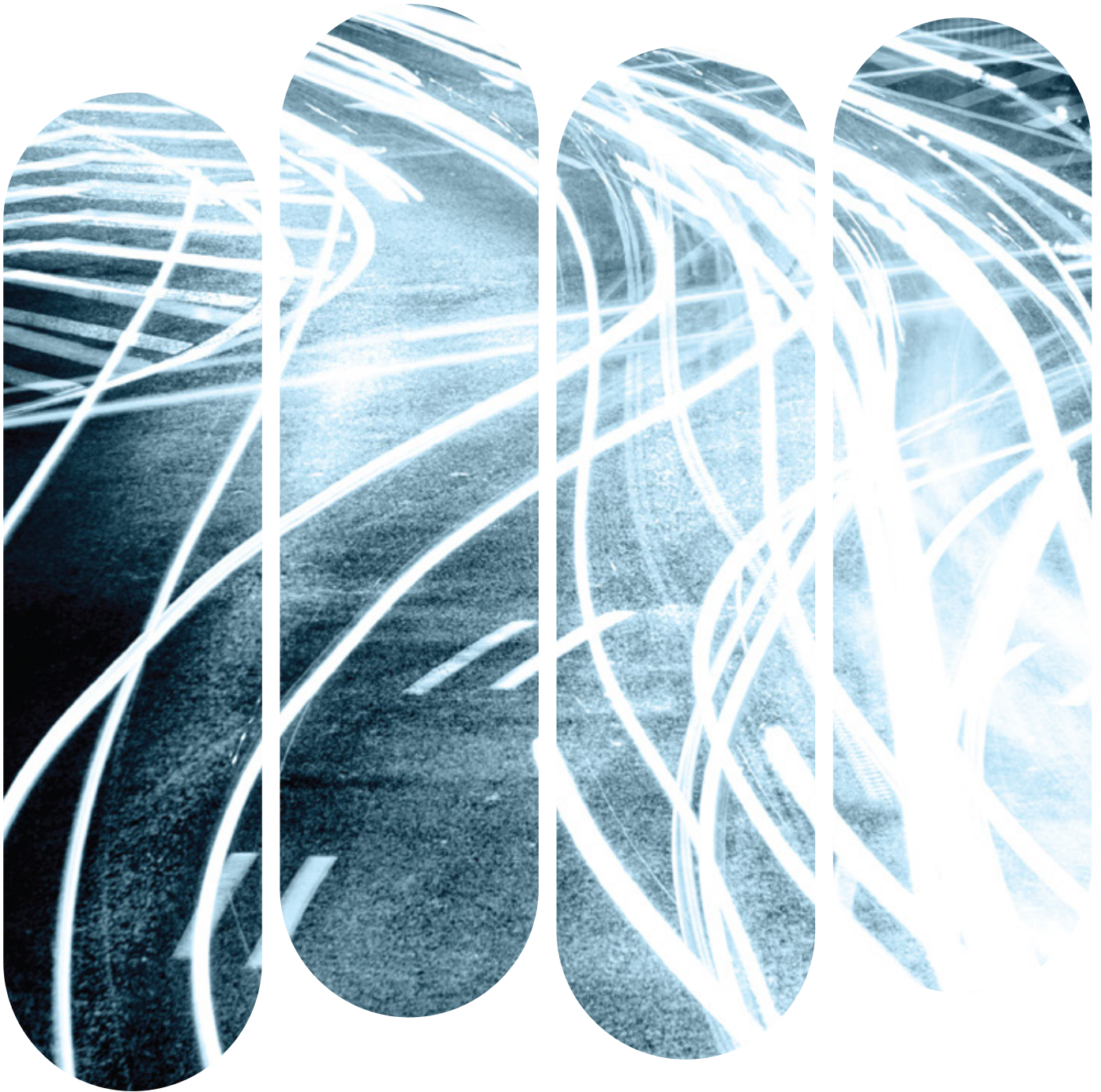


G.fast



**ULTRAFAST
BROADBAND
OVER COPPER**

WHAT IS G.fast?

