FAGOR ELECTRÓNICA | IKUSI

Connectivity and networking

Offer your users easy and secure connectivity that
works as they expect and demand.

WIFI - WICONNECT
GPON
IP- ETHERNET

FAGOR ELECTRÓNICA | IKUSI

WIFI SERVICE
WiConnect

WICONNECT

HIGH CONNECTIVITY AND SECURE COVERAGE
Fagor presents a set of solutions designed to achieve efficient, secure and responsible Internet access in a high capacity multiservice network infrastructure, using coaxial cable, Ethernet cable and fibre optics.
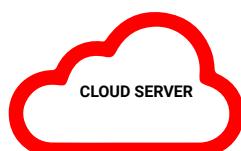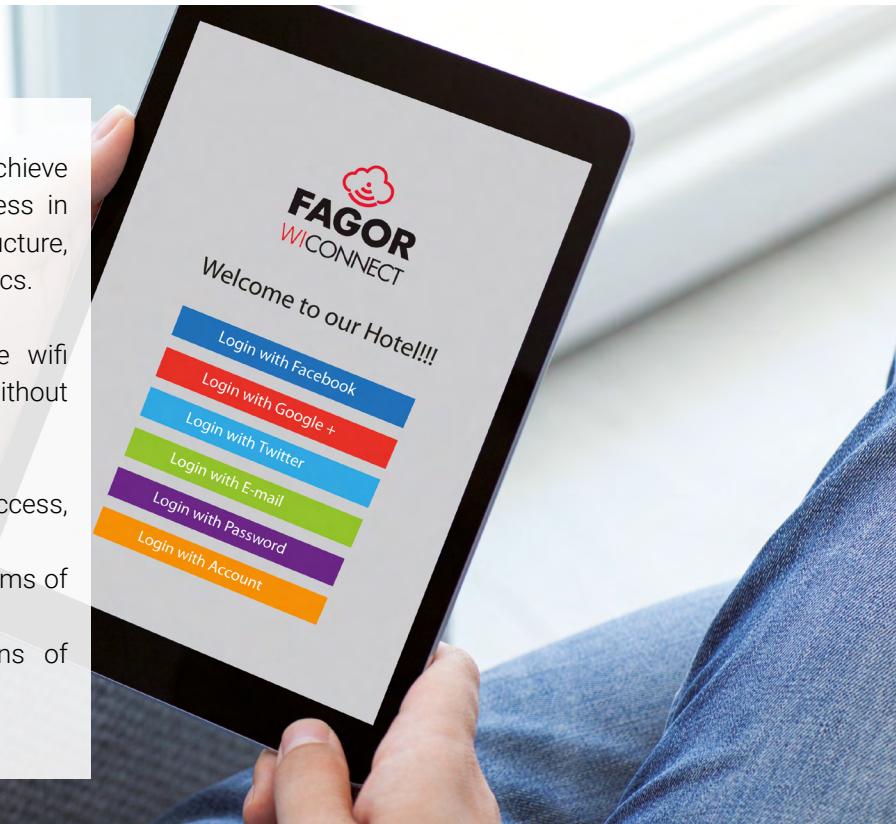
Through the device, the guest accesses the wifi network via the WICONNECT connection, without contacting the reception desk.

Professional management of guest wifi access, including:
Customisable captive portal, disclaimer with terms of service use.
Definition of different profiles and allocations of bandwidth, user/password, RRSS, email...

FAGOR WICONNECT

Welcome to our Hotel!!!

Login with Facebook
Login with Google +
Login with Twitter
Login with E-mail
Login with Password
Login with Account

