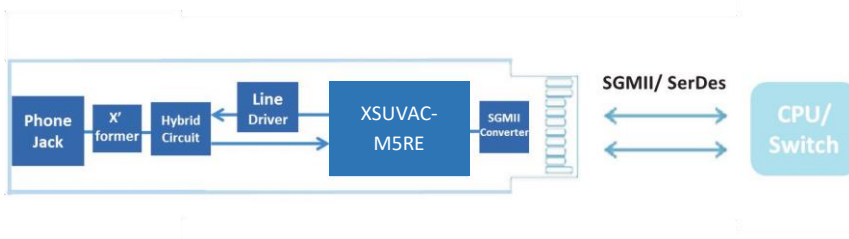
### Application Block Diagram

Residential Gateway with SFP type of WAN template

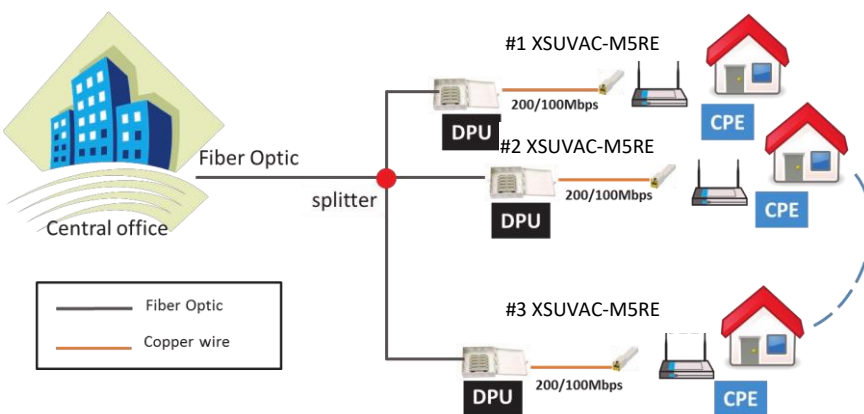


XenOpt VDSL2 SFP module

### SFP Block Diagram



### VDSL2 SFP Deployment scenario



**Chipset Key Features**

<b>VDSL2 Transmission modes</b>		<b>ADSL2+ Transmission modes</b>	
VDSL2 profiles	8a, 8b, 8c, 8d, 12a, 12b, 17a	Annex	A/B/M
Data rate	Up to 100 Mbps upstream /100 Mbps downstream	Data rate	Up to 24 Mbps
Annex	A/B/C	Modes	PTM & ATM (AAL5 and OAM cells)
Parameter	997.1 Compliant	PVC	Up to 8 PVCs
Configurability	Implement the system setting via the EBM program	VC	Up to 65 k VCs
<b>Advanced Features from ITU</b>		<b>Other Unique Features</b>	
G.inp	Supports G.inp described by ITU	Booting	
G.vector	Supports all CPE features of G.vector	Serial Flash	
ROC	Supports Robust Overhead Channel	QoS	Flexible packet sorting based on Ether Type, VLAN ID or VLAN priority (supports QinQ).
Dual latency	Supported		
OLR	Supports bit swapping, SRA, SoS and dynamic Interleaver depth (D) change		
US0	Supported		
PBO	Both UPBO and DPBO supported		

## Specifications

Hardware	RJ-45 female connector (Fully compatible with RJ-11 male connector)	
	SERDES connect to host	
	LED1 (Remain Undefined)	
	LED 2 (PWR/ Link Status indicator)	
Software	Self Boot & Managed by Internal Flash	
	Support Ethernet Boot & Management	
Power Requirement		3,3V, 700 mA
Environment	Operating Temperature	-40 °C ~ +85 °C (SFP cage)
	Storage Temperature	-20 °C ~ +85 °C
	Operating Humidity	10 % to 90 % (non-condensed)
	Storage Humidity	5 % to 95 % (non-condensed)
	Surge Protection	Compliant with ITU-T K.21 Enhanced Mode (Differential Mode: 6 KV, Common Mode: 6 KV)
Certification		RoHS/CE/FCC
Warranty		2 years

**Ordering information<sup>1</sup>**

PN	Description
XSUVAC-M5RE	VDSL2/ADSL2 VTU-R SFP Transceiver, RJ-45/RJ-11 Connector

## Notes:

<sup>1</sup> For accurate order specification please contact Xenopt reseller before placing an order. The content of this document is subject to change without notice. Xenopt does not guarantee errorless or outdated information.

Please specify any compatibility requirements at time of ordering.

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