

The Best Low-cost Capacity Boost for Access Networks is also the Greenest

Infinera TG-Series

Need to Increase Your Access Network Capacity?

The requirement for greater capacity is forcing network operators, service providers and enterprises to think about how to increase access capacity as cost-effectively as possible.

The big challenge is to best utilize existing fiber infrastructure, while evolving networks to support all types of applications, including fiber to the x (FTTx), storage area networks (SANs), high security networks and various residential and enterprise offerings.

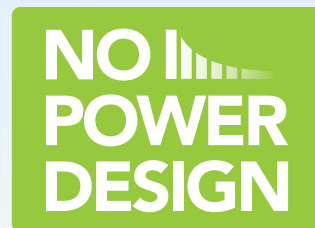
Infinera tackled all this and more when designing the TG-Series passive optical platform. Featuring both coarse wavelength-division multiplexing (CWDM) and dense wavelength-division multiplexing (DWDM) filters, the TG-Series gives you:

- A green and affordable way to lift capacity in access networks
- Easy capacity expansion, anytime, anywhere
- Support for all applications, architectures and infrastructures in one solution

In addition, you gain durability, security, a small footprint and the energy efficiency that comes with passive equipment.

A Green and Affordable Way to Lift Capacity in Access Networks

The TG-Series passive optical filters can immediately expand your fiber network to support wavelength-division multiplexing (WDM), thus adding all the capacity you need. The number of active aggregation locations can be radically reduced simply by adding passive aggregation locations and colored small form-factor pluggables (SFPs) to access systems such as digital subscriber line access multiplexers (DSLAMs) and multi-service access nodes (MSANs). This can significantly lower both operational costs and power consumption.



No Need for Power or Software

Being a totally passive solution, the TG-Series requires neither power nor software. Thus, it's truly an environmentally-friendly approach. However, for a full overview of the passive nodes in your access network, the Infinera Transport Network Manager (TNM) can be used.

Cost-efficient Operations

Commissioning and installing the TG-Series is simple, which keeps training requirements low and time to revenue short. When troubleshooting is necessary, this is readily handled via special monitor ports on the filters. In addition, the compact filter housing requires only a small footprint in offices, street cabinets or underground manholes—yet another reason why the TG-Series is so economical to operate.

Expand Your Capacity, Anytime, Anywhere

The beauty of WDM is that capacity is so easy to expand, over and over again. You simply add another wavelength. If another enterprise is being added to the access network, just provide the enterprise with a wavelength of its own. Or you can provide several wavelengths depending on the capacity required. The key here is that capacity to one customer is not fixed and can easily be increased.

Choose CWDM, DWDM or Both!

The TG-Series supports up to 18 CWDM wavelengths (or channels) and up to 80 DWDM wavelengths or a combination

of CWDM and DWDM. This provides the ultimate in futureproofing.

Taking WDM Deeper

With the TG-Series' environmentally-toughened optical filters, you can bring WDM to parts of the access network where it was previously inappropriate due to price/space/power issues. The TM-Series, which originally was designed for metro networks, can be used deeper into access networks and applications when deployed with the TG-Series. Your capacity will increase along with your business potential, as old and new customers sign up for additional bandwidth in residential and enterprise services.

The TG-Series Has a Wide Range of Passive Filters

The CO-D40EV is one example of a 40-channel filter. Combining it with CWDM filters carrying up to 12 additional wavelengths provides up to 52 wavelengths to the access network.



Application- and Architecture-agnostic for Freedom and Flexibility

The TG-Series is designed to serve as a shared infrastructure, regardless of whether the traffic flow comes from FTTx, storage area networks or high-security networks between banks and, for instance, private homes or enterprises. One solution fits all—now and in the future!

Likewise, in terms of architecture the TG-Series supports point-to-point, mesh, bus or ring networks as well as single fiber and fiber pair—all with full flexibility and related gains in cost-efficiency.

Rugged and Secure

With its durable design and construction, the TG-Series works in harsh conditions

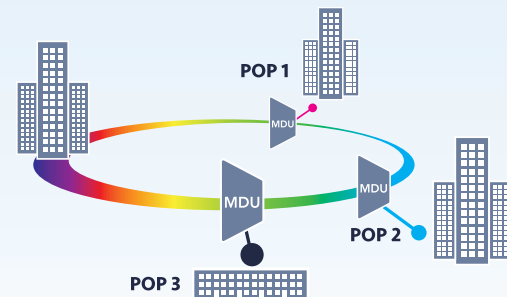
such as underground and extreme temperature installations. The TG-Series enables the moving of passive filters away from sensitive locations and to places where they are less vulnerable to accidental or deliberate fiber breakage.