G.fast has emerged as the latest technique to extend the life of a telecom's existing copper network without the costs and challenges of deploying an all fiber-based Fiber network.

SCALABLE AND FLEXIBLE G.fast SOLUTIONS FOR YOUR BUSINESS (UP TO 1GBPS)

The demand for higher data rates is continuously increasing. Applications like cloud computing, video streaming, big data, and the Internet of Things drive these demands. Strong competition of cable network (DOCSIS 3.1) and LTE operators increases the pressure on traditional network operators to deliver high speed services. Furthermore, in-house installation is difficult and specific to each house.

FTTdp is an acronym for Fiber To The Distribution Point. It is very similar to FTTC (Fiber to the Curb) or FTTN (Fiber to the Node), but is one-step closer to the boundary of the customer's premises, thus allowing near-gigabit speeds.

In a typical FTTdp deployments, a limited number of subscribers at a distance of up to 10-300 m are linked to 1 fiber node.

A G.fast FTTdp fiber node is a small self enclosed box and can be set up outdoors (on a pole or underground) or indoors (in the basement or on the floor).

WHO BENEFITS FROM IT?



Multi dwelling unit



Low user density rural sets



Condominium



Industrial park networks



High density urban networks



TECHNICAL DESCRIPTION

The G.fast DPU and CPE are the right choices to reuse existing twisted copper pair / coaxial cables (P2P) based access networks to deliver ultra high bit rate (fiber alike) triple play services to customers.

G.fast technology based on ITU-T G.9700 and ITU-T G.9701 specifications provides triple play service at Gbps speeds.

TECHNICAL AND BUSINESS BENEFITS

- Achieve fiber performance reusing existing copper infrastructure;
- Deliver premises multi-play services (Voice - VoIP, Data – GbE, TV – IPTV and RF Overlay (only when using coax));
- CPE Customer self installation;
- Avoid licensing impairments;
- Reverse power feed;
- Indoor/outdoor mounting options.

OUR SOLUTION

- Support of all DPU virtualizer functionalities;
- Netconf/Yang enabled solution;
- Support of DPU offline management;
- Support of ZTC;
 - The “Zero Touch Configuration” allows the automatic configuration of the DPU when it is connected to the network for the first time;
 - DPU’s IP address obtained through DHCP;
- e2e connectivity, provisioning and monitoring;
- Network programmability;
 - The exposure of all operations in a complete NBI allows the virtualization of the underlying network domain so that external Applications or higher hierarchy SDN Controllers can actually “program the network”;
 - Easy integration with third-party management/ information systems;
- Ensure performance and reliability through the FCAPS.

