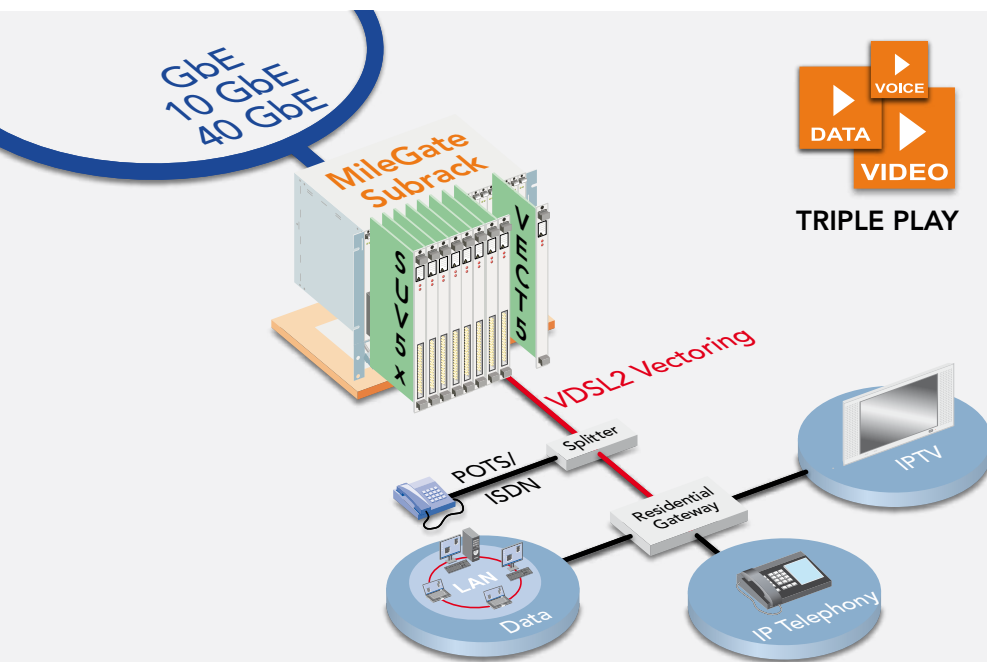


MileGate VECT5

Central System Level Vectoring card for the MileGate VDSL2 units SUV53 and SUV51



MileGate VECT5 connected to eight VDSL2 line cards

- + System level vectoring for up to 384 VDSL2 lines (288 VDSL2 35b lines)
- + Supports system level vectoring with SUV53 and SUV51
- + ITU-T G.993.5 compliant, FEXT pre-coding/FEXT cancellation
- + Supports full cancellation
- + Back channel operation – processes fault reports from CPE
- + Several VECT5 cards can be integrated in one subrack
- + All functions from one network management system

FTTC applications using VDSL2 with vectoring are using the existing copper plant in order to provide broadband DSL access to end customers. With VDSL2 vectoring, data rates of up to 300 Mbps (VDSL2 profile 35b, SUV53) or 100 Mbps (VDSL2 profile 17a, SUV51) can be achieved.

Because of the number of subscribers in one DSL cable binder, crosstalk (FEXT, Far End Crosstalk) between the VDSL2 signals is the limiting factor in terms of range, data rate and VDSL2 line stability. Vectoring can compensate crosstalk almost completely. VECT5 provides system level

vectoring that allows vectoring group sizes of up to 384 VDSL2 lines.

Overview

MileGate VECT5 is the system level vectoring control unit for the MileGates VDSL2 line cards SUV53 and SUV51.

In accordance with the procedures outlined in ITU-T G.993.5, the package of VDSL2 line cards and VECT5 identifies the crosstalk ratios between the VDSL2 signals on the transmission paths. The resulting matrix outlines the crosstalk behavior from each

VDSL2 line to every other VDSL2 line on the cable. This information is used to continuously correct all VDSL2 signals in real time, allowing to eliminate the negative effect of FEXT.

System level vectoring

System Level Vectoring, with its approach to compute VDSL2 signals from several VDSL2 units which use one DSL cable binder, achieves the best results to eliminate FEXT. With one VECT5 and 8 SUV51 units a Vectoring group size of 384 VDSL2 lines with 8, 12 or 17 MHz profiles is supported,

while with one VECT5 and 6 SUV51 units a Vectoring group size of 288 VDSL2 lines with 35b profile is supported.