CLOUD SERVER

FAGOR WICONNECT
APP

MOBILE   LAPTOP   TABLET
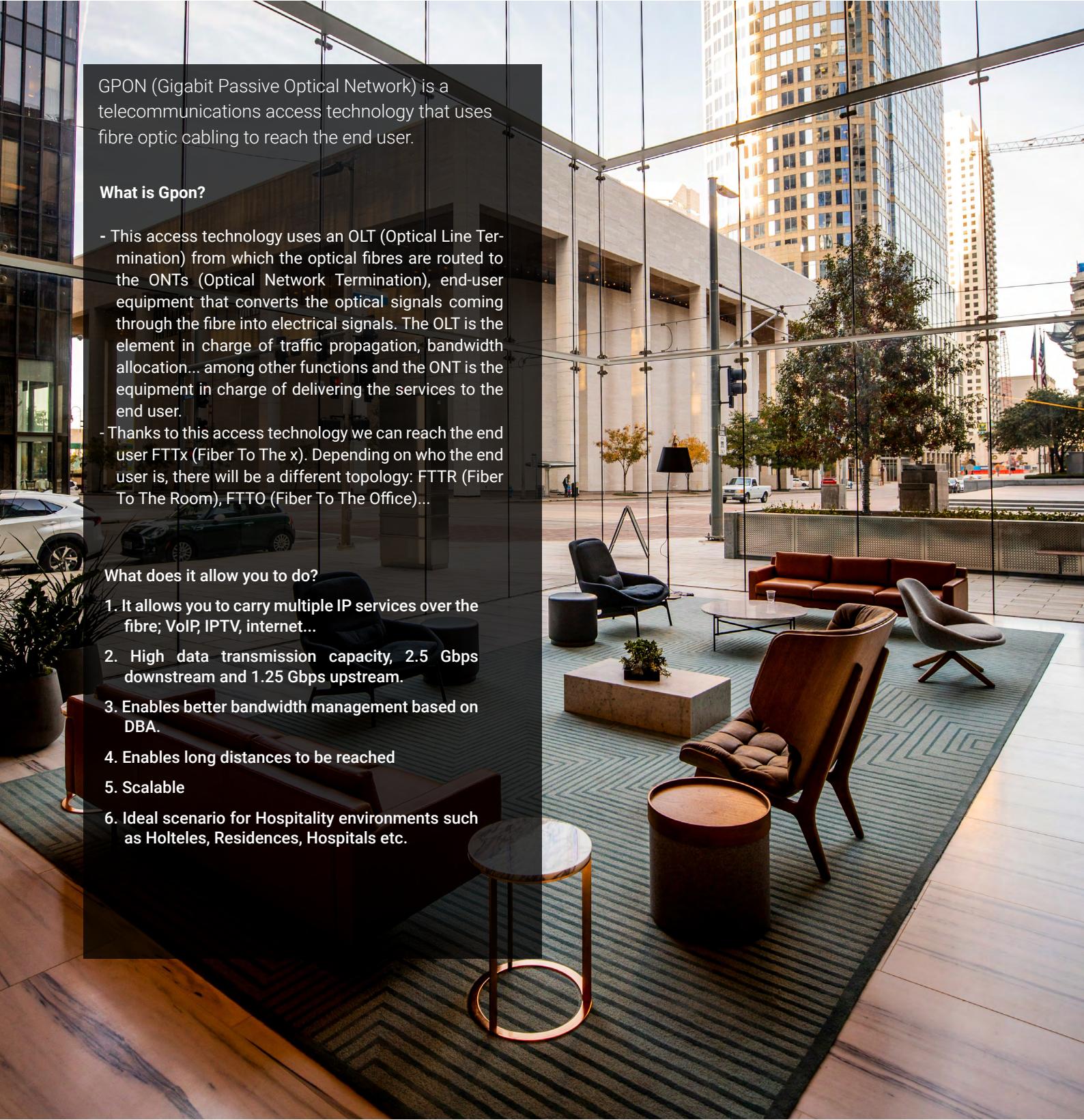
REF.	MOD.	DESCRIPTION
SOFTWARE		
10210	CSU 001	Cloud Connect Server
10350	FMO-050	WiConnect (hotspot)
HARDWARE		
10511	ROR 301 -UI	ROUTER

www.fagorelectronica.com

CONNECTIVITY
GPON TECHNOLOGY

GPON (Gigabit Passive Optical Network) is a telecommunications access technology that uses fibre optic cabling to reach the end user.

What is Gpon?

- This access technology uses an OLT (Optical Line Termination) from which the optical fibres are routed to the ONTs (Optical Network Termination), end-user equipment that converts the optical signals coming through the fibre into electrical signals. The OLT is the element in charge of traffic propagation, bandwidth allocation... among other functions and the ONT is the equipment in charge of delivering the services to the end user.
- Thanks to this access technology we can reach the end user FTTx (Fiber To The x). Depending on who the end user is, there will be a different topology: FTTR (Fiber To The Room), FTTO (Fiber To The Office)...
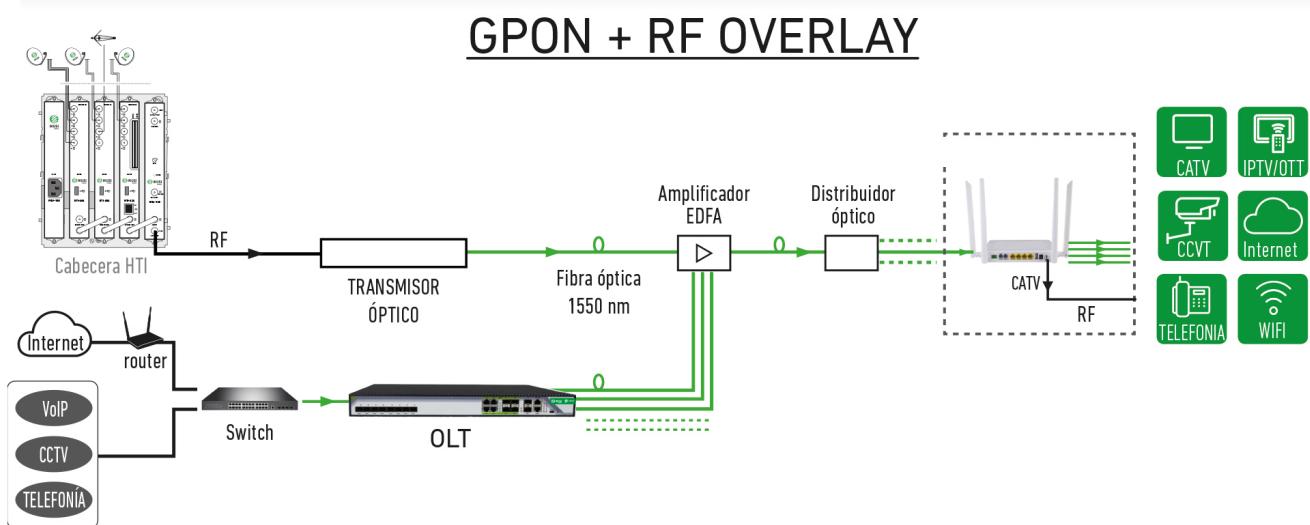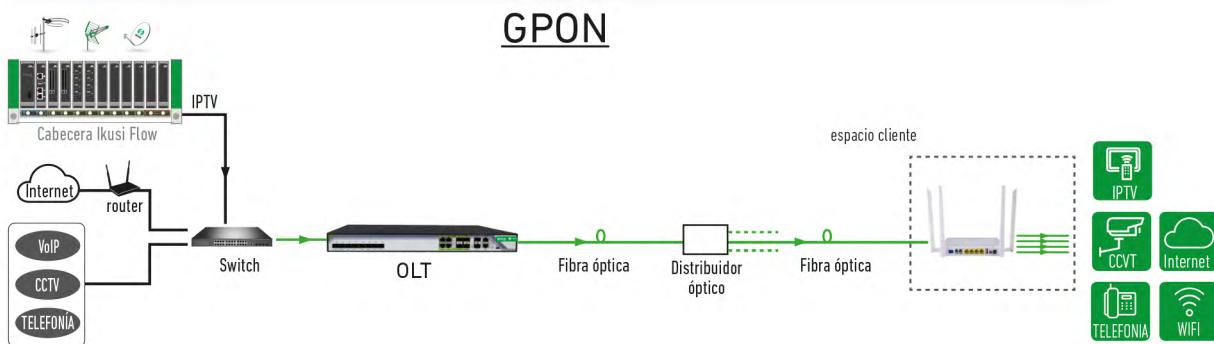
What does it allow you to do?