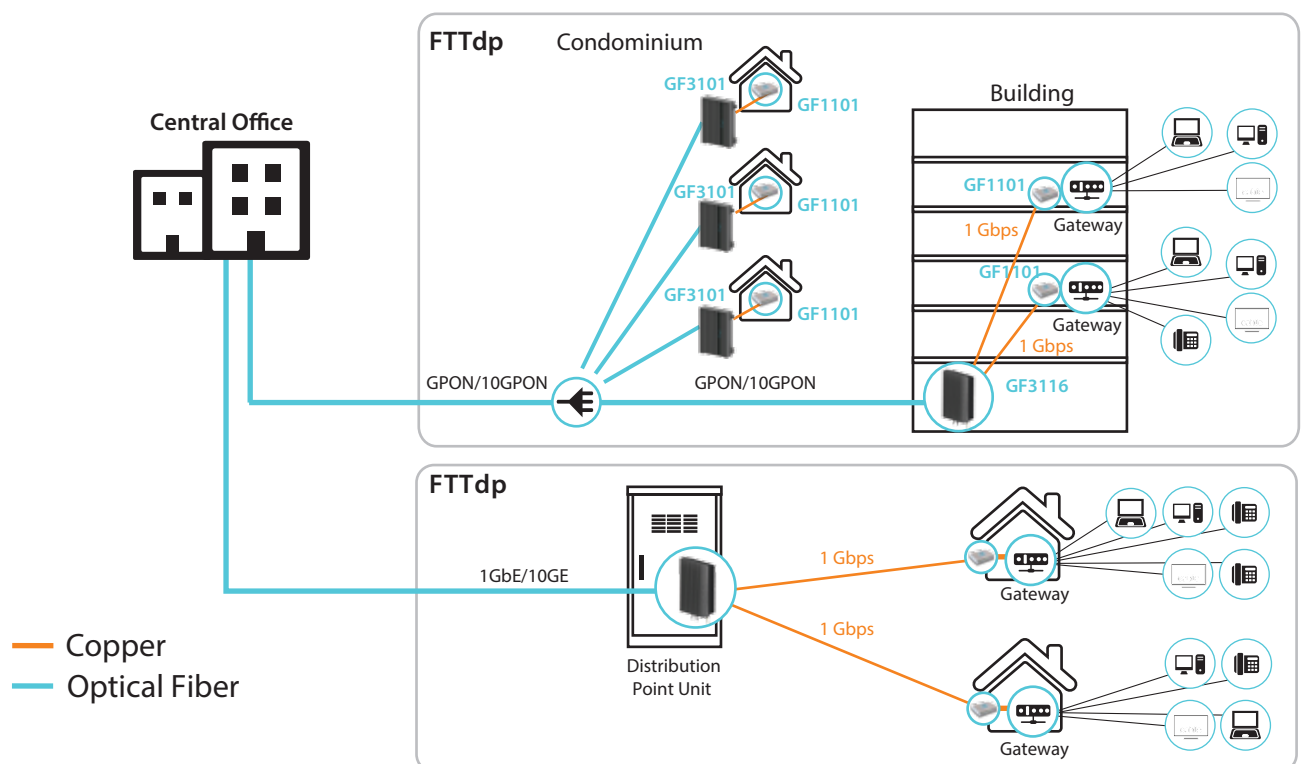
LEVERAGE YOUR EXISTING COPPER WIRING

THE ARCHITECTURE

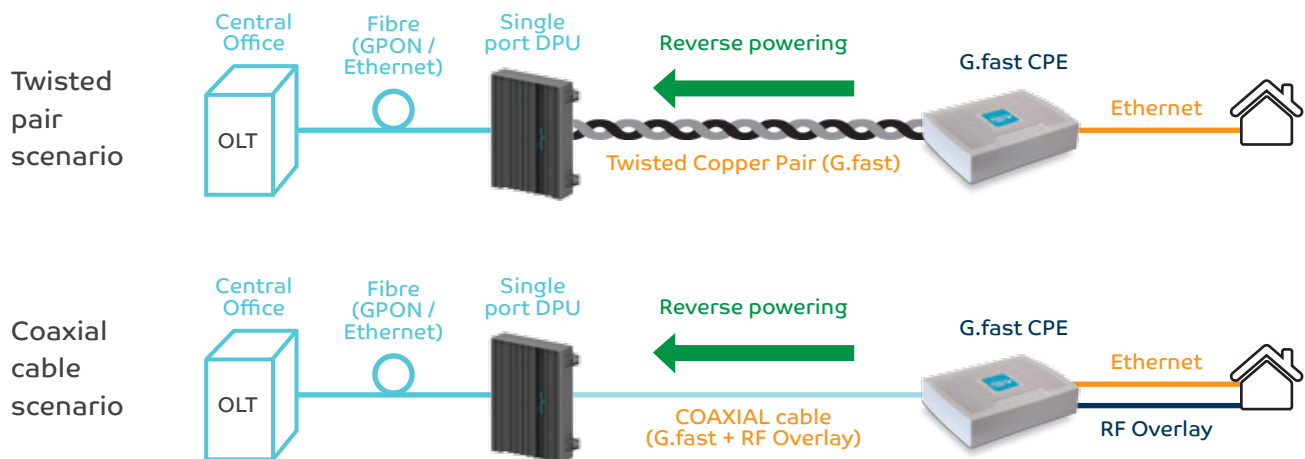
The main objective of FTTdp is to provide much higher data rates than cabinet based DSL over the final part of the existing copper connection to the customer.

