



## New FTTH-PON Network for extended numbers of users

A new Passive-Optical-Network (PON) for Fiber-To-The-Home (FTTH) services has been developed in the frame of the National Research Project TEYDE. While current FTTH networks as GPON and EPON can reach a maximum of 32-64 users, the proposed PON can serve more than 4000 users, thanks to a new device for distributing the signal among the users that intelligently recycles the noise generated by other elements of the network. Partners to further develop the device and/or to establish license agreements with technical cooperation are sought.

### The Challenge

Access to internet is limited for many people to slow speed or a high cost. A fiber arriving to each home is proving nowadays 100Mbps in USA and Japan by GPON (Gigabit PON) and/or EPON (Ethernet PON) FTTH networks at the same prize of 6Mbps ADSL services in Europe. While ADSL provides service to one user per cooper pair cables and GPON and EPON serve to 32-64 users, this new promising technology can provide access to more than 4000 users per PON network.

### The Technology

Successful current FTTH-PON networks as GPON and EPON distribute the signal among the users by splitting it. For example, if providing signal to 64 users, only about 1% of the signal power can be distributed to each home.

This technology regenerates this 1% to a 99% level, at a new design of the common passive power splitter used in GPON and EPON, by recycling the noise generated by the transmitter device of the user terminals. So that maintaining a Passive network, the PON network can be extended up to 1000 users (4000 users by FEC techniques).

### Innovative advantages

- Extension of FTTH-PON networks to 4000 users
- Re-utilization of noise, for a higher energy efficiency network
- Fibre outside plant maintained passive, by new design of the typical GPON and EPON power splitters
- Scalable and adaptable solution to Next-Generation PONs

### Current stage of development

Tested and demonstrated at Laboratory level

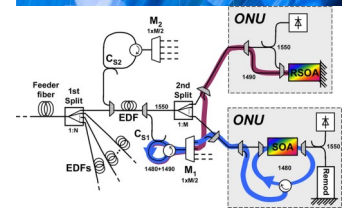
### Applications and Target Market

This technology is interesting for FTTH operators and FTTH equipment fabricants to develop a Next-Generation PON network.

### Reference number

MKT2011/0024\_I

**New device for distributing the optical signal among more than 4000 users almost without signal power division.**



**New design of the common passive power splitter used in GPON and EPON standards.**

**The technology re-utilizes the noise and regenerates the 1% of the signal power distributed to each user to a 99% level.**

### Business Opportunity

Technology available for licensing with technical cooperation

### Patent Status

Patent priority application filed

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