1. It allows you to carry multiple IP services over the fibre; VoIP, IPTV, internet...

2. High data transmission capacity, 2.5 Gbps downstream and 1.25 Gbps upstream.

3. Enables better bandwidth management based on DBA.

4. Enables long distances to be reached

5. Scalable

6. Ideal scenario for Hospitality environments such as Holteles, Residences, Hospitals etc.
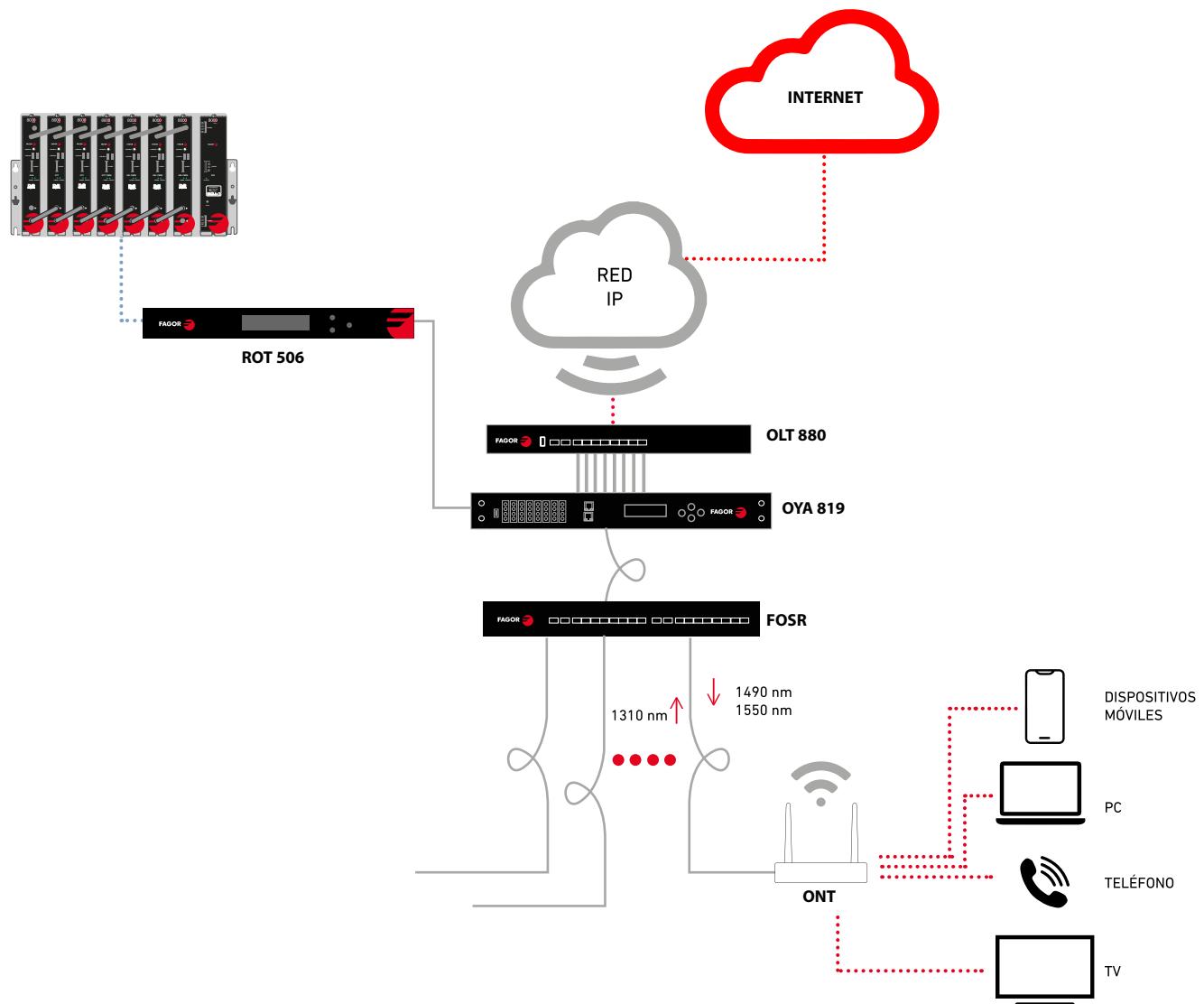
CONECTIVITY
GPON TECHNOLOGY