Locating a new, high-speed access node at the DP and reusing the existing copper drops has several advantages over FTTP, namely:

- It avoids the need to install new infrastructure into and around the home, i.e. there is no need to install a new fiber cable between the DP and the home, or drill a hole in an external wall to take the fiber into the home, or install fiber between the entrance point and the ONT;
- It allows customer self-install which removes the need for a visit to the customer premises with its attendant cost, time and logistical downsides;
- It reduces the time between receiving and being able to fulfill a customer order.

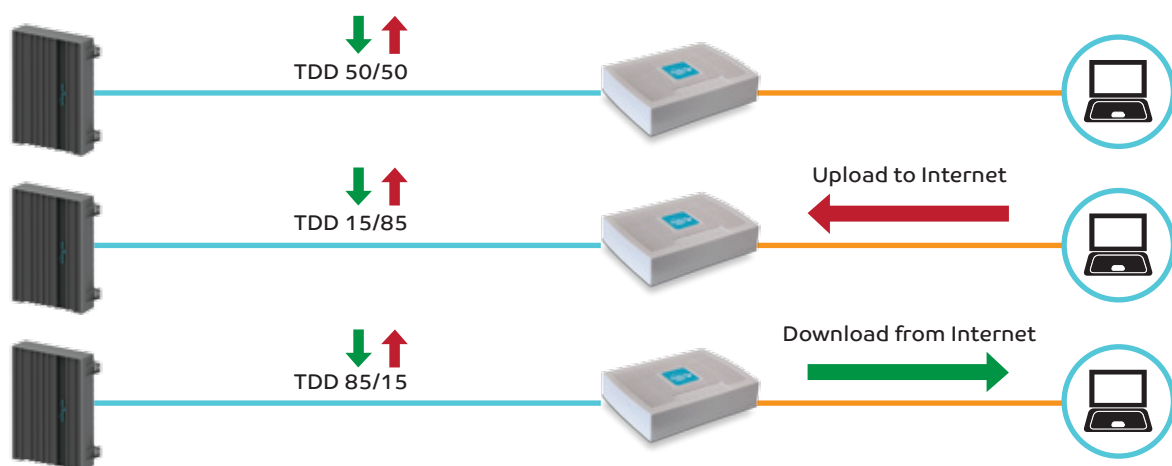


GPON EXTENDER



The Single port DPU + G.fast CPE truly work as a GPON extender, providing fiber speeds without the cost and hassles of having to take the fiber all the way into the customer premises. Together with the Reverse Power Feed, the fact that the CPE can be self-installed by the customer and the capability of using twisted pair or coax makes this an interesting option for Service Providers.

DTA - DYNAMIC TIME ASSIGNMENT



If DTA is selected the system listens for the demands of each consumer and to coordinate the upstream and downstream traffic to optimize the solution for the subscriber based on how he uses broadband. This change on the up/down ratio doesn't require any intervention, the system does it automatically on-the-fly.

SUITABLE FOR LOW AND HIGH DENSITY AREAS

G.fast DPU



GF3116 - 16 Port G.fast DPU

- G.fast Outdoor / Indoor DPU with 16x G.fast ports (Twisted pair or coaxial cable);
- 2x GPON or Ethernet Uplink fiber interfaces;
- External dimensions (HxWxD): 366x276x108 mm;
- IP68 class protection / fully sealed;
- Maximum power dissipated: 50W / Passive cooling;
- Reverse Power Feed, Local power (at 12VDC) or Network Powered (from the Central Office).



GF3101 - Single port G.fast DPU

- 1x G.fast port (Twisted pair or coaxial cable) DPU;
- 1x GPON or Ethernet Uplink;
- RF Overlay if coaxial cable is used;
- External dimensions (HxWxD): 200x160x70 mm;
- IP68 class protection;
- Reverse Power Feed.