Installation

Groups of up to eight MileGate SUV51, or up to six SUV53 line cards communicate with the VECT5 in order to supply the system level vectoring. The exchange of real-time correction information between the SUV53/ SUV51 VDSL2 line cards and the VECT5 unit is realized via front cabling.

The VECT5 is optimized for the operation in street cabinets in FTTC network architectures.

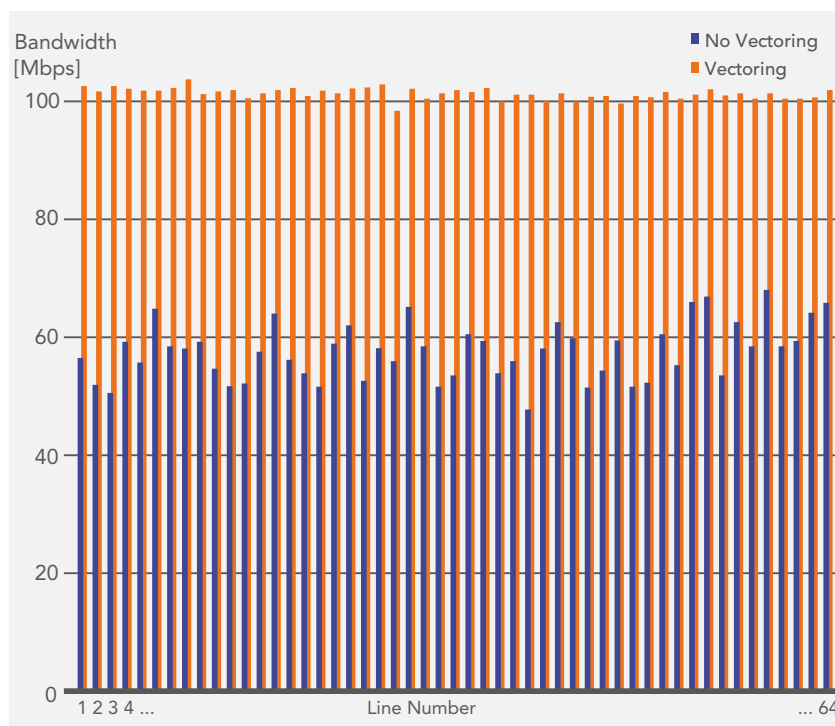
Long reach

Even though vectoring yields the greatest performance improvement on short to medium cable lengths, for operators it is important to also conduct long VDSL2 distances with vectoring because often both long and short distances occur in the same DSL

cable binder. MileGate VECT5 takes this into account by supporting vectoring up to 2,400 m.

Management

All services are managed centrally via the management system (UNEM) or via local management access (CLI, XML, SNMP).



Typical bandwidth for VDSL2 in mass deployments (600m, 0.5mm, 64 lines, only 50 are shown)

Technical Data

General	
Vectoring method	System Level Vectoring Full cancellation: All disturbers will be eliminated against every connected transmission line
Number of controlled VDSL2 line cards	Up to 8 SUV51 / up to 6 SUV53
Vectoring group size	Up to 384 VDSL2 lines with 8, 12 or 17 MHz profiles (SUV51) Up to 288 VDSL2 lines with 35b profile (SUV53)
Vectoring standard	According to ITU-T G.993.5
Compatible VDSL2 line cards	SUV53 (48 Ports VDSL2 with 8, 12, 17 and 35 MHz profiles) SUV51 (48 Port VDSL2 with 8, 12 and 17 MHz profiles)
Optimization	Performance (data rate/transmission reach) Stability (higher margin) Long Reach Vectoring up to 2,400 m UniVect mode – automatic selection of best transmission Legacy friendly mode – operation with non-vectoring CPEs
Management	
MCST	For local management
UNEM	For central management
Power Supply	
Input voltage nominal (min/max)	–48/–60 V DC (–39.5 V DC ... –72 V DC)
Operation Environment	
Temperature range and humidity	According to MileGate environmental specifications