- IKUSI's GPON OLTs are specially adapted to their application in hospitality: hotels, hospitals, singular buildings, ... They are fully compatible with the ITU-T G.984X standard, resulting in an open platform, ready for all types of IP services: Data, VoIP, IPTV,..., or digital TV multiplexing with IKUSI's RF overlay equipment.

- Mechanically it is 1U high, and can be mounted in a 19" rack.

- Redundant power supply.

- Downlink: 8 GPON ports to be used with SFP C+ (SFP-125 ADAT. SFP GPON OLT C+: cod. 8325) or SFP B+ adapter. They are capable of supporting up to 8x128=1024 (OLT-008) ONUs, with a maximum optical split ratio of 1:128. Each GPON port, has a bitrate of 2.488 Gbps upstream and 1.244 Gbps downstream.

- Uplink: 4GE + 4GE (SFP) + 2 X 10GE (SFP+).

## TYPICAL SCHEME
GPON + RF Overlay

INTERNET

RED IP

ROT 506

OLT 880

OYA 819

FOSR

1490 nm
1550 nm

1310 nm

ONT

DISPOSITIVOS MÓVILES

PC

TELÉFONO

TV

OLT/GPON
OLT 008

The OLT (Optical Line Terminal) is a device that integrates layer 2/3 functions, and controls both directions of communication (downlink and uplink), with 20 km being the maximum distance allowed for the transmission of information.

It can transmit multiple IP services: IPTV, Internet, telephony, CCTV... among others. It also facilitates the management of the optical network.

8 PON
1 GE (RJ45)
1 GE (SFP)
AUX
10 GE (SFP+)
LED estado

GENERAL FEATURES
- 1U - 19 inch
- Redundant Power Supply - Power Consumption < 70 watt
- Power supply
- DC -36V ~ -72V
- AC 90V ~ 240V 47/63Hz
- Dimensions 440 x 391 x 44 mm (L x W x H)
- Weight 4 kg
- Operating temperature 0°C to 50°C
- Ambient humidity 5% to 90% (non-condensing)

MODEL	OLT-008
Reference	8302
Downlink PON	8
Uplink Ethernet 10/100/1000 Mbps	4
SFP	4
SFP+	2
Management	1
Console 1	1
USB	1

GPON FEATURES
- ITU-T G.984.x and ITU-T G.988 compliant - 20 km transmission distance
- Transmission distance of 20 km - Up to 128 ONTs per PON port
- Up to 128 ONTs per PON port - SC/UPC connectors - Supports Class B+ - Sensitivity -28 dBm
- SC/UPC connectors
- Supports Class B+ - Sensitivity -28 dBm - Saturation -8 dBm
- Supports Class c+ - Sensitivity -30 dBm - Saturation -12 dBm
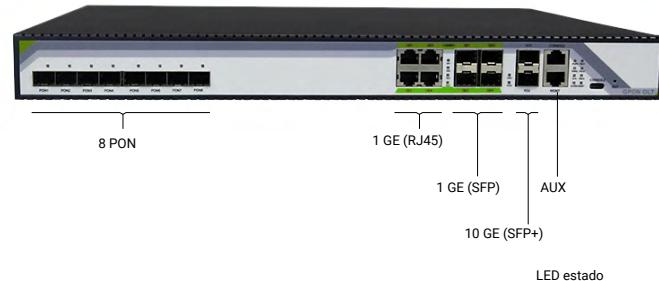
Ethernet Features
- Auto-negotiation
- Full/half duplex mode
- 4 x 10/100/1000 Mbps RJ45 ports

FEATURES
Network Management
- CLI, Web, Telnet, SSH, SNMP, and EMS
GPON
- Supports dynamic bandwidth allocation
- AES encryption
- Flow control
- Auto discovery

- Supports multiple authentication systems
- ONT management
Layer 2:
- Supports 4094 VLANs
- VLAN tag/untag
- Trunk/access/hybrid port
- Supports "VLAN translating" and "VLAN stacking: QinQ".
- Port isolation
- Port mirroring
- Spanning-tree
- RSTP
- Access Control List
- QoS
- Port, VID, TOS and MAC address level management