G.fast CPEs

GF1101

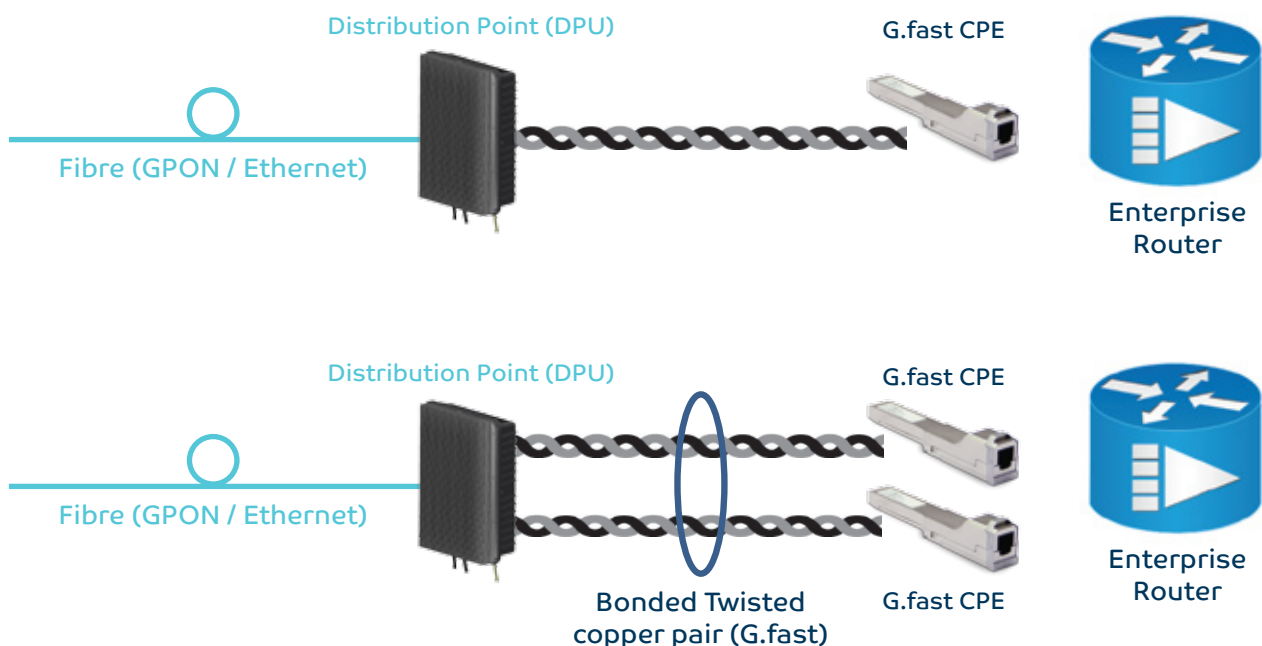


- ITU-T G.fast Recommendation (G.9700/1);
- Support for ITU-T G.997.2 and supports ITU G.994.1 G.hs;
- Spectrally co-existent with legacy technologies, e.g. ADSL, VDSL;
- Max PHY rate: 1Gbps per line;
- Flexible downlink/uplink bit rate ratio;
- Robust with high immunity to disturbers;
- Fast Online Reconfiguration (OLR) and fast train/retrain time;
- Flexible DTU size;
- Low power consumption;
- Gigabit Ethernet (100/1000BaseT);
- Time-of-Day (ToD) synchronization to external clock reference;
- Synchronization using low accuracy management protocol, IEEE1588 or one PPS signal;
- 8KHz Network Time Reference (NTR) support between DP and CPE.

GF1500



G.fast 1500 SFP key applications



ENABLING DIGITAL SOCIETY



ALTICE LABS

www.alticelabs.com



— ABOUT ALTICE LABS

Delivering key telecommunications technologies and services for more than 65 years, following a vocation that has spanned both the analogue and digital ages.

Our mission is to support our clients building technological innovation and creating value through advanced and differentiated solutions they need.

Altice Labs is an innovation and transformation catalyst. Through technology, we work every day to improve people's lives and the ways in which companies do business.