This is of particular value in high-security networks carrying sensitive traffic, and where service level agreement (SLA) conflicts can lead to revenue loss. The filters allow fiber to be spliced in underground chambers instead of in optical distribution frames (ODF), in public colocation facilities or in exchange buildings, thus diminishing the risk of traffic disruptions.

The TG-Series supports all kinds of applications from one shared passive optical solution.



The TG-Series of optical filters placed in manhole locations. Add/drop only the wavelengths required for the particular spur—the rest of the spectrum is bypassed. This is particularly valuable in high-security applications.



TG-Series Portfolio

The list below gives details of some of the available options within the TG-Series. Please contact Infinera for further product details on these or the full range of TG-Series components.

| CWDM FILTERS | DESCRIPTION |
|-----------------------------------|---|
| CO-CMDU18/1 | 18 ch CWDM MDU for fiber pair configurations |
| CO-4 | 8+1 ch CWDM MDU (1550), 1310 nm port |
| CO-5 | 8 ch CWDM MDU (1310) |
| CO-6 | Optical Band Unit (1310/1550) |
| CO-7 and CO-9 | 4 ch MDU |
| CO-8 and CO-10 | 4 ch MDU with two upgrade ports |
| CO-11/x | OADM single sided |
| CO-12/x | OADM dual sided |
| CO-13/xy | 2 ch OADM single sided |
| CO-14/xy | 2 ch OADM dual sided |
| CO-SF4-TA/1470 and CO-SF4-TB/1470 | 4 ch Single Fiber MDU, A and B version |
| CO-SF4-EA/1270 and CO-SF4-EB/1270 | 4 ch Single Fiber MDU, A and B version, with upgrade port |
| CO-SF1/yyyy | 1 ch Single Fiber OADM single sided |
| CO-SF2x1/yyyy | 1 ch Single Fiber OADM dual sided |
| CO-OCU8020 | Optical Coupler Unit 80/20 |
| CO-OCU9010 | Optical Coupler Unit 90/10 |
| DWDM FILTERS | DESCRIPTION |
| CO-Dxxx-xxx | 8 ch MDU ch xxx-xxx with upgrade port |
| CO-D40EV | 40 ch MDU |
| CO-D40OD | 40 ch MDU 50 GHz odd |
| CO-D40EV-E | 40 ch MDU with 1310 port |
| CO-BSU1X5EV | 5 port optical band unit |
| CO-BSU1x5OD | 5 port BSU 50 GHz odd |
| CO-D1-xxx | 1 ch/2 fiber AD, 50 GHz EV xxx |
| CO-D2-xxx | 2 ch/2 fiber AD, 50 GHz EV xxx |
| CO-D4-xxx | 4 ch/2 fiber AD, 50 GHz EV xxx |
| CO-DSF2/xxx | 2 ch OADM SF yyy-xxx |
| CO-DSF4/xxx | 4 ch OADM SF yyy-xxx |
| CHASSIS | DESCRIPTION |
| RMP-9014/01 | 19" 14 slot 3 RU rack mounted panel |
| RMP-9003/01 | 19" 3 slot 1 RU rack mounted panel |
| CO-FM/01 | Fiber management unit |
| WMC-9002/01 | Wall mounted cabinet |
| RMP-9002/01 | 19" 2 slot 1 RU rack mounted panel |



TG RMP-9014


TM-Series Ethernet Demarcation Unit
in TG-Series Chassis


TG RMP-9003



Fiber Management

About Infinera

Infinera (NASDAQ: INFN) provides Intelligent Transport Networks, enabling carriers, cloud operators, governments and enterprises to scale network bandwidth, accelerate service innovation and simplify optical network operations. Infinera's end-to-end packet-optical portfolio is designed for long-haul,

subsea, data center interconnect and metro applications. Infinera's unique large-scale photonic integrated circuits enable innovative optical networking solutions for the most demanding networks. To learn more about Infinera visit www.infinera.com, follow us on Twitter @Infinera and read our latest blog posts at: blog.infinera.com.

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