- Flow control
- Multicast
- IGMP snooping/proxy
- Multicast group support
Layer 3: - DHCP-relay and DHCP-snooping
 DHCP-relay and DHCP-snooping
- Supports "vlanif
- Support link-aggregation
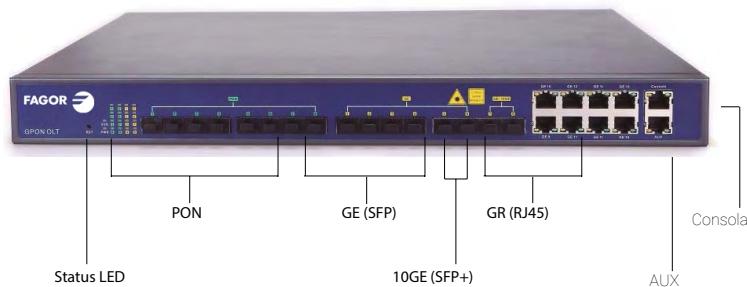
OPTICAL LINE TERMINATION FOR GPON NETWORKS
OLT series

Headend equipment for GPON networks. Intuitive Web-based configuration without the need for external systems. 8 GPON downlink ports.

FEATURES

- 6 GE SFP ports. 2 10GE SFP+ ports. 8 GE RJ45 uplink ports.
- ITU-T G.984.x and G.988 compliant.
- Remote management via SNMP/WEB/EMS.
- Speed per PON port: downstream 2.5Gbps. upstream 1.25 Gbps.
- Supports ONT auto-discovery and remote software upgrade via OMCI.
- Dual hot-swappable power supply.
- 1U 19" rack.

MODEL		OLT 880
Reference		10421
INPUT		
Uplink Interfaces		2 puertos 10GE (SFP+) 6 puertos 1GE SFP 8 puertos 1GE RJ45
Management Interfaces		1 RJ45 FE AUX 1RJ45 consola
CATV input power	dBm	-5 a 10
OUTPUT		
No. of GPON ports		8 puertos SFP
No. of splitting per port		1:128
Downstream bitrate per PON	Gbps	2,488
Upstream bitrate per PON	Gbps	1,244
GPON standard		ITU-T G.984.X/G-988
Transmission distance	km	20
Wavelengths	nm	TX 1490 / RX 1310
SFP connectors		SC/UPC
Fiber type		9/125um SM
No. of VLANs		4096
VLAN management		port VLAN, tag/untag, transparent transmission, VLAN translation, QinQ
Multicast		256 grupos IP, IGMP snooping
DHCP		server, relay, snooping
QoS		por puerto, VID, TOS y MAC
Management interface		Web/Telnet/CLI/EMS
Management port		Ethernet RJ45
Status LED		IN/OUT/POWER
Mounting		19" rack 1U
Power supply (redundant)	Vac	100 ÷ 240, 50-60Hz
Consumption	W	45
Operating temperature	ºC	0 ÷ 50
Storage temperature	ºC	-40 ÷ 85
Storage humidity	%	5 ÷ 90
Dimensions	mm	422 × 200 × 44

ONT
ONT 524

High performance to guarantee an excellent experience with video services, VoIP, Internet... It integrates wireless functions to provide users with greater efficiency and security in data transmission, in addition to having a wide range of coverage and penetration.

GENERAL CHARACTERISTICS
- Power consumption < 13w
- Power supply DC 12V/1'5A - Power supply DC 12V/1'5A
- Dimensions 240 x 240 x 24 mm (L x W x H x D)
- Weight 317 g
- Operating temperature 0-40°C
- Ambient humidity 10% to 90% (non-condensing)
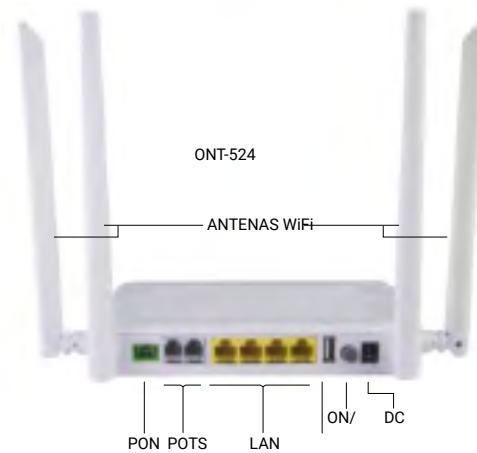
GPON features
- Compliant with ITU-T standard G.984.1/2/3/4
- Gemport encapsulation
- SC/APC connector
- Class B+
- Sensitivity -28 dBm
- Saturation -8 dBm
- FEC
- Supports AES encryption
- Supports dynamic bandwidth allocation
- Supports auto-discoveryLayer 2 and 3 functions
- VLAN tag/untag support
- DHCP client and server
- PPPoE client
- Static IP support
- Port binding support
- Multicast snooping/proxy support

Telephony features
- SIP/H248
- Codec compatible G711U/G711A/G729/G722
- Supported Fax Codec T38/G.711
- 2 RJ11 ports
- Jitter buffer
- Echo cancellation
- Call waiting and caller ID
- Ring balance

ONT-524

ANTENAS WiFi

PON POTS LAN ON/ DC

MODEL	ONT-524
Reference	8302
Ethernet ports	4
POT ports	2
CATV ports	x
WiFi	sí
USB	sí

WiFi Features
- IEEE802.11b/g/n/ac Standard
- Frequency range: 2'4 GHz and 5 GHz
- 2x2 MIMO
- 4 external 5 dBi antennas
- Multiple SSIDs
- WEP/WAP/WAP2 protection
- IEEE802.1x standard USB features
- 2.0 interfaceNetwork management
- Web
- Telnet
- TR069
- OMCI
- Missing ONT Alarm (Dying Gasp)
- Loop Detection Alarm
- Incident Alarm (Rogue)

OPTICAL NETWORK UNIT FOR GPON NETWORKS

ONT 825 PoE

GPON optical network terminal

FEATURES

- 8 10/100/1000BASE-T Ethernet ports with 48 V PoE.
- 1- and 2-band Wi-Fi with transfer rates from 300 to 1200 Mbps
- ITU-T G.984.x standard compliant
- Compatible with Triple play services: Internet, VoIP and IPTV
- Maximum speed: downstream 2.5Gbps, upstream 1.25 Gbps
- Management via OMCI, Web, SSH, TR069.

MODEL	ONT 825 PoE
Reference	10435
GPON standard	ITU-T G.984.X (G.984.5 WBF)
Class	B+
Wavelengths nm	Downlink 1490 / Uplink 1310
SFP connectors	SC/UPC
Authentication	SN or password according to G.984.3
Other	Flexible mapping between GEM port and TCONT
Ethernet ports	8GE RJ45 RJ45 POE (Max 30W/port) IEEE802.3at/af
Router functionality	Bridging & Switching (802.1d / 802.1q). 8 traffic priorities (802.1p). VLAN filtering. IGMP multicast for IPTV
WIFI SPECIFICATION	
Standard	IIEEE 802.11 b/g/n/ac
(2.4/5G) 2X2 MIMO	300Mbps (2.4G), 867Mbps (5G)
Bandwidth	300Mbps (2.4G), 867Mbps (5G)
Antenna	4x2dBi
Other	4+4 SSID
Management interface	Web/OMCI/TR069
Status LEDs	POWER/PON/LOS/WLAN
Assembly	Wall-mounted and table-top (weatherproof enclosure optional)
Power supply (redundant) V	48Vdc, 2.5A
Consumption W	<120W
Operating temperature ºC	-30 ÷ 55
Storage temperature ºC	-30 ÷ 60
Storage humidity %	10 ÷ 90
Dimensions mm	196 x 160 x 32
Weight Kg	0,32

OPTICAL NETWORK UNIT FOR GPON NETWORKS
ONT 115, 412 C & 425

GPON optical network terminal.

FEATURES

- Several 10/100/1000BASE-T Ethernet ports.
- 1- and 2-band Wi-Fi with transfer rates from 300 to 1200 Mbps.
- POTS port for telephony.
- Compatible with ITU-T G.984.x standard.
- Compatible with Triple play services: Internet. VoIP and IPTV.
- Maximum speed: downstream 2.5Gbps. upstream 1.25 Gbps.
- Management via OMCI. Web. SSH. TR069.

MODEL		ONT 115	ONT 412 C	ONT 425
Reference		10433	10431	10434
GPON Standard		ITU-T G.984.X (G.984.5 WBF)		
Class		B+		
Wavelengths	nm	Downlink 1490 / Uplink 1310		
SFP Connectors		SC/UPC	SC/APC	SC/UPC
Authentication		SN o contraseña según G.984.3		
Other		Mapeo flexible entre GEM port y TCONT		
Ethernet ports		4GE RJ45		
Router functionality		Bridging & Switching (802.1d / 802.1q) 8 prioridades de tráfico (802.1p). Filtrado de VLANs. IGMP multicast para IPTV		
CATV				
Bandwidth		---	47-1000MHz	---
Impedance		---	75	---
TELEPHONY POTS		82dBµV con CAG (+2~ -10dBm)		
REN				
Connectors		2 RJ11	1 RJ11	
Ring tones		DTMF		
Protocols		G.711A/µ, G.729a/b, and G.722, T.30/T.38/G.711 fax mode, SIP		
WIFI SPECIFICATION				
Standard		IEEE 802.11 /b/g/n (2.4) 2x2 MIMO	IEEE 802.11 b/g/n/ac (2.4/5G) 2x2 MIMO	IEEE 802.11 a/b/g/n/ac/ax (2.4/5G/WIFI6) MU-MIMO
Bandwidth		300Mbps	300Mbps (2.4G), 867Mbps (5G)	300Mbps (2.4G), 867Mbps (5G), 574+1201Mbps (WIFI6)
Antenna		2x5dBi	4x5dBi	4x5dBi
Others		4 SSID	4-4 SSID	4+4 SSID
Management interface		Web/OMCI/TR069		
Status LED		POWER/PON/LOS/LAN/TEL/USB/WLAN/WPS		
Mounting		Pared y sobremesa		
Power supply (redundant)	V	12Vdc, 1.5A (adaptador AC incluido)		
Consumption	W	<10	<12	<18
Operating temperature	ºC	0 ÷ 50		
Storage temperature	ºC	-30 ÷ 70		
Storage humidity	%	5 ÷ 95		
Dimensions	mm	205 x 140 x 37	173 x 120 x 30	205 x 140 x 37
Weight	Kg	0,34	0,42	0,34

OPTICAL TRANSMITTER

ROT series

1550 nm optical transmitter for use in FTTH. FTTx PON. Triple-play and RF Overlay.

APPLICATION

- Conversion of RF signals into amplitude-modulated optical signals for CATV HFC networks.

FEATURES

- Equipped with DFB laser. for very good linearity and high optical output power.
- Advanced multi-frequency RF predistortion technology ensures perfect CTB and CSO performance at high standard CNR value.
- Automatic gain control (AGC) enables stable output at different RF input levels.
- Different networks can be optimized by OMI adjustment.
- Automatic temperature control, which ensures a long service life of the device.

- Built-in dual backup power supply.
- Configuration of system parameters controlled by the front panel keypad or by the user-friendly web interface.
- A standard RJ45 interface is provided. which supports SNMP and WEB remote network management.

MODEL		ROT 506
Reference		10400
OPTICAL PARAMETERS		
Output power	dBm	6
Output wavelength	nm	1550
Laser linewidth		0,65
SMSR	dB	≥45
XP	dB	≥20
RIN	dB/Hz	≤-160
Optical return loss	dB	≥50
Fiber connector		SC/APC
RF PARAMETER		
Frequency Range	MHz	47-862
Input level	dBµV	70...100
Flatness	dB	±0,75
CNR	dB	≥51
CTB	dB	≥65
CSO	dB	≥60
Return loss	dB	≥16
Input impedance	Ω	75
RF connector		F-hembra
OTHER PARAMETERS		
Network management interface		SNMP y WEB
Power supply	V	90 ÷ 265
Power consumption	W	≤30
Operating temperature	ºC	-5 ÷ 55
Storage temperature	ºC	-40 ÷ 85
Operating relative humidity	%	5 ÷ 95
Dimension	mm	370 × 483 × 44

OPTICAL YEDFA AMPLIFIER

OYA series

Optical amplifier in rack format, compatible with EPON/GPON systems.

APPLICATION

- Suitable for fiber optic signal distribution.

FEATURES

- 8 WDM (RF Overlay+GPON) output ports.
- Output power 8*19dBm.
- Adjustable output power from -3 to 0 dB.
- Wide input range from -5 to 10 dBm.
- Very low noise figure.
- Input/output/status/power status indicator LEDs.
- Laser Bias input level and current monitoring and alarms.
- Dual hot-swappable power supply.
- Control and monitoring via WEB/SNMP.
- 1U 19" rack.

MODEL		OYA 819
Part number		10412
No. of ports OLT		8
INPUT		
CATV Wavelength	nm	1540-1560
OLT Wavelength	nm	1310/1490
CATV input power	dBm	-5 a 10
OUTPUT		
Output power	dBm	8*19
Output power regulation	dB	-3 a 0
Power stability per port	dB	0,1
Noise figure (@6dBm Input)	dB	4 (max. 5,8)
INPUT-OUTPUT		
Return loss	dB	55
IN-OUT isolation	dB	30
OLT optical connectors		SC/UPC
CATV+OUT optical connectors		SC/APC
OTHER PARAMETERS		
Management interface		SNMP/WEB
Management port		Ethernet RJ45
Display and buttons		LCD/4
Status LED		IN/OUT/POWER
Mounting		19" rack 1U
Power supply (redundant)	V	90 ÷ 265
Consumption	W	≤50
Operating temperature	ºC	-5 ÷ 50
Storage temperature	ºC	-20 ÷ 85
Storage humidity	%	5 ÷ 95
Dimension	mm	483 ×422 × 44
Weight	Kg	11,5

SWITCH ETHERNET 26 PORTS

ECS 226

Intelligent switch with 24 Fast Ethernet ports plus 2 Gigabit Ethernet (GbE) uplinks.

APPLICATION
Suitable for IPTV signal distribution.

FEATURES
- Web-based user interface
- Download and copy configuration between switches
- Multicast IGMP Querier, snooping
- Reset button

MODEL		ECS 226
Reefrence		10501
Interfaces		"24xGbE+ 2xGbE/SFP Combo Uplink"
Capacity Switching	Gpbs	52
Baud rate	Mpps	38,69
MAC Addresses		8192
Concurrent VLANs		256
Power Supply	V~,Hz	100-240, 50-60
	W	18
Operating temperature	ºC	0-50
Dimensions	mm	440x201x44
Weight	Kg	2.81

Switch 24 GE + 4 x 10G SFP+ L2/L3 POE

SWI024G

The SWI024G is an L2/L3 manageable switch equipped with 24 Gigabit RJ45 ports and 4 10G SFP+ slots.
All RJ45 ports support the 802.3 af/at (PoE+) standard and provide a total PoE power of 380W.
Multiple L3 compatible management functions are available.
The SWI024G is capable of delivering high performance even in the most demanding installations, while in smaller networks it can act as a backbone for Gigabit switches and high-speed servers.4 SFP+ slots provide greater network flexibility.

The SWI024G is designed exclusively for the networking needs of growing installations, with a comprehensive set of management and security features.

APPLICATION
This product is suitable for small and medium-sized installations and offers ideal solutions for a wide variety of network scenarios.

CHARACTERISTICS
- 4 SFP+ 10 Gbps slots
- 24 RJ45 10/100/1000Mbps ports. POE 802.3 af/at- Management and administration via WEB, CLI, TELNET, SNMP
- Supports IEEE 802.1Q VLAN, QoS, ACL, SSL
- Supports Spanning Tree, Multicast IPV6, SNMP
- Supports 802.1X certification-
 Supports ERPS ring network
- Supports RSTP/MSTP spanning tree
- Supports RSTP/MSTP.
- Support Port Security, Port Monitoring and Port Isolation
- Support AI smart POE, auto detect PD devices, support PoE Watchdog
- Support Quaternary binding, ARP/IP/DoS protection -
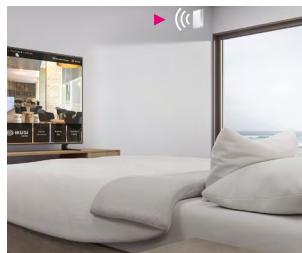
Mechanical Rack 19" 1U
- Support IEEE 802. 3i, 802.3u, 802.3ab, 802.3z, 802.3x , 802.3 az, 802.3at, 802.3af.- 24 802.3 af/at compliant POE ports, per port up to 30W, and 380W total PoE power.
- Features self-learning and self-aging of MAC addresses.
- Operates in store and forward mode
- LED indicators for power, link/activity monitoring
- Supports QoS, port mirroring and link aggregation protocol
- Designed in a 19-inch metal enclosure, with internal power supply. Suitable for rackmount installation.

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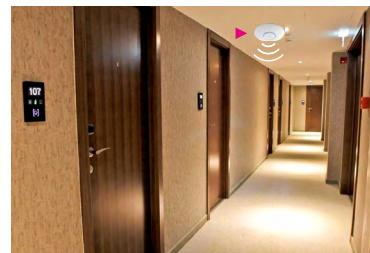
CONNECTIVITY
GPON SERVICIES

WIFI, VoIP, Hotspot,
CYBERSECURITY, CCTV
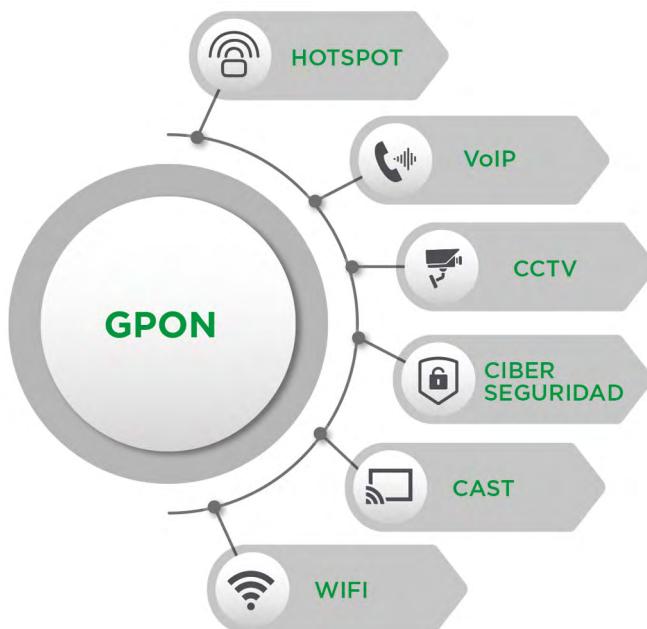
Room WIFI, IPTV, VoIP,
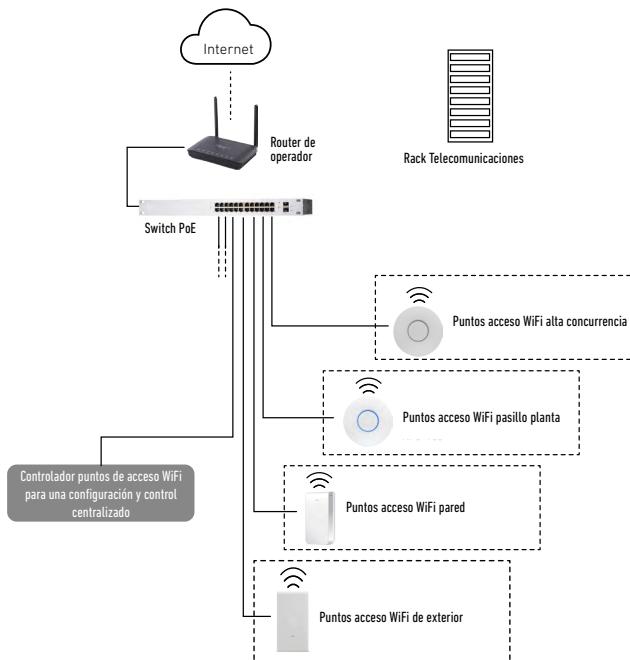
Common indoor areas
WIFI, CCTV,…

Common outdoor areas
WIFI, CCTV,…

GPON

- HOTSPOT
- VoIP
- CCTV
- CIBER SEGURIDAD
- CAST
- WIFI

WIFI/GPON

Internet

Router de operador

Rack Telecomunicaciones

Switch PoE

Puntos acceso WiFi alta concurrencia

Puntos acceso WiFi pasillo planta

Controlador puntos de acceso WiFi para una configuración y control centralizado

Puntos acceso WiFi pared

Puntos acceso WiFi de exterior

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